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, in speech at Charter Day, March 12, 1993
This is a very special time for the University of California and for Berkeley in particular. The University is marking the 125th anniversary of its founding in 1868 as a university “of the people and for the people.” For the first 50 years of the life of the University, Berkeley was its only general campus.

Anniversaries such as these provide an opportunity for review, reflection, and renewed attention to the future. In the coming years, Berkeley will be making advancements that will build upon its already strong foundation of excellence.

We are most concerned about enhancing undergraduate education. While Berkeley is a major research institution, I believe teaching and research are equal facets of the same process of education. We have also taken steps to make Berkeley a more personal university. We are a big operation, with many complex issues to manage. But we will be working to strengthen those elements of our institution that demonstrate caring and support for the individuals who make up our campus community.

Our focus, however, cannot be wholly on ourselves. Since its earliest years, Berkeley has recognized the values of the multitude of cultures around the world and has sought to increase the exchange among them. This is especially important today considering the global marketplace. Courses with an international and regional focus are offered in virtually all disciplines. And almost every language ever spoken on earth is taught here. Our highly diverse undergraduates, who are exceptionally talented, are themselves an important element of education. They help create an excellent environment for students to study, interact, and learn about people from diverse ethnicities and cultures.

Many of our goals for the future are refinements of basic strengths that have been Berkeley’s since its beginning. As we celebrate the University’s 125th anniversary, we know we are part of a continuum of excellence that has brought about one of the world’s great institutions of higher learning. For that we are most thankful, and because of that we undertake our new objectives with great respect and vigor.

Chang-Lin Tien, Ph.D., was named Chancellor at Berkeley in 1990. Professor of mechanical engineering at Berkeley since 1959, Tien is a member of the National Academy of Engineering and a recipient of the campus’s Distinguished Teaching Award.
### General Information

<table>
<thead>
<tr>
<th>Page</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Academic Calendar</td>
</tr>
<tr>
<td>5</td>
<td>Information Guide</td>
</tr>
<tr>
<td>5</td>
<td>Helpful Publications</td>
</tr>
<tr>
<td>9</td>
<td>About Berkeley</td>
</tr>
<tr>
<td>21</td>
<td>Student Life</td>
</tr>
<tr>
<td>31</td>
<td>Undergraduate Education</td>
</tr>
<tr>
<td>49</td>
<td>Graduate Education</td>
</tr>
<tr>
<td>69</td>
<td>Fees and Financial Aid</td>
</tr>
<tr>
<td>77</td>
<td>Academic Policies</td>
</tr>
<tr>
<td>87</td>
<td>Colleges and Schools</td>
</tr>
<tr>
<td>88</td>
<td>Haas School of Business</td>
</tr>
<tr>
<td>91</td>
<td>College of Chemistry</td>
</tr>
<tr>
<td>91</td>
<td>Graduate School of Education</td>
</tr>
<tr>
<td>92</td>
<td>College of Engineering</td>
</tr>
<tr>
<td>94</td>
<td>College of Environmental Design</td>
</tr>
<tr>
<td>95</td>
<td>Graduate School of Journalism</td>
</tr>
<tr>
<td>96</td>
<td>School of Law</td>
</tr>
<tr>
<td>97</td>
<td>College of Letters and Science (L&amp;S)</td>
</tr>
<tr>
<td>101</td>
<td>School of Library and Information Studies</td>
</tr>
<tr>
<td>102</td>
<td>College of Natural Resources</td>
</tr>
<tr>
<td>105</td>
<td>School of Optometry</td>
</tr>
<tr>
<td>106</td>
<td>School of Public Health</td>
</tr>
<tr>
<td>107</td>
<td>Graduate School of Public Policy</td>
</tr>
<tr>
<td>108</td>
<td>School of Social Welfare</td>
</tr>
<tr>
<td>109</td>
<td>Introduction to Courses and Curricula</td>
</tr>
</tbody>
</table>

### Courses and Curricula

<table>
<thead>
<tr>
<th>Page</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>Aerospace Studies</td>
</tr>
<tr>
<td>115</td>
<td>African American Studies</td>
</tr>
<tr>
<td>117</td>
<td>Agricultural and Environmental Chemistry</td>
</tr>
<tr>
<td>118</td>
<td>Agricultural and Resource Economics</td>
</tr>
<tr>
<td>118</td>
<td>Political Economy of Natural Resources</td>
</tr>
<tr>
<td>120</td>
<td>American Studies</td>
</tr>
<tr>
<td>121</td>
<td>Ancient History and Mediterranean Archaeology</td>
</tr>
<tr>
<td>121</td>
<td>Anthropology</td>
</tr>
<tr>
<td>127</td>
<td>Applied Science and Technology</td>
</tr>
<tr>
<td>128</td>
<td>Architecture</td>
</tr>
<tr>
<td>132</td>
<td>Visual Studies</td>
</tr>
<tr>
<td>132</td>
<td>Art and History of Art</td>
</tr>
<tr>
<td>132</td>
<td>Practice of Art</td>
</tr>
<tr>
<td>134</td>
<td>History of Art</td>
</tr>
<tr>
<td>138</td>
<td>Asian American Studies</td>
</tr>
<tr>
<td>140</td>
<td>Asian Studies</td>
</tr>
<tr>
<td>143</td>
<td>Astronomy</td>
</tr>
<tr>
<td>145</td>
<td>Berkeley Programs for Study Abroad</td>
</tr>
<tr>
<td>145</td>
<td>Bioengineering</td>
</tr>
<tr>
<td>146</td>
<td>Biology</td>
</tr>
<tr>
<td>146</td>
<td>Biomedical and Environmental Health Sciences</td>
</tr>
<tr>
<td>150</td>
<td>Biophysics</td>
</tr>
<tr>
<td>150</td>
<td>Biophysics and Medical Physics</td>
</tr>
<tr>
<td>150</td>
<td>Bioresource Sciences</td>
</tr>
<tr>
<td>150</td>
<td>Biostatistics</td>
</tr>
<tr>
<td>151</td>
<td>Buddhist Studies</td>
</tr>
<tr>
<td>151</td>
<td>Business Administration</td>
</tr>
<tr>
<td>158</td>
<td>Celtic Studies</td>
</tr>
<tr>
<td>160</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>162</td>
<td>Chemistry</td>
</tr>
<tr>
<td>165</td>
<td>Chicano Studies</td>
</tr>
<tr>
<td>166</td>
<td>City and Regional Planning</td>
</tr>
<tr>
<td>170</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>177</td>
<td>Classics</td>
</tr>
<tr>
<td>181</td>
<td>Cognitive Science</td>
</tr>
<tr>
<td>182</td>
<td>College Writing Programs</td>
</tr>
<tr>
<td>182</td>
<td>Comparative Biochemistry</td>
</tr>
<tr>
<td>182</td>
<td>Comparative Literature</td>
</tr>
<tr>
<td>185</td>
<td>Computer Science</td>
</tr>
<tr>
<td>186</td>
<td>Conservation and Resource Studies</td>
</tr>
<tr>
<td>188</td>
<td>Dance</td>
</tr>
<tr>
<td>188</td>
<td>Demography</td>
</tr>
<tr>
<td>189</td>
<td>Development Studies</td>
</tr>
<tr>
<td>191</td>
<td>Dramatic Art</td>
</tr>
<tr>
<td>192</td>
<td>Dance</td>
</tr>
<tr>
<td>192</td>
<td>Dramatic Art</td>
</tr>
<tr>
<td>194</td>
<td>Dutch Studies</td>
</tr>
<tr>
<td>195</td>
<td>East Asian Languages</td>
</tr>
<tr>
<td>200</td>
<td>East European Studies</td>
</tr>
<tr>
<td>200</td>
<td>Economics</td>
</tr>
<tr>
<td>204</td>
<td>Education</td>
</tr>
<tr>
<td>213</td>
<td>Electrical Engineering and Computer Sciences</td>
</tr>
<tr>
<td>215</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>219</td>
<td>Computer Science</td>
</tr>
<tr>
<td>222</td>
<td>Endocrinology</td>
</tr>
<tr>
<td>222</td>
<td>Energy and Resources Group</td>
</tr>
<tr>
<td>224</td>
<td>Engineering</td>
</tr>
<tr>
<td>226</td>
<td>Engineering—Double Major Programs</td>
</tr>
<tr>
<td>226</td>
<td>Engineering—Interdisciplinary Studies</td>
</tr>
<tr>
<td>227</td>
<td>Engineering Science</td>
</tr>
<tr>
<td>228</td>
<td>English</td>
</tr>
<tr>
<td>233</td>
<td>Entomological Sciences</td>
</tr>
<tr>
<td>236</td>
<td>Environmental Design</td>
</tr>
<tr>
<td>236</td>
<td>Environmental Sciences</td>
</tr>
<tr>
<td>237</td>
<td>Ethnic Studies</td>
</tr>
<tr>
<td>238</td>
<td>Ethnic Studies Graduate Group</td>
</tr>
<tr>
<td>239</td>
<td>Film</td>
</tr>
<tr>
<td>240</td>
<td>Folklore</td>
</tr>
<tr>
<td>240</td>
<td>Forest Products</td>
</tr>
<tr>
<td>241</td>
<td>Forestry and Resource Management</td>
</tr>
<tr>
<td>245</td>
<td>French</td>
</tr>
<tr>
<td>248</td>
<td>Freshman and Sophomore Studies</td>
</tr>
<tr>
<td>249</td>
<td>Genetics</td>
</tr>
<tr>
<td>249</td>
<td>Geography</td>
</tr>
<tr>
<td>252</td>
<td>Geology and Geophysics</td>
</tr>
<tr>
<td>255</td>
<td>German</td>
</tr>
<tr>
<td>260</td>
<td>Health and Medical Sciences Program</td>
</tr>
<tr>
<td>261</td>
<td>History</td>
</tr>
<tr>
<td>266</td>
<td>Humanities</td>
</tr>
<tr>
<td>266</td>
<td>Immunology</td>
</tr>
<tr>
<td>266</td>
<td>Industrial Engineering and Operations Research</td>
</tr>
<tr>
<td>269</td>
<td>Integrative Biology</td>
</tr>
<tr>
<td>277</td>
<td>Interdepartmental Studies</td>
</tr>
<tr>
<td>281</td>
<td>Interdisciplinary Studies</td>
</tr>
<tr>
<td>282</td>
<td>International and Area Studies</td>
</tr>
<tr>
<td>283</td>
<td>Italian</td>
</tr>
</tbody>
</table>

Note: Departments, groups, and programs are listed alphabetically regardless of the college or school to which they belong.
Courses and Curricula

285 Journalism
286 Landscape Architecture
289 Latin American Studies
291 Law
301 Natural Studies
302 Library and Information Studies
304 Linguistics
307 Logic and the Methodology of Science
307 Manufacturing Engineering
307 Mass Communications
308 Materials Science and Mineral Engineering
312 Mathematics
317 Mechanical Engineering
322 Medieval Studies
322 Microbiology
322 Middle Eastern Studies
324 Military Officers' Education Program (ROTC)
324 Military Affairs
324 Aerospace Studies (Air Force ROTC)
325 Military Science (Army ROTC)
325 Naval Science (Navy ROTC)
326 Molecular and Cell Biology
334 Music
338 Native American Studies
340 Natural Resources
340 Naval Architecture and Offshore Engineering
341 Near Eastern Studies
347 Neurobiology
347 Nuclear Engineering
349 Nutrition
349 Nutritional Sciences
351 Optometry
353 Vision Science
354 Oriental Languages
354 Parasitology
354 Peace and Conflict Studies
356 Petroleum Engineering
356 Philosophy
358 Physical Education
361 Physical Science
361 Physics
365 Plant Biology
367 Plant Pathology
368 Political Economy of Industrial Societies
370 Political Science
377 Population Studies
377 Psychology
383 Public and Nonprofit Management
383 Public Health
384 Public Policy
387 Range Management
388 Religious Studies
389 Rhetoric
392 Romance Philology
393 Scandinavian
394 Science and Mathematics Education
395 Slavic Languages and Literatures
400 Social and Administrative Health Sciences
404 Social Sciences
404 Social Welfare
407 Sociology
410 Soil Science
412 South and Southeast Asian Studies
416 Spanish and Portuguese
421 Statistics
423 Subject A: English Composition
423 Undergraduate and Interdisciplinary Studies
424 Women's Studies
426 Wood Science and Technology

Appendix and Index

430 Appendix
430 Criteria Used in Selecting Freshmen
430 Criteria Used in Selecting Advanced-Standing Students
431 Graduation Rates
431 Self-Paced Courses
431 Professional Development Program
431 University Research Expeditions Program
432 California Residency and the Nonresident Tuition Fee
433 Organized Research Units
434 Officers of Administration
436 Salary and Employment Information
437 Index
442 Campus Map

General Catalog, University of California at Berkeley, 1993-94.
All qualified students—regardless of race, sex, color, creed, age, handicap, sexual orientation, or national origin—are welcome.
Price: $3. To obtain by mail, send check ($5.25 for return at book rate, $7.00 for first class) made out to “ASUC Store” to: ASUC Store, Attn: Mail Order Department, University of California at Berkeley; Berkeley, CA 94720.
### Proposed Academic Calendar

#### Summer Session 1993

<table>
<thead>
<tr>
<th>Session</th>
<th>Dates</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ten-Week Session</td>
<td>June 7-August 13</td>
<td>Monday-Friday</td>
</tr>
<tr>
<td>Eight-Week Session</td>
<td>June 21-August 13</td>
<td>Monday-Friday</td>
</tr>
<tr>
<td>Independence Day Holiday</td>
<td>July 5</td>
<td>Monday</td>
</tr>
</tbody>
</table>

#### Fall Semester 1993

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tele-BEARS</td>
<td>April 12-September 17</td>
<td>Monday-Friday</td>
</tr>
<tr>
<td>Fee Payment Due</td>
<td>April 12-July 15</td>
<td>Monday-Tuesday</td>
</tr>
<tr>
<td>Fall Semester Begins</td>
<td>August 17</td>
<td>Monday</td>
</tr>
<tr>
<td>Instruction Begins</td>
<td>August 23</td>
<td>Monday</td>
</tr>
<tr>
<td>Labor Day Holiday</td>
<td>September 6</td>
<td>Monday</td>
</tr>
<tr>
<td>Thanksgiving Holiday</td>
<td>November 25, 26</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Instruction Ends</td>
<td>December 4</td>
<td>Friday</td>
</tr>
<tr>
<td>Final Examinations</td>
<td>December 7-15</td>
<td>Monday</td>
</tr>
<tr>
<td>Fall Semester Ends</td>
<td>December 15</td>
<td>Wednesday</td>
</tr>
<tr>
<td>Winter Holiday</td>
<td>December 24-27</td>
<td>Thursday</td>
</tr>
<tr>
<td>New Year's Holiday</td>
<td>December 30, 31</td>
<td>Monday</td>
</tr>
<tr>
<td>Instruction Begins</td>
<td>January 11</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Martin Luther King, Jr.,</td>
<td>January 17</td>
<td>Monday</td>
</tr>
<tr>
<td>Holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidents' Day</td>
<td>January 18</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Spring Recess</td>
<td>February 21</td>
<td>Monday</td>
</tr>
<tr>
<td>Spring Holiday</td>
<td>March 28-April 1</td>
<td>Monday</td>
</tr>
<tr>
<td>Instruction Ends</td>
<td>April 1</td>
<td>Saturday</td>
</tr>
<tr>
<td>Final Examinations</td>
<td>May 9</td>
<td>Saturday</td>
</tr>
<tr>
<td>Spring Semester Ends</td>
<td>May 13-21</td>
<td>Saturday</td>
</tr>
<tr>
<td>Memorial Day Holiday</td>
<td>May 21</td>
<td>Saturday</td>
</tr>
<tr>
<td></td>
<td>May 30</td>
<td>Monday</td>
</tr>
</tbody>
</table>

#### Spring Semester 1994

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tele-BEARS</td>
<td>November 1-February 11</td>
<td>Monday-Friday</td>
</tr>
<tr>
<td>Fee Payment Due</td>
<td>November 1-December 15</td>
<td>Monday-Wednesday</td>
</tr>
<tr>
<td>Spring Semester Begins</td>
<td>January 11</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Martin Luther King, Jr.,</td>
<td>January 17</td>
<td>Monday</td>
</tr>
<tr>
<td>Holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruction Begins</td>
<td>January 18</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Presidents' Day</td>
<td>February 21</td>
<td>Monday</td>
</tr>
<tr>
<td>Spring Recess</td>
<td>March 28-April 1</td>
<td>Monday</td>
</tr>
<tr>
<td>Spring Holiday</td>
<td>April 1</td>
<td>Monday</td>
</tr>
<tr>
<td>Instruction Ends</td>
<td>May 9</td>
<td>Friday</td>
</tr>
<tr>
<td>Final Examinations</td>
<td>May 13-21</td>
<td>Friday</td>
</tr>
<tr>
<td>Spring Semester Ends</td>
<td>May 21</td>
<td>Saturday</td>
</tr>
<tr>
<td>Memorial Day Holiday</td>
<td>May 30</td>
<td>Monday</td>
</tr>
</tbody>
</table>

*Calendar dates for the 1993-94 academic year were still tentative at press time. Please contact the Office of the Registrar at 642-0200 for current information.*
Information Guide

University of California at Berkeley
Berkeley, CA 94720
Area Code 510
General information: 642-6000

Admissions, Graduate
309 Sproul Hall, 642-7405
TTY/TDD: 642-8396

Admissions, Undergraduate
120 Sproul Hall, 642-0200
TTY/TDD: 642-8396

Advising, Pregraduate & Professional School
The Banway Building, 2111 Bancroft Way, Second Floor, 642-5207

Alumni Association
Alumni House, 642-7026

Associated Students (ASUC)
200 Eshleman Hall, 642-1431

Athletics, Intercollegiate
61 Harmon Gymnasium, 642-0580
177 Hearst Gymnasium, 642-2427
210 Memorial Stadium, 642-5363

Botanical Garden
Strawberry Canyon, 642-3343

Career Planning and Placement
2111 Bancroft Way, 642-1716
TTY/TDD: 642-0592, 642-5373

Child Care Services
2537 Haste Street, 642-1827

Counseling and Psychological Services
2222 Bancroft Way, 642-9494

Disabled Students' Program
230 Golden Bear Center, 642-0518
TTY/TDD: 642-6376

Education Abroad Program
160 Stephens Hall, 642-1356

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

Escort Service
642-WALK

Financial Aid
201 Sproul Hall, 642-0485

Health Services
2222 Bancroft Way, 642-2000
Clinic II, 643-7109
Clinic III, 643-7110
Vision Care
School of Optometry Clinic
200 Minor Hall
future appointments, 642-5761

Helpful Publications

General Catalog
by mail:
ASUC Textbook Store
University of California at Berkeley
Berkeley, CA 94720
Attn: Mail Order Dept.
by telephone:
call 444-6296

Schedule of Classes
ASUC Textbook Store,
642-0770

Resources: A reference guide for new Berkeley students

Student Activities and Services
102 Sproul Hall, 642-5171

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
Housing
2401 Bowditch Street, 642-3642

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

International Student Admissions, Graduate
309 Sproul Hall, 642-7405

International Student Admissions,
Undergraduate
110 Sproul Hall, 642-3246

International Student Advising
International House
2299 Piedmont Avenue, 642-2818

Library Information
Main Library Reference Desk, 642-6657
TTY/TDD: 642-0704

National Pan Hellenic Council
(Predominantly African American fraternities and
sororities)
102 Sproul Hall, 642-7950

Orientations, Undergraduate
Office of New Student Programs,
102 Sproul Hall, 642-4970

Pacific Film Archive
2625 Durant Avenue, 642-1124

Panhellenic Association (Sororities)
102 Sproul Hall, 643-6916

Personnel Office
University Hall, 642-9046
Personnel: 2199 Addison Street entrance;
Employment: 2200 University Avenue entrance
TTY/TDD: 642-6079

Police
1 Sproul Hall, 642-6760
Emergency 9-911 (or 911 from noncampus
extensions)

Photo, near right: Pacific
Film Archive, film depart-
ment of the University Art
Museum, offers nightly
programs of international
cinema to the public.
Pictured here is a scene
from ‘Taxi Driver.’

Photo, far right: The
University Art Museum
displays about 15 major
exhibitions annually and
items from its permanent
collection of Western and
Asian art on a rotating
basis. Admission to
gallery exhibitions is free
to Berkeley students.

Rape Prevention Education Program
2222 Bancroft Way, Room 2010, 642-7202
Rape Counseling Center
2222 Bancroft Way, Room 2100, 642-6074

Relations with Schools, Undergraduate Admission
103 Sproul Hall, 642-5135

Sports, Intramural and Recreational
Recreational Sports Facility, 2301 Bancroft Way,
642-8342

Strawberry Canyon Recreational Area
Strawberry Canyon, 642-5575

Student Activities and Services
102 Sproul Hall, 642-5171

Student Information Center
Martin Luther King, Jr., Student Union,
642-INFO

Student Learning Center
Golden Bear Center, 642-7332

Student Life Advising
140 Golden Bear Center, 642-7224

Summer Session
22 Wheeler Hall, 642-5611

Tours, Campus
Visitor Center, 101 University Hall,
642-5215

University Art Museum
2625 Durant Avenue, 642-0808

University Extension
2223 Fulton Street, 642-4111

Visitor Information Center
101 University Hall, 642-5215

Women’s Resource Center
250 Golden Bear Center, 642-4786
Staff at the Visitor Information Center, located in 101 University Hall, answer questions and conduct free guided tours of campus.
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 Library and Information Studies.
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 far-sighted 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 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. Fifteen members of the Berkeley faculty have been awarded Nobel Prizes for these and subsequent discoveries, as well as in literature and economics, for liberal arts kept pace with physical sciences. In 1966 Berkeley was recognized by the American Council on Education as "the best balanced distinguished university in the country."

The Berkeley Campus

South Hall, the oaks along Strawberry Creek, and the eucalyptus grove link Berkeley to its beginnings over a century ago. While the campus has grown considerably since then, it has retained much of the tranquil beauty of its rural past and is now a park-like oasis in an urban setting. Students study, work, and relax among Neoclassical buildings, wooded glens, and parklands spread across 1,232 scenic acres overlooking the San Francisco Bay.

With 31,000 students, a distinguished faculty, nearly 300 degree programs, and alumni in positions of national and international leadership, Berkeley today is a large and complex institution, offering students a vast range of scholarly endeavor and a wide arena for personal growth.

The campus is surrounded by wooded, rolling hills and by the city of Berkeley (population 106,500), "the Athens of the 20th century." Berkeley has a long history as one of America's most lively, culturally diverse, and politically adventurous cities. The surrounding San Francisco Bay Area offers culture, entertainment, and natural beauty without rival, much of which is accessible by BART (Bay Area Rapid Transit).

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 8 Nobel laureates, 109 members of the National Academy of Sciences, 68 members of the National Academy of Engineering, and more Guggenheim Fellows and Presidential Young Investigators than there are at any other university in the country. In a recent national study, Berkeley was the only college or university that had every one of its departments ranked 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.

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 Gate, 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 Stanley Livingston conduct on campus the first successful operation of a cyclotron.
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.

Student Diversity

The quality of Berkeley’s student body complements the stature of its faculty. Most students are Californians, but 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 comprises nine campuses, each with a distinctive character. The San Francisco Medical Center was added to the University in 1873, the Davis campus in 1905, Riverside in 1907, San Diego in 1912, Los Angeles in 1919, Santa Barbara in 1944, and Santa Cruz and Irvine in 1965. The campuses have five law schools, three medical schools, and schools of architecture, business administration, education, engineering, and many others.

The nine campuses have a full-time faculty of about 6,000 and the total enrollment is about 144,600 students, most of them California residents. Nearly one third 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
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.
Interdisciplinary Education

There are several possibilities for studies of an interdisciplinary nature at Berkeley:

Division of Undergraduate and Interdisciplinary Studies: The mission of the Division of Undergraduate and Interdisciplinary Studies 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 it administers the field major in interdisciplin ary studies and the group majors in Celtic studies, cognitive science, environmental sciences, film, mass communications, peace and conflict studies, and religious studies. For complete descriptions of the Undergraduate and Interdisciplinary Studies majors and major courses, please see the entries listed alphabetically by major. In addition to these majors, it offers special interdisciplinary courses such as Topics in Western Civilization and The Development of World Civilization. Minor programs are offered in Celtic studies and religious studies. Students should consult the Division of Undergraduate and Interdisciplinary Studies (301 Campbell Hall) for more information.

Interdepartmental Studies Courses: Courses that are sponsored by two or more departments are considered interdepartmental studies because the content of each course transcends the boundaries of individual departments. Each class is taught by one or more instructors who represent the departments sponsoring the class. There is no central information point for these courses; for further information, please contact the departments sponsoring the class. (This information appears at the end of each course description in the Interdepartmental Studies section of this catalog.) The courses are subject to change each year.

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): programs in Asian American Studies, Chicano Studies, and Native American Studies in the Ethnic Studies Department; 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).

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 two 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, 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 humanities, sciences, and social sciences. In addition, the teaching programs collaborate with the various centers in promoting student internships. For more information about International and Area Studies at Berkeley, contact the IAS Teaching Program Office, 207 Moses Hall, 642-4466 or one of the research centers listed to the left.

Academic Resources

The University Library

Berkeley's library system contains one of the best research collections in the country. The system consists of the Main (Doe) Library, the Moffitt Undergraduate Library, the Bancroft Library, 22 branch libraries, and many special libraries. The combined holdings of the libraries total more than 7,854,600 volumes, 88,300 current serial publications, 55,000,000 manuscripts, more than 4,580,800 microform items, 398,500 maps, and 60,000 sound recordings.

Construction is underway on a new four-story underground addition which will connect the Doe and Moffitt libraries. The addition, which will house the book stacks currently in Doe, is scheduled to be completed in mid-1994. Both libraries will remain open during construction.

Most of the Berkeley humanities and social sciences materials are located in the Main Library. In addition, an open stack core collection of 170,000 volumes and 300 serial titles, designed to provide a convenient entry into the library system for Berkeley's 21,000 undergraduate students, is available in the Moffitt Undergraduate Library. Special collections in Moffitt include reserve texts assigned in undergraduate courses and a file of course exams. Access is limited to UC faculty, students, and staff upon presentation of current UC identification.

The Media Resources Center, on Moffitt's first floor, provides spoken word and visual image materials on a wide variety of subjects for student research and class
reserves. The center houses audio and video cassettes, slides, phonorecords, and the equipment to use these materials. The Library Microcomputer Center, also located in Moffitt Library, offers low-cost personal computing and consulting services to all students even if they are not enrolled in any computing-related courses.

The Bancroft Library, devoted primarily to the documentation of western North America, maintains the largest collection of Mark Twain archives in the world. The Berkeley collection is also distinguished for its East Asiatic Library, which 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 photo ID card. Borrowing privileges and access to the collections vary from unit to unit. Orientation tours are scheduled throughout the year, and librarians are available at reference desks to help you. The library’s catalog services are described in leaflets available at any branch library. For information about the campus libraries or about enrolling in small group sessions in how to use the online catalogs, ask at the Information Desk in the Main Library (643-9999).

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 12,000,000 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.

**Lawrence Hall of Science**
The Lawrence Hall of Science is both a public science center and a research unit in science education. To increase public understanding of science, LHS’s programs are designed to involve participants actively in science. Visitors play logic games on computers, participate in interactive planetarium shows, conduct do-it-yourself experiments and observations in the biology and physics discovery laboratories, and explore a myriad of 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 4:30 p.m. There is an admission fee. Transportation to and from LHS is available on a shuttle bus on weekdays, excluding UC holidays. For more information, call 642-5132.

**Phoebe A. Hearst Museum of Anthropology (Formerly the Lowie Museum of Anthropology)**
Facilitating scholarly research and educating undergraduate and graduate students from many disciplines including anthropology are among the primary functions of the Hearst Museum. Teaching exhibits are installed to assist faculty and students with ongoing instruction and individual study. The museum also maintains a program of changing exhibits in its exhibit hall and at other points on campus to meet the varied educational and aesthetic interests of the University community and general public. There are 645,000 catalogued specimens in the museum’s holdings. The exhibit hall is open Tuesday through Friday from 10 a.m. to 4:30 p.m. and on weekends from noon to 4:30 p.m. Admission is free on Thursdays. The hall is closed Mondays and holidays. For further information, please call 642-3681 or 643-7648.

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*Photo to left is part of the Hearst Anthropology Museum collection on display. It is an Acoma water jar, collected in Acoma, New Mexico, in 1902. Donated by Phoebe Hearst.*

*I am reminded of the story of Marshal Lyautey, who once asked his gardener to plant a tree. The gardener objected that the tree was slow growing and would not reach maturity for a hundred years. The Marshal replied, “In that case there is no time to lose. Plant it this afternoon.”* —John F. Kennedy, Charter Day 1962
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 become short-term members of field research teams engaged in projects such as wildlife habitat studies, botanical collecting expeditions, ethnographic fieldwork, ecological surveys, fossil excavations, historical studies, and the like.

Some of the projects scheduled for 1993, each two-three weeks in duration, include:
- archaeological surveys and excavations of medieval Irish monasteries;
- Fremont Indian settlements in Nevada and a dinosaur excavation in the San Joaquin Valley;
- environmental studies of tropical forests in Costa Rica and Ecuador;
- a study of the role of art in Mali.

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

Language Laboratory

Dedicated to the support of language instruction, the Language Laboratory offers a variety of services and houses an extensive collection of audiotapes, including programs in 98 languages. Laboratory services include listening and viewing facilities and a fledgling computer laboratory for class and individual use, an audiotape lending library, a recording studio, and a tape duplication service. In addition to language instruction programs, tape library holdings include archival collections of linguistic field work and noteworthy University speeches and events. For further information, call 642-0767.

Summer Session

An extensive offering of regular academic courses and special programs is available through Summer Session. 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. Extensive cultural and recreational activities are provided. Courses are taught by both regular and visiting faculty.

Study Abroad

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

Exchange and Cross-Registration Programs

Undergraduate students may participate in cross-registration programs with Mills College, Oakland; Sonoma State University; San Francisco State University; California State University, Hayward; College of Holy Names; Dominican College; and JFK Kennedy University. 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 1,900 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.

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 23 multi-course certificate programs in such fields as interior design, marketing, hazardous materials management, computers and information systems, telecommunications, and landscape architecture. The 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.

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 curriculum 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, Atherton, Fremont, Walnut Creek, and San Ramon. Outside the United States, high-technology short courses in Europe and Asia draw an international audience. The Oxford-Berkeley Program heads a roster of travel-study courses bringing American adults to cultural centers around the world for on-site study.

Many Berkeley campus courses in regular session may also 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 write to University of California Extension, 2223 Fulton Street, Berkeley, CA 94720, or call 642-4111.

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**Cultural and Recreational Resources**

**The University Art Museum and Pacific Film Archive**

The University Art Museum, located at 2626 Bancroft Way (near College Avenue), is the major art 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 642-1412. 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 6,000 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 extracurricular 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 University Chorus, Chamber Chorus, Orchestra, Collegium Musicum, chamber music ensembles, Javanese Gamelan, and African drumming are included; many of these groups give concerts every semester. Extracurricular musical groups are the UC Jazz Ensemble (642-5062), the Cal Marching Band (642-6704), and Student Musical Activities—Vocal (642-3880). The Department of Music also presents free noon concerts on Wednesdays in Hertz Hall.
The Department of Dramatic Art offers many opportunities for students interested in theater and dance. Credit is offered for all aspects of participation in its productions: acting, dancing, directing, designing, stagecraft, and scenography. A resident dance company tours the West Coast throughout the year and a summer season of lunchtime theater adds to the variety of theater offerings sponsored by the department. For information please call 642-1677.

The Student Union Program, Entertainment, and Recreation Board (SUPERB), an all-student-run organization located in Room 201, Martin Luther King, Jr., Student Union, 642-7477 or 642-7511, runs an activities and entertainment program for the Associated Students of the University of California (ASUC) to help bring cultural, educational, recreational, and social events to the campus. Programs and activities include concerts, speakers, dances, comedy, movies, free sneak previews, up-and-coming bands, music and art festivals, and special presentations, including free noon concerts in lower Sproul Plaza.

Cal Performances—a year-round program of music, dance, and drama. 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 Physical Education offers classes to students in aquatics, sports, dance, combatives, and exercise. Instruction is directed toward improving performance skills, learning about personal health 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 Physical Education 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 offices at 103 Harmon Gym and 200 Hearst Gym.

The Department of Athletics and Recreational Sports offers a wide range of leisure and competitive activities. Intramural Sports provides a diverse range of organized team and individual sports for its participants, as well as job opportunities through officiating. Sports Clubs offer students, faculty, staff, and alumni national and international competitions, recreation, and instruction in 29 sports. Also, students are invited to try out for UC spirit groups: yell leaders, songleaders, rally committee, and Oski.

Cal STAR assists disabled students who are interested in recreational programs. We offer volunteers as well as adapted equipment.

The Adult Sports Program allows members of the campus community to participate in a wide variety of noncredit instructional classes from jazz dancing to massage, yoga, and aerobics.

The Department of Athletics and Recreational Sports also offers extramural competitive sports for highly skilled student athletes. In addition, student spectators can watch the Golden Bears play in competitive intercollegiate contests.

The Recreational Sports Facility offers Berkeley students an opportunity to enjoy unstructured recreational and fitness activities. RSF features an Olympic-size swimming pool; a weight room with free weights, Cybex, Universal, and Keyser machines; Stairmasters, Windracers, Lifecycles, Concept II rowing machines, and Schwinn Air-Dyne cycles; courts for racquetball, handball, squash, tennis, badminton, basketball, and volleyball; a quarter-mile outdoor track; coed Jacuzzi; and table tennis. During the fall and spring semesters, Berkeley students can enter RSF at no additional charge by presenting their Cal photo ID. During the summer, Berkeley students must purchase a Cal Rec Club student summer membership in order to use the facility. Memberships and day passes for guests may be purchased at the RSF cashier's station. For further information, call 642-8342.

Cal Adventures is Berkeley's outdoor recreation program, offering a wide variety of classes and outings in activities such as backpacking, rock climbing, white-water kayaking, sea kayaking, white-water rafting, wilderness first aid, outdoor photography, windsurfing, sailing, rowing, and cross country and back country skiing. A complete line of rental equipment, including sleeping bags, tents, and stoves, is available at affordable prices. The program is open to the community as well as to students, alumni, faculty, and staff. A few locations Cal Adventures frequents are Yosemite National Park, Lake Tahoe, the San Francisco Bay, and the High Sierra. Facilities include an aquatic site at the Berkeley Marina, and the main office, located in the Recreational Sports Facility, 2301 Bancroft Way. Office hours are Monday through Thursday, 11 a.m. to 6 p.m., and Friday, 11 a.m. to 7 p.m. For more information about Cal Adventures and a free brochure, please call 642-4000 or write to Cal Adventures, Recreational Sports Facility, 2301 Bancroft Way, Berkeley, CA 94720.
Computing on Campus

The Berkeley campus provides access to a full range of computing capabilities, from individual workstations to supercomputers. Apple Macintosh, DEC VAXstation running ULTRIX and VMS, IBM PC, PS/2, and compatible, IBM RS/6000, NeXT, and Sun UNIX workstations are supported by Workstation Support Services. DEC RISC computers running UNIX, an IBM 3090 computer running VM/CMS, a Cray supercomputer, and Sun clusters are supported by Central Computing Services. A high-speed network provides data communication among campus computers as well as access to other universities and supercomputer centers around the country.

Specialized instructional computing facilities are available at the Tolman Microcomputer Facility (643-6253), the WEB (Workstations in Evans Basement, 643-9661), the Humanities Microcomputer Facility (643-6253), the Davis Microcomputer and Workstation Facilities (643-6253), and QAL (the Quantitative Anthropology Laboratory, 642-7901). The Humanities and Davis Microcomputer Facilities and QAL are available for free drop-in use when they are not being used for instruction. Specialized facilities and services for the social sciences are available through the Computer-Assisted Survey Methods Program (642-6592).

Among academic units, Electrical Engineering and Computer Sciences, Business Administration, Chemistry, Physics, Library and Information Studies, Engineering, and many others have extensive computing facilities. All departments have faculty computing coordinators who can advise on computing resources.

Many of the campus’s computers and workstations are connected to the Campus Network, which also provides access to the MELVYL and GLADIS online library catalogs. The Campus Network is connected to major national and international data communications networks.

The various systems offer a wide selection of computer languages and applications software, including statistical, mathematical, and graphics packages; database management systems; microcomputer-to-host communications programs; and text processing software. Software and systems documentation is available for reference both online and at libraries on campus. Printed copies of many manuals may be purchased at the ASUC General Bookstore or other local bookstores; selected writeups are available at Bear Express Copy, ASUC Plaza level, Student Union.

The Scholar’s Workstation offers selected workstations, software, and peripherals at a substantial discount to full-time faculty, staff, and students. Noncredit instruction for beginning and advanced computer users is offered each semester, in a variety of media. Consultants are available in Evans Hall, at other locations on campus, and via electronic mail to provide guidance in using the computer systems. Newsletters keep the campus community informed about developments in computing at Berkeley.

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 12,000 different species, and something is in bloom every month of the year.
One major collection is cacti and other 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, gymnosperms, 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. There is no admission charge. A shuttle bus provides transportation to and from the garden, and parking is available at the garden. For shuttle information, call 642-5145.

The California Alumni Association

More than 100,000 former students are members of the California Alumni Association who keep in contact with Berkeley and work for the continuing welfare of the University and its student body.

The association administers the Alumni Scholarship Program, which annually awards more than $500,000 to some 550 undergraduates. It co-sponsors career programs with various campus units and maintains the Alumni Career Resources file, a compilation of Cal graduates whom students may contact to learn more about career fields. In addition to offering job coaching programs which pair alumni with students or recent alumni to assist with aspects of the job search, the association co-sponsors Cal in the Capital and Cal in Sacramento, internship programs for students interested in summer work in the national and state capitals. It also sponsors four Class Councils, which provide activities for students within the same class year on campus; and the Alumni Scholars Club, a social and service organization. Recently the association has begun a program through which alumni provide students with internships in the community, in paying and non-paying positions. Currently, students receive a complimentary membership in the Alumni Association during the senior year.

Alumni are actively involved in helping the University recruit the finest high school students to Berkeley, and every year they host receptions honoring newly admitted students. Outstanding students from underrepresented minorities in particular are attracted to Berkeley through the association's Student Outreach and Retention Program. The association augments the campus's minority student retention programs with its own Multicultural Mentorship Program, which provides one-on-one support for students of all cultures and ethnicities. And it has launched a new volunteer program, Cal in the Community, through which alumni and current students work together in public elementary schools on such projects as schoolyard beautification, mentoring, and tutoring.

Among the many benefits association members enjoy are the nationally respected magazine California Monthly; free UC library privileges on most UC campuses; access to the Lair of the Golden Bear vacation center in the Sierra; year-round alumni travel programs; major medical and life insurance plans; discounts on UC Berkeley Extension courses; access to Cal ProNet, a resume database service; and discounts on use of campus sports facilities.

The association recognizes distinguished alumni achievement and outstanding service to the University, its alumni, and the community, and co-sponsors the Distinguished Teaching Awards for faculty. It presents a variety of events each year, such as the Charter Banquet, the Senior Celebration, and Cal Alumni Day. Alumni clubs help members stay in close touch with the University and with one another. 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.

The Visitor Information Center

The staff of the Visitor Information Center, located at 101 University Hall, answers questions about the campus and conducts free one-hour, 45-minute tours Monday, Wednesday, and Friday at 10 a.m. and 1 p.m. There are limited Saturday tours available during the academic year; please call for times. During the semester, tours of a residence facility are also available. Special group tours may be arranged by calling 642-5215 (allow two weeks’ notice). A brochure describing a self-guided walking tour is also available for visitors who wish to explore the campus at their leisure. For information and questions regarding current campus activities, call Calendar at 642-2294.
From the beginning, students at Berkeley have been active. Most of the ebullience of campus life throughout the years has come from that activity. Students built the first fraternity house in 1871 and started the first campus sorority in 1880. They began a cooperative society in 1883 to run a bookstore. The student newspaper has been on a five-day-a-week schedule since 1894. These enterprises are all still around, as is the special spirit of Berkeley students.

Yell leaders and pom-pom girls (as they were called back then) in the early '60s.
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.

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 nonprofit 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, hobbies, 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

Career Planning and Placement Center

The Career Planning and Placement Center (642-1716; TTY/TDD, 642-0592) helps students and alumni define their career objectives and develop job search skills to find employment consistent with their career goals. It provides information about the world of work and helps job seekers evaluate their education, experience, and interests. The center offers a series of career workshops and special programs; provides extensive on-campus interviewing opportunities for students seeking full-time, part-time, summer, internship, and casual employment opportunities; and maintains an extensive career library (2111 Bancroft Way, second floor) containing reference materials, including occupational information, directories of employers, employer recruiting literature, and past job listings.

Advisers are available by appointment to assist students, their spouses, and alumni with any aspect of the career planning and placement process. An adviser at 2200 Bancroft Way can provide specialized assistance to disabled students and alumni.

The Career Planning and Placement Center supports and subscribes to all state and federal equal opportunity employment practices.
If you or your spouse is seeking:

<table>
<thead>
<tr>
<th>Work-study positions</th>
<th>Office of Financial Aid, 212 Sproul Hall</th>
</tr>
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<tbody>
<tr>
<td>Part-time, temporary, odd-job, or summer employment</td>
<td>2200 Bancroft Way</td>
</tr>
<tr>
<td>Positions in business, industry, government, social services, or nonprofit organizations</td>
<td>2111 Bancroft Way, 2200 Bancroft Way, 26 Barrows Hall</td>
</tr>
<tr>
<td>Positions in education</td>
<td>2111 Bancroft Way</td>
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Pre-Graduate and Professional School Advising (PG & PSA)

If you are interested in advanced study in business, a health science, law, or many other graduate or professional fields, you may obtain comprehensive advising in these areas and assistance with applications and letters of recommendation to the schools of your choice. PG & PSA is located at the Banway Building, 2111 Bancroft Way, 642-5207.

Child Care

The Child Care Program is available to full-time registered Berkeley students and provides care for children aged four 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 single-parent families; next, to two UC-parent families; and finally to families with descending levels of activity (i.e., work or school). Within each category, priority is given to families with lower incomes. Two hours of parent participation per week are required. 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, Berkeley, CA 94720, 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 in Student Activities and Services (SAS), 102 Sproul Hall (642-6778).

Fraternities and Sororities
Membership in a fraternity or sorority is accomplished through a mutual selection process known as “rush.” If you are interested, apply through 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 groups include Honor Students’ Society, Phi Beta Kappa, Prytanean, Mortar Board, Golden Key, Omega (general honor societies), 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 (642-6772). Contact specific departments for the other groups.

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 Eshleman Library on the seventh floor, Eshleman Hall (642-2892). Grants are available through the Committee on Student Publications in 102 Sproul Hall (642-6772).

About homework and school: Never fool yourself into thinking you can study in your room, never wear high heels to class, never take self-paced math, keep up on your homework or you’ll regret it at final exams.

—Freshman, undeclared
Fun Things to Do

ASUC Art Studio
Classes in photography, video, jewelry-making, papermaking, drawing, painting, ceramics, printmaking; lower level, MLK, Jr., Student Union, 642-0365

Athletics
Cal-STAR (recreation for disabled people), Recreational Sports Facility (RSF), 643-8031
Department of Recreational Sports, 2nd floor, RSF, 642-8342
Intercollegiate Athletics, Harmon Gym, 642-0580
Hearst Gym, 642-2427
Intramural Sports, RSF, 642-6822
Tickets, Athletic Ticket Office, 642-5150 or 1-800-GO-BEARS

BQBE
Recreation for disabled people, 605 Eshleman Hall, 849-4663

Bowling
The Underground, MLK, Jr., Student Union, 642-3825

Cal Performances
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 over 150 ASUC-funded student groups. For information call 642-4356.

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 Volunteer Center
Cal Corps, part of Student Activities and Services, is the fiscal and administrative office for approximately 20 community service projects that are initiated and coordinated by students. The agency funds long-term projects such as tutorial and educational programs, nutrition projects, senior citizen projects, refugee and immigrant projects, dance and music programs, and other social service projects. If you are interested in starting a new project or doing volunteer work of any kind, Cal Corps offers orientation programs and information on its various services. Applications and proposals are welcomed during spring semester for the following academic year. Grants range from a few hundred dollars to $1,500. Cal Corps is located in 303 Eshleman Hall, 642-3916.

Cal Corps Clearinghouse is a computerized database listing volunteer positions at more than 200 community agencies on campus and in the Bay Area, among them positions with museums, public schools, senior centers, and legal aid collectives. Students interested in volunteering must complete an information form and are then counseled. Their information is entered into the computer, a “match” is made, and a list of agencies is printed.

The Cal Corps staff work closely with two other volunteer agencies near campus: Stiles Hall (2400 Bancroft Way, 841-6010) and the University YWCA (2600 Bancroft Way, 848-6370). For placement information, contact Cal Corps or the agencies.

Short-term or one-time volunteer opportunities are also available. Commitment may vary from a few hours to a weekend. Cal Corps Clearinghouse is located in 307 Eshleman Hall. If you are interested, drop by the office or call 643-9131.

Students may also earn 1-3 units of course credit by taking Social Welfare 98/197, “Issues and Action: Implementing Community Service.” Juniors and seniors interested in outreach to the homeless may earn
2-3 units of credit by taking Social Welfare 197, "Homelessness Issues and Action." Call 642-3916 for more information on both classes.

CalPIRG
The California Public Interest Research Group (CalPIRG) is an independent, nonprofit corporation established by Berkeley students for research and advocacy of contemporary public issues. Students propose and conduct CalPIRG projects with the aid of professional staff, and policy is set by a nonpartisan student board of directors. The CalPIRG office is in 605A Eshleman Hall, 642-7313.

Other Organizations
A large number of other campus organizations such as student religious groups, fraternities, sororities, student government, student service units, and academic departments also provide internships and community service opportunities. For further information, consult the Cal Corps Volunteer Clearinghouse.

Counseling and Psychological Services
Counseling and Psychological Services (CPS) provides a variety of services for students: career, academic, and personal counseling through individual interviews; couples counseling; testing services; occupational information; and group counseling. Counselors are a multicultural group of social workers, psychologists, and psychiatrists. CPS is part of the University Health Service and is located on the third floor of the Tang Center, 2222 Bancroft Way, 642-9494.

Any Berkeley student can come in to talk about deciding on a major, learning about interests and abilities, clarifying career goals and exploring options, coping with personal crises, dealing with concerns about relationships with family or others, overcoming learning and concentration problems, life at Berkeley, or any other concerns.

Psychological and aptitude testing is provided as part of the counseling process. An extensive group counseling program is available on a variety of topics such as procrastination, coping with stress, and improving relationships.

CPS maintains a library of reference materials on occupations, professions, and career opportunities; a comprehensive collection of college catalogs; and directories of colleges, professional schools, and training programs which you may use, even if you are not seeking counseling services.

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 or temporary injury, you can receive help with personal and academic support services such as admissions, enrollment, readers, notetakers, sign language interpreters, attendant referral, adapted transportation, wheelchair repair, and housing assistance. A residence program for severely disabled students needing attendant care is available. Many other services are available and most are free. If you have a visual, hearing, orthopedic, mobility, or 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.

Services the Graduate Assembly offers include direct funding for graduate student groups and activities, an annual new graduate student orientation, teacher's assistant training programs, graduate minority and women's projects, and a lounge and meeting room for general use. Staff assistance is available for a variety of information and referral services including information on fellowships, affirmative action, and other campus units.

Health Services
University Health Service
The University Health Service (UHS) is an accredited organization providing access to comprehensive medical care, counseling and prevention services to students. Faculty and staff who are on the Qual-Med health plan or who need occupational health services may also use the health service. The UHS is located in the Tang Center at 2222 Bancroft Way.
Services include visits to physicians, nurse practitioners, and physician-specialists; health education; individual and group counseling; a pharmacy; physical therapy; and basic laboratory tests and X-rays. For people needing immediate care for serious illness, there is an Urgent Care Center and 24-hour telephone advice.

Most of the services are subsidized by student registration fees, so the cost to students is modest. For some basic services there is no charge.

During the fall and spring semesters, the UHS is open every day. During semester breaks and summers, the UHS is open weekdays except holidays.

Below is an overview of services available to students, staff, and faculty. For more information, please call the Health Service at 642-2000.

Registered students are served in two distinct ways by the UHS: on-campus health and medical services and major medical health insurance for hospitalization or other referrals to off-campus services.

On-Campus Services at UHS: For General Information call 642-2000. On-campus services include visits with the physician/nurse practitioner of your choice; visits to specialists in any of 12 medical disciplines; walk-in urgent care; appointments with a nutritionist, chemical dependency counselor, or health educator for help with issues from sexuality to stress management; rape prevention education and crisis counseling; common laboratory tests and X-ray procedures; pharmacy; allergy tests and shots; international travel care; workshops and classes; peer education; and community service and volunteer opportunities.

Most services are supported by student registration fees, but some services have additional fees. Payment plans are available.

Major Medical Health Insurance: For Health Plan Information call 642-5700. All Berkeley students must carry major medical health insurance while attending Berkeley. Students are automatically enrolled in the University's 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 and is designed to minimize the costs to students who have health problems requiring specialized off-campus care, hospitalization, and emergency care.

Students covered by other health insurance may choose not to use the University plan or pay the fee if they can show that their coverage is comparable to that available under the University plan. Waiver information is included in all registration packets.

A major medical health insurance plan is also available for purchase to spouses and dependents of students.

Services to Faculty and Staff: The following on-campus services are available to Berkeley employees: Occupational Health Service for work-related injuries and illnesses; health care for those who choose the Qual-Med medical plan; CARE Services for Faculty and Staff, the campus employee assistance program that provides counseling, assessment, and referrals; HEALTH* MATTERS, a wellness program of workshops, classes, and activities; international travel care; rape prevention education and crisis counseling; and consultation on health issues affecting the Berkeley campus community.

Berkeley's University Health Service is nationally recognized for its innovative programs and high-quality accredited treatment facility.

Optometry Clinic
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. 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;
- job-related vision examinations and safety glasses.

The school also operates an eye clinic 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 642-5761; 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 should check the appropriate box on the Application for Admission to receive descriptive material; graduate students should write directly to Housing Services, 2401 Bowditch Street, Berkeley, CA 94720, 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 75 percent of whom are new, incoming students. All new, incoming fall freshmen 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 Center. Most halls are co-ed, and most offer a dining facility, recreational and social programs, and study rooms. University housing includes “theme houses” 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. To see the listings, you must visit the office at 2405 Bowditch Street and present photo identification and a current registration card or letter of admittance to the University. Students should plan to spend at least one week looking for a place to live. For more information, write to the Community Living Office, 2401 Bowditch Street, Berkeley, CA 94720, or call 642-3642.

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 17 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 1,022 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
How old are Berkeley students?
- Median age for undergraduates: 20
- Median age for graduate students: 26
- 8% of undergraduate men and women are over 25
- 35% of graduate women are over 30
- 29% of graduate men are over 30

What are students majoring in?
- Undergraduates who have declared majors, fall 1990:
  - 24.7% social sciences
  - 12.9% humanities
  - 10.4% engineering
  - 6.8% biological sciences
  - 4.9% interdisciplinary studies
  - 4.5% physical sciences
  - 4% business administration
  - 3.6% environmental design
  - 2.7% natural resources
  - 2.5% chemistry

- Graduate students, fall 1990:
  - 16.4% engineering
  - 10.9% social sciences
  - 9.7% humanities
  - 9.4% law
  - 7.4% physical sciences
  - 7.4% health sciences
  - 5.9% business administration
  - 5.5% chemistry
  - 5% biological sciences
  - 4.8% education

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 at Berkeley; Berkeley, CA 94720; 642-9470. For nonresident membership, call the Program Office, 642-9460.

Information
The Student Information Center on the main floor of the Student Union provides campus, transportation, and entertainment information; counseling and advising referrals; directory assistance; campus literature; career planning and placement bulletins and supplements; help with registration procedures; a Student Union lost and found; and on-loan magazines and newspapers. Call 642-INFO.

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.

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.
Ms. Kairen’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**

Part of Student Activities and Services, the Office of New Student Programs introduces 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 Programs also organizes fall’s Welcome Week, 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. Mailing address for the Office of New Student Programs: 102 Sproul Hall; office location: 2515 Channing Way, 642-4970.

**Smooth Transition**

When Chang-Lin Tien became chancellor in the summer of 1990, he made a primary goal of easing the transition process facing students at the beginning of each semester. 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. Do not be surprised if you see Chancellor Tien staffing the Information Tent on Sproul Plaza during Smooth Transition time.

**Re-entry Program**

The Re-entry Program provides special services to undergraduates over the age of 25 and to graduate students who enter Berkeley at age 29 and over. Services and programs designed to promote collaborative learning include individual writing assistance; writing groups; study groups; academic skills workshops; student-faculty colloquiums; academic orientations for new students; and peer advising. Publications include “Re-visions,” a newsletter for re-entry students, and an orientation guidebook. The program is located in the Student Learning Center, 260B and 260J in the Golden Bear Center, 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. Police services are located in Room 1 in the basement of Sproul Hall. You can make emergency calls on a 24-hour basis by telephoning 9-911 from nonrestricted office phones, 642-3333 from restricted phones, and 911 from campus pay phones. The emergency numbers should also be used to report fires and to request ambulance service. For general business, call 642-6760; for personal safety counseling and crime prevention information and training, call 642-3679; for lost and found, call 642-4936.

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We hear about students’ feelings of isolation on a large, decentralized campus like Berkeley. Being involved in an activity, group, a community service project, or an informal study group is an excellent way for students to meet, share, and help each other. I tell students, these can be your support groups, take advantage of them.

—Roseanne Fong, Cal Corps
All bicycles on campus must have California bicycle licenses. The Police Department licenses bicycles through the Bike Bureau; call Cal-B-SAFE at 642-7233 for information and business hours.

**Escort Service**
Night escort service is available to your car, nearby home, or public transportation from 6:30 p.m. to 2:00 a.m. 365 days of the year. Call 642-WALK.

The following programs are also available for your safety:
- Night Safety Express Shuttle Service
- Cal Watch (a volunteer night patrol program)
- mace training
- self-defense classes
- safety presentations

Please call 642-7233 or 642-B-SAFE for further information.

**Rape Prevention**
The University Health Service offers counseling and advocacy services for sexual assault survivors; counseling services for friends and family of survivors; prevention education and training services for students, faculty, and staff; self-defense training; and referral services. Call 642-6074 for counseling/advocacy and 642-7202 for education and training.

**Student Activities and Services**
Student Activities and Services (SAS) staff work closely with students, campus units, and the ASUC on activities such as Smooth Transition; the Activities Fair; leadership courses and institutes; UC student regent recruitment; cult education; ethnic-specific advising; Immigrant Students Project; and the Residential Life Program. Registered students may use the free services of an attorney (see Legal Services, above). SAS is located in 102 Sproul Hall (642-5171).

SAS assists in registering student groups, reserving facilities, disseminating information regarding campus rules and regulations, and administering funding for student activities and programs such as Cal Corps (volunteer programs) and Committee on Student Publications. Sponsored groups include fraternities and sororities, Model United Nations, Forensics (the debate team), Cal in the Capital/Sacramento, service organizations, and honor societies.

Two off-site SAS programs are Cal Corps (see Community Service Programs, above) and New Student Programs (see Orientations for New Students, above).

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**Student Life**
You'll get tired of blue and gold. Trust me.
—Jenne Mowry, Student Activities and Services

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**Student Learning Center**
The Student Learning Center is an academic support service that offers tutoring and learning skills assistance to University students. Learning skills assistants 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 Student Learning Center is located in 198 Golden Bear Center, 642-7332.

**Student Life Advising Services**
Student Life Advising Services (SLAS), formerly EOP/AA Counseling, is a student services unit under the dean of student life. The purpose of SLAS is to enhance students' adjustment to and success at Berkeley. The unit provides students with alternatives when they are confronted with decisions, concerns, or problems that may affect their progress toward graduation. Particular emphasis is placed on helping students to develop problem-solving and self-management skills. Among the services offered are individual and group counseling, advising, peer advising, and financial aid. Other services include the Achievement Award Program, Orientation Program, Peer Advising Program, and Housing Placement Program. Priority services are extended to low-income first-generation college students and to underrepresented groups (African American, Chicano, Latino, Filipino, and Native American). Counselors and peer advisers are available on a drop-in or appointment basis. Student Life Advising Services is located in 140 Golden Bear Center, 642-7224.

**Women's Resource Center**
The Women's Resource Center sponsors programs, workshops, groups, internships, and publications that promote understanding of the changing roles of women and raise campus awareness of the issues affecting women's experiences and opportunities as students. If you would like to make new friends, find support in coping with a crisis, build leadership skills, participate in dialogues on current issues, 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.
While long renowned as a research institution, the University has from its beginning served a predominantly undergraduate student body. In 1900, only Harvard among all the nation's universities had more undergraduates. Breadth, not just size, has always characterized the UC student body. Men and women from many backgrounds have studied here, and the present student body at Berkeley is the most diverse, and able, group in history.

Students in a class in entomology, with their professor in the background, pose for the camera in 1900.
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

How to Apply

If you are interested in applying to Berkeley, you can obtain an undergraduate application packet from your high school or community 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 a filing period ends.

Certain schools and colleges do not accept applications for admission to the spring term. Check with the campus Office of Undergraduate Admission and Relations with Schools at 642-3175 to find out if the college you want to apply to has any filing period restrictions.

Priority Filing Periods


Fall semester 1994: File November 1-30, 1993

Note: For information about application fees and fee waivers, see 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.

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

Berkeley makes an effort to provide a place for applicants who meet the minimum admissions requirements and who file an application during the appropriate filing period. When the number of applicants exceeds the spaces available for a particular college or major, the campus uses additional criteria to select students. Meeting the minimum requirements, therefore, is not enough to gain admission to most programs at Berkeley. See the Appendix for more information on selection criteria.
Admission as a Freshman

Berkeley considers you a freshman applicant if you have graduated from high school and have not enrolled in a regular session at any college or university. If you attend a summer session immediately after graduating from high school, you are still a freshman applicant.

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" requirement. You must take 15 units of high school courses to fulfill the subject requirement, and at least 7 of the 15 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 acceptable to Berkeley, the courses must appear on a list certified by your high school principal as meeting Berkeley’s admissions requirements. Your counselor or principal will have a copy of this list.

a. U.S. History—One year required. One year of United States history or one-half year of United States history and one-half year of civics or American government.

b. English—Four years required. Four years of college preparatory English that include frequent and regular writing, and reading of classic and modern literature, poetry, and drama. 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 algebra, geometry, and second-year (advanced) algebra. Math courses 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.

d. Laboratory Science—One year required, three recommended. One year of a laboratory science, such as biology, chemistry, or physics, taken in the 10th grade or later.

e. Foreign Language—Two years required, three recommended. Two years of the same foreign lan-

*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.

Scholarship Requirement

The scholarship requirement defines the grade-point average (GPA) you must attain in the “a-f” subjects to be eligible for admission to Berkeley. 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 this page.

Berkeley calculates your GPA in the “a-f” subjects by assigning points 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 language. Courses should emphasize speaking and understanding and include instruction in grammar, vocabulary, reading, and composition.

f. College Preparatory Electives—Four years required. Four units (eight semesters) in addition to those required in “a-e” above, chosen from at least two of the following areas: history, English, advanced mathematics, laboratory science, foreign language (a third year in the foreign language used for the “e” requirement above, or two years of another foreign language), social science, and visual and performing arts. A 9th-grade science course is an acceptable elective.

ACT is scored in intervals of 1 point, from a minimum of 1 to a maximum of 36. SAT is scored in intervals of 10 points, from 400 to 1600.

Myth: Liberal arts majors are not employable.

Fact: Liberal arts majors develop skills that are highly valued by employers and that are applicable to a wide variety of professional jobs. If these graduates sometimes take longer to find a niche in the working world, it is because they have not defined their goals or are unaware of their options.

Myth: You must pursue certain specific undergraduate majors to gain admission to postgraduate professional schools in fields such as business, law, or medicine.

Fact: While some postgraduate professional schools require or recommend certain academic prerequisites, in most cases they do not require a specific major. In other instances they may be looking for the development of certain broad skills, such as the ability to read and write critically. In short, you may major in a wide variety of academic fields; there is no "pre-med," "pre-law," or "pre-business" major that will help you get into graduate school.

(continued on next page)
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.

Honors courses: Berkeley 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. 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 an advanced placement examination of the College Board and college courses that are transferable to Berkeley are acceptable honors-level courses.

Three College Board Achievement Tests (ACH), including English Composition, Mathematics Level 1 or 2, 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 address below. Berkeley strongly advises you to take these tests by December of your senior year.

For the SAT and ACH: College Board ATP, P.O. Box 6200, Princeton, NJ 08541-6200.

For the ACT: American College Testing Program, Registration Unit, P.O. Box 168, Iowa City, IA 52240.

Admission by Examination Alone
If you do not meet the subject and scholarship requirements, you may be able to qualify for admission to Berkeley by examination. To qualify for admission by examination alone, you must achieve a total score of 1300 or higher on the SAT or a composite score of 31 or higher on the ACT. In addition, you must earn a total score of 1650 or higher on the three College Board Achievement Tests, with a minimum score of 500 on each test. 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 College Board Achievement Tests.
High School Proficiency Examination
Berkeley accepts the Certificate of Proficiency awarded by the State Board of Education for completion of the California High School Proficiency Examination in lieu of a regular high school diploma. Berkeley also accepts the General Education Development (GED) certificate and certificates of proficiency awarded by other states. You must satisfy all other admission requirements if you apply with a certificate of proficiency.

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 1300 on the SAT or 31 on the ACT. Your total score on the three College Board achievement tests must be at least 1730, with a minimum score of 500 on any single test.

Admission as a Transfer Student
Berkeley considers you a transfer applicant if you graduated from high school and enrolled in a regular session at another college or university. You cannot disregard your college record and apply as a freshman. If you plan to attend a California community college before applying to Berkeley, you should take courses that are transferable, that satisfy University and college requirements, and that fulfill prerequisites in your intended major. Advisers in the Office of Undergraduate Admission and Relations with Schools and community college counselors can help you with your planning.
The University publishes a booklet especially for transfer applicants called Answers for Transfers. It is available from your community college counselor or the Office of Undergraduate Admission and Relations with Schools; call 642-5135.

California Residents*
There are three ways in which you can meet the University’s minimum admission requirements for transfer students. These requirements are described below. In all cases, you must have at least a C (2.0) average in all transferable course work.

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.

Minimum Eligibility Requirements
Requirements for Residents
1. If you were eligible for admission to Berkeley 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 college courses in the subjects you are missing to be eligible to transfer. You will need to earn a grade of C or better in each of these required courses and an overall C (2.0) average in all transferable college course work. If you completed less than 12 quarter or semester units of transferable college course work, you must also satisfy the examination requirement.
3. If you were not eligible for admission to Berkeley when you graduated from high school because you did not meet the scholarship requirement, or you did not meet the scholarship requirement and did not complete all the required “a-f” subjects, you must (a) complete 84 quarter units or 56 semester units of transferable college credit with a grade-point average of at least 2.4 and satisfy either (b) or (c) as follows: (b) take college courses in the subjects you are lacking and earn a grade of C or better in each one (Berkeley will waive up to 2 units of the required high school course work except in

*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.

An old tutor of a college said to one of his pupils: Read over your compositions, and wherever you meet with a passage which you think is particularly fine, strike it out.
—Samuel Johnson
Undergraduate Education

Your education at Cal is much more than preparation for a job. In making academic and career decisions, don’t be overly influenced by supply and demand in the job market. Follow your interests, be true to your values, and develop the areas of knowledge and skill which you most enjoy.

—Priscilla Scotlan, Career Planning and Placement Center

mathematics and English); (c) complete one college course in mathematics, one in English, and one selected from either U.S. history, laboratory science, or foreign language. You must earn a grade of C or better in each course. All courses, with the exception of the required mathematics course, must be transferable. The course in mathematics must assume a proficiency level equivalent to three years of high school mathematics (i.e., elementary algebra, advanced algebra, and geometry). The course may be trigonometry or a more advanced course in mathematics or statistics for which advanced algebra is a prerequisite.

When the number of applicants exceeds the spaces available for a particular college, school, or major, the campus uses criteria that exceed the minimum requirements to select students. (See the discussion of selection criteria in the Appendix for more information.) Meeting the minimum requirements, therefore, is not enough to gain admission to most programs at Berkeley.

For additional requirements for admission in advanced standing, see the announcement of the individual college or school to which you seek admission.

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.

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, or call 642-3246. If you need to improve your English language skills, you should contact the English Language Program, University of California Extension, 2223 Fulton Street, Berkeley, CA 94720, 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, or call 642-0734.

Special Admission
Because all students have not had the same opportunities to prepare for higher education, Berkeley gives special consideration to a limited number of both freshman and transfer applicants who show potential to succeed at Berkeley although they do not meet the minimum admission requirements. If you think you qualify for special admission, contact the Office of Undergraduate Admission and Relations with Schools at 642-3175.

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.

If you are considering Berkeley and you qualify for these programs or want more information, contact the Office of Undergraduate Admission and Relations with Schools at 642-3175.
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.

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. 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. Because of enrollment pressures, the College of Letters and Science cannot currently accept applications for the second bachelor's program and will only consider applications to limited status. Detailed information about these programs is available in the Office of Undergraduate Admission and Relations with Schools, 110 Sproul Hall, 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.

**Registration and Enrollment in Classes**

**Tele-BEARS**

Tele-BEARS is an interactive computer system that allows you to enroll in classes by using a touchtone telephone. A recorded human voice 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 Access Code (PAC) which must be entered after your Student ID number in order to use Tele-BEARS. A new PAC will be assigned to you each semester.

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

**Receive Your Registration Form**

A Tele-BEARS registration form indicating your appointment times will be mailed to you by the Office of the Registrar.* If you do not require academic advising before using Tele-BEARS, the PAC will be printed on

*A registration form 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.

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**Tips for Tele-BEARS**

- Keep paper and pencil handy for writing information that Tele-BEARS gives you. Be sure to have a list of alternative courses to request if one you want is filled.
- Add the most impacted courses to your schedule first, during Phase I; then add less impacted courses during Phase II. (A list of impacted courses is on page 39.)
- Pay attention to your appointment period. Call early in your time slot.
- Don't be discouraged if a course you want is full. Get on the waiting list right away!
- Don't call Tele-BEARS to check your status on an automatic waiting list until after the run dates indicated in the Schedule of Classes. Nothing will happen to your status on the waiting list until after the automatic waiting lists have been run.
- Attend the first class meeting, even if you are just on a waiting list; you'll get a better idea of your chances for enrollment. And be sure to attend the first meeting of classes you are already enrolled in, because you may be dropped if you don't show up.
• Try to declare your major as soon as possible. Many upper division classes are restricted to majors, and you won’t get in if you haven’t declared.
• Don’t worry about getting all your classes before classes start. You’ll still get your photo ID validation sticker even if you’re enrolled in just one class. You have until the end of the Adjustment Period to enroll in your college or school minimum units.
• Don’t hog classes! Drop unwanted classes right away. That will free up space for other students who want to add them.

your registration form. If you do require academic advising, you must obtain your PAC from your major adviser or college/school Dean’s Office. 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 help you choose classes and formulate a schedule tailored to your particular academic interests. Contact the CalSO office, 642-4970, for information. If you are unable to attend a CalSO session, you should contact your college or school Dean’s Office for information on choosing classes. Once you have selected your classes, you are ready to call 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 three installments on the Deferred Payment Plan. Your registration fees must be paid (either in full or at least the first installment) by the fee payment deadline in order to be enrolled in classes; if your registration fees are not paid by the deadline, your classes will be cancelled.

The Deferred Payment Plan
You may pay your registration fees in three installments if you wish. A $20 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.

Receive Your Confirmed Class Schedule and Validation Sticker
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. A validation sticker for your Cal Photo ID card will be enclosed with your schedule, provided you have met the criteria to be an officially registered student (enrollment in at least one course, registration fees paid, and no blocks against your registration).

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 take by declaring a group major 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 preparing for acceptance to 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. 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, A.B.
American Studies, A.B.
Ancient Near Eastern Archaeology and Art History, A.B.
Anthropology, A.B.
Astrophysics, A.B.
Architecture, A.B.
Art (History of), A.B.
Art (Practice of), A.B.
Asian American Studies, A.B.
Asian Studies, A.B.
Art (History of), A.B.
Chemical Engineering, B.S.
Chemistry, A.B. or B.S.
Chicano Studies, A.B.
Civil Engineering, B.S.
Classical Languages, A.B.
Classical Civilization, A.B.
Computer Science, A.B. or B.S.
Comparative Literature, A.B.
Cognitive Science, A.B.
Conservation and Resource Studies, B.S.
Cultural Studies, A.B.
Dramatic Art, A.B.
Dramatic Art—Dance, A.B.
Dutch Studies, A.B.
Economics, A.B.
Dramatic Art, A.B.
Engineering Geoscience, B.S.
Engineering Physics, B.S.
English, A.B.
Entomology, B.S.
Ethnic Studies, A.B.
Environmental Science, A.B.
East Asian Languages, A.B.
East Asian Languages, A.B.
Earth Science, A.B.
East Asian Languages, A.B.
East Asian Languages, A.B.
Economics, A.B.
Electrical Engineering and Computer Sciences, B.S.
Engineering, Seven Double Major Programs, B.S.
Engineering Geoscience, B.S.
Engineering Geoscience, B.S.
Engineering Mathematics and Statistics, B.S.
Economics, A.B.
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You will note in the selection of sample programs to the right that there are several ways to fulfill college requirements such as the reading and composition requirement.

As you look through the courses in this catalog, you will learn that some courses must be taken in a specific sequence, while many others may be taken in random order. The courses taken in your first year should be selected for a variety of reasons, including the following:

1. Prerequisite (or lower division) requirements for the majors you wish to consider. Most departments will not accept you into the major until the lower division requirements for that major are completed. These prerequisites are listed in the "Courses and Curricula" section of this catalog for all majors in the College of Letters and Science.

2. Fulfillment of breadth requirements.

3. General interest.

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### Sample Programs for First-Year Students

#### Majors in Social Science

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td>Statistics 2</td>
<td>4</td>
<td>Satisfies quantitative reasoning requirement</td>
</tr>
<tr>
<td></td>
<td>Chicano Studies 1A</td>
<td>4</td>
<td>Reading and composition course</td>
</tr>
<tr>
<td></td>
<td>Political Science 2</td>
<td>4</td>
<td>Prerequisite to political science and PEIS majors</td>
</tr>
<tr>
<td></td>
<td>Integrative Biology 30</td>
<td>3</td>
<td>Core natural science breadth course</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td>Philosophy 3</td>
<td>4</td>
<td>Core humanities breadth course</td>
</tr>
<tr>
<td></td>
<td>Anthropology 3</td>
<td>4</td>
<td>Prerequisite to anthropology and psychology majors</td>
</tr>
<tr>
<td></td>
<td>French 39</td>
<td>3</td>
<td>Freshman/sophomore seminar/core humanities breadth course</td>
</tr>
<tr>
<td></td>
<td>Sociology 3</td>
<td>4</td>
<td>Prerequisite to sociology and psychology majors</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</tbody>
</table>

#### Majors in Biological Science

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Units</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td>Chemistry 1A</td>
<td>4</td>
<td>Prerequisite to biology and chemistry majors</td>
</tr>
<tr>
<td></td>
<td>Math 1A/16A</td>
<td>4/3</td>
<td>Prerequisite to biology and chemistry majors</td>
</tr>
<tr>
<td></td>
<td>English 1A</td>
<td>4</td>
<td>Reading and composition course</td>
</tr>
<tr>
<td></td>
<td>Economics 90</td>
<td>3</td>
<td>Freshman/sophomore seminar/social science breadth course</td>
</tr>
<tr>
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<td><strong>Total</strong></td>
<td><strong>14/15</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td>Chemistry 3A</td>
<td>5</td>
<td>Prerequisite to biology and chemistry majors</td>
</tr>
<tr>
<td></td>
<td>Math 1B/16B</td>
<td>4/3</td>
<td>Prerequisite to biology and chemistry majors</td>
</tr>
<tr>
<td></td>
<td>Geography 4</td>
<td>4</td>
<td>Social science breadth course</td>
</tr>
<tr>
<td></td>
<td>Music 26</td>
<td>4</td>
<td>Core humanities breadth course/American cultures course</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>16/17</strong></td>
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</tbody>
</table>

#### Majors in Humanities

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td>French 2</td>
<td>5</td>
<td>Satisfies foreign language requirement</td>
</tr>
<tr>
<td></td>
<td>College Writing 1A</td>
<td>6</td>
<td>Satisfies Subject A and a reading and composition course</td>
</tr>
<tr>
<td></td>
<td>Statistics 2</td>
<td>4</td>
<td>Satisfies quantitative reasoning requirement</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td>French 3</td>
<td>5</td>
<td>Prerequisite to French major</td>
</tr>
<tr>
<td></td>
<td>Art History 10A</td>
<td>4</td>
<td>Prerequisite to art history and practice of art majors</td>
</tr>
<tr>
<td></td>
<td>Anthropology 10A</td>
<td>4</td>
<td>Social science breadth course/American cultures course</td>
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<td><strong>Total</strong></td>
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#### Majors in Physical Science

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<thead>
<tr>
<th>Semester</th>
<th>Course</th>
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<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td>Math 1A</td>
<td>4</td>
<td>Prerequisite to most physical science majors</td>
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<tr>
<td></td>
<td>German 1</td>
<td>5</td>
<td></td>
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<tr>
<td></td>
<td>African American Studies 1A</td>
<td>4</td>
<td>Reading and composition course</td>
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<td><strong>Total</strong></td>
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</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td>Math 1B</td>
<td>4</td>
<td>Prerequisite to most physical science majors</td>
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<tr>
<td></td>
<td>Physics 7A</td>
<td>4</td>
<td>Prerequisite to physics, chemistry, and astronomy majors</td>
</tr>
<tr>
<td></td>
<td>German 2</td>
<td>5</td>
<td>Satisfies foreign language requirement</td>
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<td><strong>Total</strong></td>
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Minors

Minors are offered at Berkeley in many departments and groups in the College of Letters and Science (African American Studies, Art, Asian Studies, Celtic Studies, Classics, Demography, English, Ethnic Studies, Geography, Music, Near Eastern Studies, Philosophy, Physics, Religious Studies, Rhetoric, Slavic Languages and Literatures, South and Southeast Asian Studies, Women's Studies, and many foreign language departments), 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 and Schools," 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, 128 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 score of 600 or above on either form of the College Board Achievement Test in English Composition.

Cal Sports

1892: The first "Big Game" between Cal and Stanford.
1895: Following a spectacularly successful tour through the East by the UC track team, California teams become known as the "Golden Bears."
1914: At the Big Game, Cal students in the football stands use cards of varying colors to form patterns, the first recorded use of card stunts at a college football game.
1921: The 1920 California football team, considered one of the greatest college teams of all time, culminates its undefeated season with a 28-0 victory over Ohio State in the Rose Bowl. During the season, the Golden Bears scored 510 points to their opponents' 14.
1924: Helen Wills, a freshman, wins national and international singles titles in tennis and teams with alumna Hazel Hotchkiss to win the same crowns in doubles.


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.

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.

- A score of 3, 4, or 5 on the Advanced Placement Test in English Composition and Literature or in English Language and Composition.
- A score of 5 or higher 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.
- A grade of C or higher in an approved transfer-level English composition course taken at another institution.

**American History and Institutions Requirements**

The American History and Institutions requirements are based on the principle that a U.S. resident enrolled at 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 "a" subject requirement for admission (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, 120 Sproul Hall.
- By passing the high school Advanced Placement American History exam with a score of 3 or better or the College Board Achievement Test in U.S. history with a score of 500 or better.
- 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.

- By mixing these three alternatives (for example, an exam for one requirement and a course for the other).

**Freshmen:** Your first opportunity to see the status of your AH&I requirements will be on your first Berkeley transcript.

II. Students Who Entered Berkeley Between Fall 1981 and Spring 1983 may use any of the options listed under Section I above with the following exceptions:

- The American History and Institutions requirements are not linked to the "a" subject requirement for admission. The AH&I requirements may be met in high school by 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.

- One course taken at another collegiate institution before you enter Berkeley will not fulfill both AH&I requirements. A separate course must be taken for each.

III. Students Who Entered Berkeley Before Fall 1981 may use any of the options listed under Section I above, with the following exceptions:

- High school courses will not satisfy either the History or the Institutions requirement.
- The College Board Achievement Test will not satisfy the American History requirement.

One course taken at another collegiate institution before you enter Berkeley will not fulfill both AH&I requirements. A separate course must be taken for each.

IV. International Students:

The AH&I requirements will be waived if you have at least 90 1/2 semester units (senior status), hold a current, non-immigrant visa.
(F is the most common), and an I-94 departure record. You should present your visa and I-94 record to the Office of the Registrar, 128 Sproul Hall, before the semester in which you will graduate. International students intending to remain in the U.S. must fulfill the AH&I requirements.

V. AH&I Office: The office that administers these requirements is located in 29 Dwinelle Hall, 642-5006.

Berkeley Campus American Cultures Breadth Requirement

Students who entered Berkeley in fall 1991 or thereafter in lower division standing (with 0-55 semester units) or who enter in fall 1993 or thereafter in upper division standing (with 56 or more semester units) 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.

Faculty from many departments teach American cultures courses, but all courses have a common framework. The courses focus on themes or issues relevant to understanding race, culture, and ethnicity in our society; take substance account of groups drawn from at least three of the following: African Americans, American Indians, Asian Americans, Chicano/Latino Americans, and European Americans; and are integrative and comparative in that individual groups are studied in the larger context of American society, history, or culture.

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

Every college and school has established a program of requirements for the degree, which may be in addition to those of a field of concentration. These requirements may include (1) preparatory subject requirements for admission; (2) preparatory college-level courses for your particular field of study—to be completed, if possible, during your early period of residency in the college or school, or in some cases before entrance; (3) breadth requirements, courses outside the field of study, considered essential to a well-rounded curriculum; (4) the credit requirement, which is 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 Universitywide 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, Asian American Studies, Chicano Studies, College Writing Programs, Comparative Literature, Dramatic Art, English, Native American Studies, Rhetoric, South and Southeast Asian Studies, Undergraduate and Interdisciplinary Studies, and 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). Since 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
At Berkeley, it is not unusual to be enrolled in a class with a few hundred students. Due to this large number, it is sometimes very difficult to get a lot of help from the instructor. My suggestion is to get together with a few fellow students in the class and form a study group. You can meet together regularly, especially when assignments are due or when exams are coming up, in order to help each other review the course material.

—John Lam, EOP/AA
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 15-unit study list is considered a normal course load; a study list of fewer than 13 units must be authorized 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 Program with Other Schools
Berkeley has a cross-registration program with California State University, Hayward; Mills College, Oakland; San Francisco State University; Sonoma State University; College of Holy Names; JF 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. For more information, go to the Office of the Registrar, 123 Sproul Hall, or call Special Registration at 642-1988.

Studying Abroad

Education Abroad Programs
While progressing toward your bachelor’s degree, you have a number of opportunities to earn University of California credit while studying abroad. Requirements for participation are a grade-point average of 3.0, upper division standing, and sufficient language preparation. University scholarships, loans, and grants may be used to finance the year abroad.
Berkeley also participates in several intercollegiate consortia for advanced language studies: Rome Classics Program (requiring Latin fluency), Japanese language study in Tokyo, Mandarin Chinese study in Taipei, and Arabic study in Cairo.
If you are interested, consult your academic advisers and the Education Abroad adviser in the Berkeley Programs for Study Abroad office, 160 Stephens Hall, 642-1356.
The Universitywide Education Abroad Program has study centers at the following universities:

Africa
University of Ghana, Accra
University of Benin, Lome, Togo (summer program)

Asia
Beijing Science and Technology University
Chiang Mai University, Chiang Mai, Thailand
Chinese University of Hong Kong
Chulalongkorn University, Bangkok, Thailand
Doshisha University, Kyoto, Japan

Remember, you are not alone; if you were, there would be no line.
—Robert Holtermann, College of Letters and Science adviser
I've known you for four years and you're still trying to tell me that you're going to study on a Friday night?
—Anon

Gadjah Mada University, Yogyakarta, Indonesia
Indonesia Dance Institutes of Bandung (ASTI), Indonesia
Indonesian Arts Institute (ISI), Yogyakarta, Indonesia
International Christian University and Sophia University, Tokyo, Japan
Kyushu Institute of Technology, Kitakyushu, Japan
Kyushu University, Fukuoka, Japan
Meiji Gakuin University, Yokohama, Japan
Nagoya University, Japan
Nankai University, Tianjin, People's Republic of China
National Taiwan University, Taipei
Osaka University, Japan
Padjadjaran University, Bandung, Indonesia
Peking University, Beijing, People's Republic of China
Tohoku University, Sendai, Japan
Tokyo Institute of Technology, Japan
University of Delhi, India
University of Tokyo, Japan
Yonsei University, Seoul, Korea

Australia and New Zealand
Australian National University, Canberra
Flinders University, Bedford Park
La Trobe University, Melbourne
Lincoln University, Christchurch, New Zealand
Massey University, Palmerston North, New Zealand
Monash University, Melbourne
University of Melbourne
University of Auckland, New Zealand
University of Melbourne
University of New England, Armidale, Australia
University of New South Wales, Kensington
University of Otago, Dunedin, New Zealand
University of Queensland, Brisbane, Australia
University of Sydney
Victoria University, Wellington, New Zealand
Waikato University, New Zealand
Woolongong University, Australia

Central America
National Autonomous University of Mexico, Mexico City
Summer Intensive Language, Morelia, Mexico
Tropical Biology Program, Monte Verde, Costa Rica
University of Costa Rica, San Jose

Europe
University of Vienna, Austria
University of Copenhagen, Denmark
Universities in France: Bordeaux, Ecole Normale Supérieure, Ecole Polytechnique, Grenoble, Lyon, Paris (Film, Literature), Pau, Poitiers, Toulouse
Georg-August University, Goettingen, Germany
Eötvös Loránd University, Budapest, Hungary
Universities in Ireland: University College, Cork; University College, Galway

Universities in Italy: Padua; Academy of Fine Arts, Venice; Bocconi University, Milan; G.B. Martini Music Conservatory, Bologna; University of Bologna; Il Bisonte International School of Graphic Arts, Florence; University of Venice
University of Bergen, Norway
Universities in Spain: Barcelona; Granada; Madrid; University of Alcalá de Henares
University of Lund, Sweden
Universities in Russia: Herzen Russian State Pedagogical University, St. Petersburg

Middle East
Hebrew University, Jerusalem, Israel
American University of Cairo, Egypt

North America
University of British Columbia, Vancouver, Canada

South America
Catholic University, Rio de Janeiro, Brazil
University of Chile, Santiago, Chile

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.

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
The fundamental purpose of universities is to hasten the coming of the day when all men and all women shall have a much larger knowledge and comprehension of the truth, so that they may live their lives more richly and more usefully in this exceedingly interesting world; in order, as the Master said, that the truth shall make them free.

—William Wallace Campbell, 10th president of the University of California, from inaugural address, March 1924
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. Beginning June 1994, a new summer co-op program will be offered, enabling students to gain practical experience over two consecutive summers. Eligibility requirements for participation in this summer program are the same as those pertaining to the six-month co-op program. For general requirements, contact the Engineering Co-op Office, 209 McLaughlin Hall, 642-6385.

Honors Courses
Berkeley offers some honors courses for highly qualified students, usually in their senior year. A very small number of these courses is 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 seminars 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 new 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 Tele-BEARS registration. For more information regarding the new Freshman Seminar Program, please contact the Office of Undergraduate Programs, 221 California Hall, 642-8378.

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. Priority is given to Affirmative Action and Educational Opportunity Program students, but everyone is welcome.

Cal Songs
Hail to California
Hail to California, Alma Mater dear,
Sing the joyful chorus,
Sound it far and near
Rallying 'round her banner,
We will never fail
California Alma Mater,
Hail! Hail! Hail!

All hail! Blue and Gold,
Thy colors unfold,
O'er loyal Californians,
Whose hearts are strong and bold.
All hail! Blue and Gold,
Thy strength ne'er shall fail;
For thee we'll die!
All hail! All hail!

Academic Excellence
Semester Honors
To be eligible for semester honors, you must have completed a minimum of 12 units undertaken for letter grades at Berkeley and must have achieved the minimum grade-point average required by your school or college. Schools and colleges may establish additional criteria that you must also meet.

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 letter grades 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 Pyranean Society, founded in 1900 to honor upper division and graduate women for academic accomplishment in professional fields 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.
The University intended from its beginning not only to transmit knowledge, but to advance it. Early emphasis was on science and agriculture, but a passion for excellence marked all fields of study. Soon after its 50th anniversary, UC was not only the nation’s largest university, it was recognized as among the very best. The middle third of this century saw particularly significant scientific discoveries from Berkeley—the beginning of a Nobel tradition that has fostered 15 faculty laureates.

Students in the College of Mining, one of the forerunners of the College of Engineering, demonstrate mining techniques, 1894.
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 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 will also have an individual or major adviser, usually assigned after you are advanced to candidacy for the doctorate, but frequently appointed in the earlier
stages of your training. The individual or major advisers 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 have earlier final application dates than the Graduate Division, both for admission and financial assistance, and many departments also admit students only for the fall semester. Information on special departmental deadlines and requirements is contained in the application packet.

You must meet departmental deadlines. The final dates of the Graduate Division for acceptance of applications for admission for the academic year are: fall semester, February 10; and spring semester, September 1. 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.
Teaching Credential applicants (Multiple and Single Subject only) are not required to take the GRE. However, applicants for the M.A.T. degree must fulfill the GRE requirement.

You should make arrangements directly with Educational Testing Service to take the GRE at least three weeks before the desired test date (six weeks, if registering to take the examination outside the United States).

You may obtain applications for the GRE and GMAT from the Educational Testing Service, Box 6000, Princeton, NJ 08541-6000, or from its western office at P.O. Box 23470, Oakland, CA 94623-0470.

If you are a domestic candidate from a family with an extremely low income, you may qualify for a waiver of GRE test fees. Consult your undergraduate financial aid office to determine whether your institution participates in the GRE Fee Waiver Program and whether you qualify. Fee waivers are not available directly from the Educational Testing Service.

**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 home country or TOEFL, CN 6154, Princeton, NJ 08541-6154.

Applicants who register to take the TOEFL in May or later cannot be considered for admission to the fall semester. The results of institutional administrations of the TOEFL are not acceptable in lieu of the international or special center administrations. If you took the test more than two years ago, you must take it again.

If you are from a country in which English is not the official language and you expect to be a graduate student instructor, you should take the Test of Spoken English (TSE) in your country. For information on registering to take the TSE, contact the TOEFL agent in your country or at the address given above. The TSE is not a requirement for admission.

**Special Circumstances**

**Readmission**

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

**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 applications. 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.

Registration and Enrollment in Classes

Tele-BEARS

Tele-BEARS is an interactive computer system that allows you to enroll in classes by using a touchtone telephone. A recorded human voice 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 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 Access Code (PAC) which must be entered after your Student ID number in order to use Tele-BEARS. A new PAC will be assigned to you each semester.

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

Receive Your Registration Form

A Tele-BEARS registration form indicating your appointment times will be mailed to you by the Office of the Registrar.* If you do not require academic advising before using Tele-BEARS, the PAC will be printed on your registration form. If you do require academic advising, you must obtain your PAC from your graduate adviser. 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 courses and have obtained the approval of your major adviser (if required), you can call 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 three installments on the Deferred Payment Plan. Your registration fees must be paid (either in full or at least the first installment) by the fee payment deadline in order to be enrolled in classes; if your registration fees are not paid by the deadline, your classes will be cancelled.

The Deferred Payment Plan

You may pay your registration fees in three installments if you wish. A $20 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 on 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 distributed to departments in early August for the fall semester and early January for the spring semester. (See "Special Information for New Graduate Students" on page 54.)
as he had entered
enthusiasm."

he was leaving UC
Speech Movement,
after the Free
California governor
Ronald Reagan
Dismissed by
Student Adviser for further information.
In summary, you must register in any semester in
which you are enrolled in formal courses of instruction
unless you have special permission from the Immigration
Service to do otherwise. Consult the International
Student Adviser for further information.

Statement of Intent to Register
The admission notice to new (including reactivating)
graduate students contains a Statement of Intent 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
intent to register will reserve the registration slot
allocated to you. If you want to retain a record of the
return of your Statement of Intent to Register, you
should send it by certified or registered mail. If you do
not want to accept the offer of admission, you should
complete and return the Declination of Admission
section so that your place can be allocated to another
applicant.

Failure to Register
If you do not return the Statement of Intent to Register
or return it but do not register for the semester in which
you were admitted, you must request reactivation of
your application if you want to attend any subsequent
semester. You have no priority over other applicants
for any subsequent semester by virtue of your previous
admission.

Registration
To maintain good standing as a graduate student, you
must register with the Office of the Registrar each se-
mester 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, includ-
ing access to the faculty, except for uses accorded the
general public.

If your studies or research requires absence from Cal-
ifornia 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 depart-
ment and meet with your graduate adviser to approve
your class schedule and obtain your Personal Access
Code. You will be mailed a billing statement for infor-
mational purposes before the registration fee payment
deadline; however, it will not be necessary to pay your
registration fees until the Wednesday before instruction
begins.

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 sec-

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
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 re-
searchers must normally carry a minimum of 6 units in
the 100 or 200 series. However, in spring 1990 the
Graduate Council approved the substitution of lower
division units (taken to prepare for departmental re-
quirements in languages, mathematics, or statistics) for
upper division units.

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
Recent Ratings of Graduate and Professional Schools at U.S. Universities

In March 1992, US News & World Report published results of a study ranking graduate liberal arts and professional programs at U.S. universities. Below are rankings of the schools and programs that Berkeley offers.

Graduate Liberal Arts Programs

The survey of liberal arts programs asked department heads and directors of graduate studies to rate a school's reputation for academic quality on a 5-point scale.

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<tr>
<th>Discipline</th>
<th>Rank</th>
<th>Institutions</th>
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<tbody>
<tr>
<td>Economics</td>
<td>1.</td>
<td>Chicago, MIT, Stanford</td>
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<td>2.</td>
<td>Harvard</td>
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<td>3.</td>
<td>Berkeley, Princeton, Yale</td>
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<td>English</td>
<td>1.</td>
<td>Berkeley, Yale</td>
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<td></td>
<td>2.</td>
<td>Cornell, Harvard, Johns Hopkins, Stanford</td>
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<td>3.</td>
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<tr>
<td>History</td>
<td>1.</td>
<td>Berkeley, Princeton, Stanford, Yale</td>
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<td>5.</td>
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</tr>
<tr>
<td>Political Science</td>
<td>1.</td>
<td>Berkeley, Harvard, Michigan</td>
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<tr>
<td></td>
<td>2.</td>
<td>Stanford</td>
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<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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<tr>
<td>Psychology</td>
<td>1.</td>
<td>Stanford</td>
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<tr>
<td></td>
<td>2.</td>
<td>Berkeley, Illinois, Michigan</td>
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<td>3.</td>
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<tr>
<td>Sociology</td>
<td>1.</td>
<td>Wisconsin</td>
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<td></td>
<td>2.</td>
<td>Chicago</td>
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<td>3.</td>
<td>Berkeley, Michigan</td>
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<td></td>
<td>4.</td>
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<td></td>
<td>5.</td>
<td>North Carolina</td>
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Overall

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Mean Score</th>
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<tbody>
<tr>
<td>Berkeley</td>
<td>1.</td>
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</tr>
<tr>
<td>Stanford</td>
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</tr>
<tr>
<td>Harvard</td>
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</tr>
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<td>Michigan</td>
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<tr>
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<tr>
<td>Princeton</td>
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<tr>
<td>UCLA, Wisconsin</td>
<td>8.</td>
<td>4.30</td>
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<tr>
<td>Columbia</td>
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<td>4.07</td>
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Professional Schools

The professional programs were rated overall on reputation plus such factors as student selectivity and available resources. Specialty ratings were based on reputation.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Rank</th>
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<tbody>
<tr>
<td>Business</td>
<td>1. Harvard</td>
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<td>2. Penn (Wharton)</td>
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<td>3. MIT (Sloan)</td>
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<td>4. Northwestern (Kellogg)</td>
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<td>5. Chicago</td>
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<td>6. Michigan</td>
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<td>7. Columbia</td>
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<td>8. Duke (Fuqua)</td>
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<td>9. Dartmouth (Tuck)</td>
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<td>10. Virginia (Darden)</td>
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<td>11. Cornell (Johnson)</td>
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<tr>
<td>12. Berkeley (Haas)</td>
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<tr>
<td>13. UCLA (Anderson)</td>
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<table>
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<tr>
<th>Engineering</th>
<th>Rank</th>
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<tbody>
<tr>
<td>1. MIT</td>
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<td>2. Stanford</td>
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<tr>
<td>3. Illinois</td>
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<tr>
<td>4. Berkeley</td>
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<td>5. Purdue</td>
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<table>
<thead>
<tr>
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<th>Rank</th>
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<td>1. Yale</td>
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<td>2. Harvard</td>
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<td>3. Stanford</td>
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<td>4. Chicago</td>
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<td>5. Columbia</td>
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<td>6. Michigan</td>
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<td>7. NYU</td>
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<td>8. Virginia</td>
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<td>9. Dake</td>
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<tr>
<td>10. Penn</td>
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<td>11. Georgetown</td>
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<tr>
<td>12. Berkeley</td>
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<tr>
<td>13. Northwestern</td>
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<tr>
<td>14. Cornell</td>
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<tr>
<td>15. Texas</td>
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</tr>
</tbody>
</table>
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:

Agricultural and Environmental Chemistry, M.S., Ph.D.
Agricultural and Resource Economics, M.S.,* Ph.D.
Ancient History and Archaeology, M.A., Ph.D.
Anthropology, M.A.,* Ph.D.
Applied Mathematics, Ph.D.
Applied Science and Technology, M.S., Ph.D.
Architecture, M.Arch., Ph.D.
Art, M.F.A.
Asian Studies, M.A., Ph.D. MA. 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, M.A., Ph.D.
Economics, M.A.,* Ph.D.
Education, M.A., M.A.T., Ph.D., Ed.D.
Endocrinology, M.A., Ph.D.†
Energy and Resources, M.A., M.S., Ph.D.†
Engineering Science, M.S., Ph.D.
English, M.A., Ph.D.
Entomology, M.S., Ph.D.
Environmental Health Sciences, M.S., Ph.D.†
Environmental Planning, Ph.D.
Epidemiology, M.S., Ph.D.†
Ethnic Studies, M.A.,* Ph.D.†
Folklore, M.A.†
Forestry, M.F.
French, M.A., Ph.D.
Geography, M.A.,* Ph.D.
Geology, M.A., 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.
Immunology (Public Health), M.A., Ph.D.†
Integrative Biology, M.A.,* Ph.D.
Italian, M.A., Ph.D.
Journalism, M.J.
Jurisprudence and Social Policy, M.A.,* Ph.D.
Landscape Architecture, M.L.A.
Latin, M.A.
Latin American Studies, M.A., Ph.D.†
Law, J.D., LL.M., J.S.D.
Library and Information Studies, M.L.I.S., Ph.D.
Linguistics, M.A., Ph.D.
Logic and the Methodology of Science, Ph.D.†
Mathematics, M.A., Ph.D.
Medical Anthropology, Ph.D. (Joint program with San Francisco campus)
Medical Physics, Ph.D.†
Microbiology (Public Health), M.A.,* Ph.D.†
Molecular and Cell Biology, M.A.,* Ph.D.
Music, M.A., Ph.D.
Near Eastern Religions, Ph.D. (Joint degree program with the Graduate Theological Union)
Near Eastern Studies, M.A., Ph.D.
Neurobiology, Ph.D.†
Nutrition, M.S., Ph.D.†
Parasitology, M.S., Ph.D.†
Philosophy, M.A.,* Ph.D.
Physical Education, M.A., Ph.D.
Physics, M.A., Ph.D.
Plant Biology, M.A.,* Ph.D.
Plant Pathology, M.S., Ph.D.
Political Science, M.A.,* Ph.D.
Psychology, M.A.,* Ph.D.
Public Health, M.P.H., Dr.P.H.
Public Policy, M.P.P., Ph.D.
Range Management, M.S.†
Rhetoric, M.A.,* Ph.D.
Romance Languages and Literatures, Ph.D. Emphases: French, Italian, Spanish†
Romance Philology, Ph.D.†
Scandinavian Languages and Literatures, M.A., Ph.D.
Science/Mathematics Education, Ph.D.†
Slavic Languages and Literatures, M.A., Ph.D.
Social Welfare, M.S.W., Ph.D.
Sociology, M.A.,* Ph.D.
Soil Science, M.S., Ph.D.
South and Southeast Asian Studies, M.A., Ph.D. M.A. program emphases: Hindi-Urdu, Malay-Indonesian, Sanskrit, Tamil, South Asian Archaeology, and South Asian Civilization; Ph.D. program emphases: Hindi-Urdu, Malay-Indonesian, Sanskrit, Tamil, and South Asian Archaeology
Special Education, Ed.D., Ph.D. (Joint degree program with San Francisco State University)
Statistics, M.A., Ph.D.
Vision Science, M.S., Ph.D.†
Wildland Resource Science, M.S., Ph.D.
Wood Science and Technology, M.S., Ph.D.†

Certificate in Russian and East European Studies

The Certificate in Russian and East European Studies has been developed to serve graduate students in the humanities and social sciences who wish to broaden their knowledge of the Russian and East European area. To be eligible you must be in good academic standing and currently enrolled in a graduate program at Berkeley in a field related to the Russian/East European area. The program is to include at least 18 semester units in three or more disciplines, not including that in which you have received or are planning to receive your master's or doctoral degree. Advanced language courses in grammar, composition, or conversation may not be used to fulfill this requirement. Of the 18 required units, at least 6 must be at the 200 level; the remaining units may be at the 100 or 200 level. Applications and further information about the certificate program are available at the Center for Slavic and East European Studies, 361 Stephens Hall.

Certificates of Completion of Graduate Curricula in Library and Information Studies

A certificate program has been established which is designed to meet the need for advanced studies beyond the first professional degree (M.L.I.S.) and short of the doctoral degree (Ph.D.). You should direct inquiries to the School of Library and Information Studies.

Certificate of Completion of Graduate Curriculunm in Optometry

In this program you will spend 9 to 18 months in graduate professional training and must have previously earned the Doctor of Optometry degree. For information contact the Director of Clinics, School of Optometry, 250 Minor Hall, 642-0945.

* 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.
Master of Arts in Teaching

The degree of Master of Arts in Teaching is offered by the School of Education jointly with the Department of English. If you are a candidate you must satisfy all requirements for certification to teach in California, in addition to completing academic training in one of the subject fields. You should direct inquiries to the appropriate academic department and to the School of Education.

Joint Doctoral Programs

There are two intercampus joint degree programs between Berkeley and the University of California, San Francisco: Bioengineering and Medical Anthropology. If interested, you should apply to the campus most appropriate to your research interests, but you will have access to facilities and faculty on both campuses through intercampus exchange registration. For information, write to the Department of Anthropology or the Group in Bioengineering.

Near Eastern Religions

A program leading to the Ph.D. degree is conducted jointly by the Berkeley campus and the Graduate Theological Union. For more information, see the discussion below under "Academic Opportunities."

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 at 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.—Structural Engineering, M.S. (Hastings)
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 Engineering, M.S.
City and Regional Planning, M.C.P.—Law, J.D. (Berkeley)

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

You should first request a transfer of units at the end of your first semester of attendance. Your graduate advisor should 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 least a 3.3) at both your original institution and at Berkeley. Final action will be taken when you have completed half the program and are
applying for advancement to candidacy. 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 may 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 third 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.

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 approval 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 together 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 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 coursework 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 $25 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 a 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 the cost of the educational fee.

The Normative Time program is obligatory for all doctoral students who first enrolled on the Berkeley campus in fall 1978 and afterward, regardless of their original degree goals. Students who entered earlier may elect to join the program. The conditions of the Normative Time program are as follows:

1. Upon entry to a Berkeley doctoral 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 equal in amount to 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 filling 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 before the first day of instruction in the semester for which the first grant is awarded.

The following normative times in semesters have been established:

- Agricultural and Environmental Chemistry (13)
- Agricultural and Resource Economics (12)
- Anatomy (10)
- Ancient History and Archaeology (14)
- Anthropology (12)
- Applied Mathematics (11)
- Applied Science and Technology (11)
- Architecture (12)
- Asian Studies (10)
- Astronomy (12)
- Biochemistry (11)
- Biomedical Engineering (10)
- Biophysics (10)
- Biostatistics (10)
- Botany (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)
- Developmental Biology (10)
- Dramatic Art (10)
- East Asian Languages: Chinese (12), Classical Chinese (10), Japanese (12)
- Economics (10)
- Education (12)
- Endocrinology (10)
- Energy and Resources (10)
- Engineering (10)
- Nuclear Engineering (12)
- English (12)
- Entomology (10)
- Environmental Health Sciences (10)
- Environmental Planning (10)
- Epidemiology (8)
- Ethnic Studies (12)
- French (12)
- Genetics (13)
- Geography (12)
- Geology (10)
- Geophysics (10)
- German (12)

(continued on next page)
Allen Broussard, '50, J.D.'53
Justice, California Supreme Court, 1981-91; 1992 alumnus of the year

Don Fischer, '51
Chair, "The Gap" clothing store chain

Norman Mineta, '53
Member, US House of Representatives

Joan Didion, '56
Author of *A Book of Common Prayer,* *Play It as It Lays,* and other books

Bill Bixby, '57
Actor, director; star of television's *My Favorite Martian* and *The Incredible Hulk*

Joe Kapp, '59
All-America football player; member, Cal and National Football League halls of fame; Cal football coach, 1982-86

William Randolph Hearst, Jr., '59
Editor-in-chief and vice president, Hearst Newspapers 1960-92

Maxine Hong Kingston, '62
Author, *The Woman Warrior* and other books; Chancellor's Distinguished Professor at Berkeley, 1990; tenured senior lecturer at Berkeley, 1991-

Richard Dumke, '60
Chair, Round Table Pizza

Edmund "Gerry" Brown, '61
Governor of California, 1975-82

Sara Davidson, '62
Author of *Loose Change* and other books

Ronald Dellums, M.S.W.'62
Member, US House of Representatives

Pete Wilson, J.D.'62
US Senator, 1983-90; Governor of California, 1991-

Health Services and Policy Analysis (12)
Hispanic Literatures (10)
History: Modern Western Languages (12), Non-Western Languages (or Non-Indo-European) (14)
History of Art (14)
Immunology (10)
Integrative Biology (10)
Italian (12)
Jurisprudence and Social Policy: Ph.D. (12), J.D./Ph.D. (14)
Latin American Studies (12)
Library and Information Studies (8)
Linguistics (10)
Logic and the Methodology of Science (11)
Mathematics (11)
Medical Anthropology (12)
Medical Physics (10)
Microbiology (10)
Molecular and Cell Biology (10)
Molecular Biology (10)
Music (12)
Ethnomusicology (14)
Near Eastern Religions (10)
Near Eastern Studies (14)
Neurobiology (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 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. Departments may use their own form or one developed by the Graduate Division for this purpose. A copy of the evaluation must be forwarded to the Graduate Division.

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.

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, the original 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

- Anatomy
- Buddhist Studies
- 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 Archaeology
- Anthropology
- Applied Mathematics
- Applied Science and Technology
- Architecture
- Asian Studies
- Astronomy
- Biochemistry
- Bioengineering
- Biophysics
- Biostatistics
- Botany
- Business Administration
- Chemical Engineering
- Chemistry
- City and Regional Planning
- Classical Archaeology
- Classics—Emphases: Greek, Latin
- Comparative Biochemistry
- Comparative Literature
- Computer Science
- Demography
- Developmental Biology
- Dramatic Art
- East Asian Languages
- Economics
- Education
- Endocrinology
- Energy and Resources
- Engineering
- Engineering Science
- English
- Entomology
- Environmental Health Sciences
- Epidemiology
- Ethnic Studies
- French
- Genetics
- Geography
- Geology
- Geophysics
- German
- Health Services and Policy Analysis
- Hispanic Languages and Literatures
- History
- History of Art
- Immunology
- Integrative Biology
- Italian
- Jurisprudence and Social Policy
- Latin American Studies
- Library and Information Studies
- Linguistics
- Mathematics
- Medical Anthropology
- Medical Physics
- Microbiology
- Molecular and Cell Biology
- Molecular Biology
- Music
- Near Eastern Studies
- Neurobiology
- Nutrition
- Paleontology
- Parasitology
- Philosophy
- Physical Education
- Physics
- Physiology
- Plant Biology
- Plant Pathology

Stacy Keach, ’63
Actor

Robert Matsui, ’63
Member, US House of Representatives

Rick Cronk, ’65
President, Dreyer’s Grand Ice Cream

Mimi Silbert, M.A. ’65,
D.Crim. ’88
President of Delancy Street Foundation, drug rehabilitation program; 1990 alumna of the year

Michael Boskin, ’67,
Ph.D. ’71
Chair, Presidential Council of Economic Advisors, 1989-93; professor, Stanford University

Alice Waters, ’67
Founder/owner, Chez Panisse restaurant; internationally famous chef

Leigh Steinberg, ’70,
J.D. ’73
Sports agent

Gerry Mathers, ’74
Star of Leave It to Beaver, quintessential family television comedy of the ’50s

Steve Wozniak, ’76
Co-founder of Apple Computers

Joan Abrahamson,
J.D. ’80
Public affairs activist; MacArthur Fellow

Kevin Johnson, ’87
National Basketball Association all-star with the Phoenix Suns

Mary T. Meagher, ’87
Two-time Olympic swimmer, winner of three gold medals; world record in 200-meter butterfly is longest-held in swimming; 1987 national collegiate woman athlete

Matt Biondi, ’88
Three-time Olympian, winner of 8 gold medals and 11 total medals
Political Science
Psychology
Public Health
Public Policy
Rhetoric
Romance Languages and Literatures—Emphases: French, Italian, Spanish
Scandinavian Languages and Literatures
Science/Mathematics Education
Slavic Languages and Literatures
Sociology
Soil Science
Statistics
Vision Science
Wildland Resource Science
Wood Science and Technology
Zoology

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.

Academic Opportunities

Exchange Programs
Berkeley students participating in any of the following exchange programs, with the exception of the Intercampus 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 58, "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 ap-
plicable 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, Oakland; 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.

Graduate Theological Union
There are two kinds of programs that include the facilities of the Graduate Theological Union in Berkeley: the "casual program" and the joint Ph.D. program in Near Eastern Religions.

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 in Near Eastern Religions is open only to students who intend to work toward the Ph.D. degree. To apply, 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. You must be admitted to both the Graduate Theological Union and the University, because the degree is conferred jointly by both institutions. As a student in the joint doctoral program, you will be under the administrative supervision of the graduate dean at each institution. Both deans must participate in decisions before final action may be taken on a student matter.

You may use the extensive library holdings of the Union and supplement your program with selected courses in Palestinian archaeology, Biblical studies, Semitic epigraphy, and philology. For information about the program, a catalog, and application forms, write to the Graduate Theological Union, 2400 Ridge Road, Berkeley, CA 94709.
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, 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 who have been admitted to study toward a higher degree may, under certain conditions, be granted permission to study abroad. To apply, you must have completed at least one year in residence before your departure for study abroad, and you must demonstrate language proficiency where required.

As a graduate student, you are eligible to apply to most of the study centers under the Universitywide Education Abroad Program. (For a list of study centers, see "Studying Abroad" on page 45.) You must obtain the approval of both your department and the dean of the Graduate Division.

M.A. and Ph.D. Research Internships in India

Berkeley conducts a program of fieldwork and research in India for graduate students in professional fields. Based on their professional and research interests, participants design projects which are conducted under the supervision of Indian faculty and professionals. For additional information, contact Berkeley Programs for Study Abroad, 160 Stephens Hall, University of California at Berkeley; Berkeley, CA 94720, 642-1790 or 642-1356. For course descriptions, see Berkeley Programs for Study Abroad in the courses section of this catalog.

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 Biology
111 Genetics and Plant Biology Building

Group in Ancient History and Mediterranean Archaeology
Professor Erich S. Gruen, Chair
3422A Dwinelle Hall
Group in Asian Studies
Professor James Cahill, Chair
2223 Fulton, Room 524

Group in Bioengineering
Professor Robert Landridge, Chair
c/o Engineering Interdisciplinary Studies
230 Bechtel Engineering Center

Group in Biophysics and Medical Physics
Professor Robert M. Glaeser, Chair
101 Donner Laboratory

Group in Biostatistics
Professors D. Brillinger and Nicholas Jewell,
Co-chairs
c/o School of Public Health
19 Warren Hall

Group in Buddhist Studies
Professor Padmanadh S. Jaini, Chair
c/o Department of South and Southeast Asian Studies
1203 Dwinelle Hall

Group in Comparative Biochemistry
Professor George F. Sensabaugh, Chair
c/o Department of Nutritional Sciences
146 Morgan Hall

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

Group in Energy and Resources
Professor Jeffrey Romm, Chair
c/o Group Office, 100 Building T-4

Group in Environmental Health Sciences
Professor Eddie Wei, Chair
c/o School of Public Health
19 Warren Hall

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

Group in Ethnic Studies
Professor L. Ling-chi Wang, Chair
c/o Department of Asian American Studies
3407 Dwinelle Hall

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

Group in Health and Medical Sciences
Professor Henrik Blum, M.D., Chair
c/o Program Office
570 University Hall

Group in Health Services and Policy Analysis
Professor Richard Scheffler, Chair
c/o Social and Administrative Health Sciences
405 Warren Hall

Group in Immunology
Professor Constantine H. Tempelis, Chair
c/o School of Public Health
214 Warren Hall

Group in Latin American Studies
Professor Beatriz Manz, Chair
c/o International and Area Studies
207 Moses Hall

Group in Logic and the Methodology of Science
Professor Leo A. Harrington, Chair
731 Evans Hall

Committee on Medieval Studies
(Chair to be announced)

Group in Microbiology
Professor James R. Hardy, Chair
c/o School of Public Health
216 Warren Hall

Group in Neurobiology
Professor Frank S. Werblin, Chair
c/o Department of Molecular and Cell Biology
121 Koshland Hall

Group in Nutrition
Professor Janet C. King, Chair
c/o Department of Nutritional Sciences
119 Morgan Hall

Group in Parasitology
Professor James L. Hardy, Chair
c/o School of Public Health
216 Warren Hall

Group in Range Management
Professor James Bartolome, Chair
c/o Department of Forestry and Resource Management
145 Mulford Hall

Group in Romance Philology
Professor Jerry R. Craddock, Chair
c/o Department of Spanish and Portuguese
4353 Dwinelle Hall

Group in Science/Mathematics Education
Professor Andrea A. diSessa, Chair
c/o School of Education
1607 Tolman Hall

Group in Vision Science
Russell L. DeValois, Chair
School of Optometry
360 Minor Hall

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 George W. Breslauer, Chair
Center for Slavic and East European Studies
361 Stephens Hall

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 for academic reasons to the Graduate Council of the Academic Senate.

Normative Time
For information about normative time (the time needed to complete all requirements for the doctoral degree), see page 61.

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.
The people of California have always been the mainstay of the University. Their political and financial support provided UC's first resources and have sustained the University throughout. That support has not only been public, but private as well. Most early buildings at Berkeley were the result of gifts from individuals. Current expansion of facilities is funded by a mix of public and private support.

The profile of Phoebe Apperson Hearst graces a medallion commemorating the international competition she underwrote in 1896 to develop an architectural plan for the University. The competition was won by Paris architect Emile Bénard, whose plan was adapted by John Galen Howard.
Fees and Financial Aid

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 Stafford Student 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, 120 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

University Registration Fee—$346.50 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 $1,563 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—Fall semester for undergraduates, $179; fall semester for graduate students, $197. Spring semester fees are not expected to change. All students attending the University of California at 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
## Standard Student Budgets 1993-94

### Undergraduate Off-Campus & Residence Hall

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room and Board (includes food, housing, and utilities)</td>
<td>$5,992¹</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>600</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>1,583</td>
</tr>
<tr>
<td>Transportation</td>
<td>300</td>
</tr>
<tr>
<td>Total Living Expenses</td>
<td>8,474</td>
</tr>
<tr>
<td>Fees¹ (for two semesters)</td>
<td>3,555</td>
</tr>
<tr>
<td>Health Insurance²</td>
<td>358</td>
</tr>
<tr>
<td>Total Budget (for California resident)</td>
<td>$12,388</td>
</tr>
<tr>
<td>Nonresident Tuition³</td>
<td>7,699</td>
</tr>
<tr>
<td><strong>Total Nonresident Budget</strong></td>
<td>$20,087</td>
</tr>
</tbody>
</table>

### Undergraduate Commuter (lives with parents)

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room and Board (includes food, housing, and utilities)</td>
<td>$1,786</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>600</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>1,583</td>
</tr>
<tr>
<td>Transportation</td>
<td>300</td>
</tr>
<tr>
<td>Total Living Expenses</td>
<td>$4,268</td>
</tr>
<tr>
<td>Fees¹ (for two semesters)</td>
<td>3,555</td>
</tr>
<tr>
<td>Health Insurance²</td>
<td>358</td>
</tr>
<tr>
<td>Total Budget (for California resident)</td>
<td>$8,182</td>
</tr>
</tbody>
</table>

### Grad/Law/Optometry

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room and Board (includes food, housing, and utilities)</td>
<td>$7,114¹</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>500</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>1,583</td>
</tr>
<tr>
<td>Transportation</td>
<td>300</td>
</tr>
<tr>
<td>Total Living Expenses</td>
<td>$9,496</td>
</tr>
<tr>
<td>Fees¹ (for two semesters)</td>
<td>3,555</td>
</tr>
<tr>
<td>Health Insurance²</td>
<td>394</td>
</tr>
<tr>
<td>Total Budget (for California resident)</td>
<td>$13,446¹</td>
</tr>
<tr>
<td>Nonresident Tuition³</td>
<td>7,699</td>
</tr>
<tr>
<td><strong>Total Nonresident Budget</strong></td>
<td>$21,145</td>
</tr>
</tbody>
</table>

¹Off-campus room and board includes $396 per month housing and $273 per month for food. Commuter allotment of $1,786 is for food only.

²Graduate room and board includes $520 per month for housing and $271.50 for food.

³Law student total budget is somewhat higher because law students pay additional fees that had not yet been determined when this catalog went to press. See the Announcement of the School of Law for information.

⁴The figures used for fees and health insurance reflect our information as of March 1993. The amount of fees and/or tuition may be adjusted after this date. These figures do not include an additional fee of $497.50 per semester. A portion of this fee may be temporary.
hospitalization and supplements campus care services provided at the University Health Service (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 Health Plan Office, University Health Service, Tang Center, 2222 Bancroft Way, or call 642-5700.

Nonresident Tuition—$3,849.50 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.

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 $50 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.

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 basketball. Admission to other events is available in the form of a sports pass. For prices and additional information, call 642-5150.

**Proposed Fee Schedule**

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

<table>
<thead>
<tr>
<th>Undergraduates</th>
<th>Fees per Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents</td>
<td>$2,167.25</td>
</tr>
<tr>
<td>Nonresidents</td>
<td>$6,016.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graduate Students**</th>
<th>Fees per Semester</th>
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</thead>
<tbody>
<tr>
<td>Residents</td>
<td>$2,185.25</td>
</tr>
<tr>
<td>Nonresidents</td>
<td>$6,034.75</td>
</tr>
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</table>

*These fees are based on information available as of March 1993. Please call 643-7490 for current information.

**Law students pay certain additional fees. See the Announcement of the School of Law for information.

Financial Aid

The Financial Aid Office is located on the second floor of Sproul Hall. The office is composed of four units, each serving a different part of the academic community. Please refer to the directory to the left for the address and telephone number of each unit. You may obtain detailed information about the various kinds of student aid available to Berkeley students by calling or writing 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 who indicated their interest in financial aid on their applications for admission. 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 family can contribute toward those costs. Prizes are awarded on the basis of competition or outstanding ability in some
area of creative or scholarly ability. 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, 218 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, 123 Sproul Hall, or call 642-1592.
In assigning awards, the Committee on Fellowships and Graduate Scholarships 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.

In addition to Regents’ Fellowships and fellowships funded by endowed income, which provide a $9,500 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 $11,000, 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 $10,000, 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 Minority 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 $9,500, plus tuition and fees. The fellowships are for three years and are based on continued excellence in the fellow’s advanced degree program.

**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 achieve-
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.

Graduate Opportunity Fellowships. The purpose of the Graduate Opportunity Fellowship 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 or continuing full-time registered graduate student and a citizen or permanent resident of the United States. Awards carry a $9,500 stipend, plus tuition and fees.

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 must file a Continuing/Returning Graduate Student Fellowship Application (available at the Graduate Fellowships and Appointments Office) 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 the Graduate Fellowships and Appointments Office. You must file the application and supporting materials with 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 must submit fellowship applications to their departments by January 5.

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

Fellowship Supplementation. Fellows 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.

Nonresident Tuition Scholarships

If you are a nonresident student with an outstanding academic record, you may be recommended by your department for a nonresident tuition scholarship. Awards may cover a full academic year or partial nonresident tuition only. If you receive one of these scholarships, you must enroll in a full-time program of study or research leading to a higher degree.

Applications are available in the Graduate Fellowships and Appointments Office, 318 Sproul Hall, and in departments. You should submit your completed application to your department by April 15.

Graduate Opportunity Program (GOP)

The Graduate Opportunity Program, formerly known as the Graduate Minority Program, was renamed in 1991 to reflect more closely its role of administering both merit-based Graduate Opportunity Fellowships (see above) and need-based Graduate Opportunity Program grants. The goals of the Graduate Opportunity Program are the same as those of the Graduate Minority Program: to increase the number of underrepresented students entering and completing higher degrees at the University. To that end, GOP oversees an ongoing program of recruitment 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), Filipinos, and Puerto Ricans as the most severely underrepresented, and it
recognizes that Asian Americans and Latinos are underrepresented in certain fields. U.S. citizenship is required.

Graduate Opportunity Program grants are based on evaluation of academic promise, financial need, and available program funds. Grants provide a maximum stipend of $5,500 for students in master's degree programs and up to $9,000 for students in the Ph.D. programs, plus payment of fees. GOP grants 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 grant, and 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 Financial Aid Office application for determination of financial need. Application fee waivers are also available for disadvantaged needy students from underrepresented groups. 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 at Berkeley; Berkeley, CA 94720.

Teaching and Research Positions

Teaching Appointments. Many departments make graduate student instructorships available to qualified graduate students, providing them with a stipend of $1,201 to $1,429 per month (based on a half-time appointment). 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.

New 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 in their home countries. Enrolled students should contact their major departments for details.

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 $1,036 to $1,492 per month for a half-time appointment. The duration and extent of such an appointment are variable. 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, not net, 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 6 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.

Academic appointments may include coverage of the premium for the Student Health Insurance Plan (SHIP) and a special partial remission of registration fees. Effective in spring 1992, 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.
Academic Policies

Both as individuals making a mark in their fields, and as a group setting the overall academic direction of the University, the faculty is the essential core of Berkeley. A system of faculty government known as the Academic Senate is as old as the University itself. Since its first meeting in December 1869, the Senate's development as a strong, independent element has had substantial bearing on the overall quality of Berkeley.

Looking a bit like movie character Indiana Jones, Berkeley anthropologist Alfred Kroeber (1876-1960) taught the first anthropology course offered at the University. He was the department's guiding spirit from 1901 until his retirement in 1946.
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=none. 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>Totals</td>
<td>9</td>
<td>27</td>
</tr>
</tbody>
</table>

Average 3.000

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 over 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, 128 Sproul Hall.
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, 128 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 harassment 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. 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 grade 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. The Committee on Courses considers take-home examinations that extend into final examination week to violate both the letter and spirit of the three-hour limit. 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. 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

At least once a year, the Office of the Registrar will mail you an unofficial copy of your academic record, which will include courses taken and grades received for the previous semester. Official copies of the
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, 128 Sproul Hall.

Leaving Berkeley

Cancellation of Registration

If you decide not to attend classes for a semester, you may have your enrollment and registration cancelled by submitting, before the first day of instruction, a Cancellation of Registration form or a letter to the Office of the Registrar requesting cancellation of registration. You cannot cancel your registration by nonattendance of classes alone.

Note: Graduate students must submit a Notice of Withdrawal form in addition to the cancellation form.

Withdrawal

If, after instruction begins, you find it necessary to discontinue attendance, you must request a formal withdrawal from the University, rather than a cancellation, by submitting a Notice of Withdrawal form. You should not stop attending classes without formal notice; doing so may result in the assignment of F or not passed/unsatisfactory grades, academic dismissal, or loss of eligibility for readmission to a future semester.

Note: Dropping all classes via an add/drop petition does not constitute formal withdrawal.

Where to Obtain Forms

Cancellation of Registration and Notice of Withdrawal forms are available at the Office of the Registrar, 120 Sproul Hall, and at Graduate Degrees and Petitions, 302 Sproul Hall. Full instructions are on the reverse side of the forms.
Refunds

If you cancel your registration before the first day of classes, you are eligible to receive a full refund of registration fees paid for the semester, less a $10 processing fee.

If you withdraw, the eligible amount of refund of registration fees paid for the semester is prorated according to the date on which the first University office stamps or signs the withdrawal petition, not by the date on which you stopped attending classes (see Schedule of Refunds, below).

The following fees are not refundable:

- Any late fees paid
- Deferred Payment Plan fee ($20)
- Statement of Intention to Register fee ($100) (new undergraduates only)

Note: If you are ineligible to attend the University (e.g., academic dismissal, administrative cancellation of admission), you are eligible for a refund of all fees paid for the semester. If you enter the armed forces before the sixth week of the semester, you also are eligible for a refund of all fees paid for the semester.

All refunds are subject to University review for indebtedness; any outstanding debts will be withheld from the refund. If you file the withdrawal petition; you may still have a financial obligation to the University upon withdrawal.

If you are receiving financial aid: Regardless of whether you or the Office of Financial Aid paid your fees, any refund processed will be first applied to your financial aid accounts; if any portion of your 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 refunded to you. For further information on this policy, contact the Office of Financial Aid, second floor, Sproul Hall.

Schedule of Refunds

<table>
<thead>
<tr>
<th>Cancellation</th>
<th>Refund Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before the first day of instruction</td>
<td>100% less $10</td>
</tr>
</tbody>
</table>

Withdrawal—Date of First Official Signature or Stamp on Petition:

<table>
<thead>
<tr>
<th>Withdrawal Period</th>
<th>Refund Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>First and second weeks of instruction</td>
<td>80%</td>
</tr>
<tr>
<td>Third week of instruction</td>
<td>60%</td>
</tr>
<tr>
<td>Fourth week of instruction</td>
<td>40%</td>
</tr>
<tr>
<td>Fifth week of instruction</td>
<td>20%</td>
</tr>
<tr>
<td>Sixth week of instruction and thereafter</td>
<td>no refund</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 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, 128 Sproul Hall, or call 642-4721. 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 128 Sproul Hall to fill out the form “Candidate for Bachelor’s Degree” or call 642-4721 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, which will also be necessary for graduation beginning with spring semester 1995. 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 128 Sproul Hall.

Graduate Students. Before a graduate degree can be conferred, candidates must have advanced to candidacy and completed 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.

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 128 Sproul Hall, and it will be mailed from four to six weeks after the end of the semester.

Commencement

Commencement exercises to honor students who have won 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 won their degrees in the previous fall semester or in Summer Session 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.
Demic staff can work together in an atmosphere free of harassment, exploitation, or intimidation, 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 Faculty Assistant for the Status of Women, 642-7609. Copies of the procedure are available in 200 California Hall.

**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 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
The inaugural address of Daniel Coit Gilman, UC's second president, put forth this premise: "First it is a university, and not a high school, nor a college, nor an academy of sciences, nor an industrial school which we are charged to build." The "university" was to encompass a number of colleges and schools each dedicated to their distinctive role, yet contributing to a synergistic whole. UC has grown to nine campuses; Berkeley has 14 schools and colleges.
Walter A. Haas School of Business

Office: 350 Barrows Hall, 642-7989
Dean: William A. Hasler, M.B.A.
Associate Deans: Russell S. Winer, Ph.D. (Academic Affairs) Andrew W. Shogan, Ph.D. (Instruction)
Directors: Glenn R. Carroll, Ph.D. (Ph.D. Program) David H. Downes, Ph.D. (M.B.A. Programs) Richard A. Meese, Ph.D. (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 in both fall and spring semesters. Before admission to the school, you should obtain an Announcement of the Undergraduate Program of the Haas School of Business, available in 310 Barrows Hall. 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, 310 Barrows Hall, University of California at Berkeley; Berkeley, CA 94720.

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 Business School.

Upper Division. Upper division courses to be taken at Berkeley are: 110—Microeconomic Analysis for Business Decisions; 111—Macroeconomic Analysis for Business Decisions; 120—Managerial Accounting; 130—Financial Management; 150—Organizational Behavior; 160—Marketing; 170—Social and Political Environment of Business.

Beyond these requirements, additional courses within a subject matter field must be taken. Advisers will assist you in the selection of these courses. A minimum of 37 units in upper division business courses is required.

The following subject matter fields are available:
Accounting, economic analysis and policy, finance, management science, 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 M.B.A. Programs. The Haas School offers two separate M.B.A. programs. The Berkeley campus M.B.A. program is intended for full-time students and requires two years to complete. The San Francisco M.B.A. evening program is designed for students who want to maintain their employment while undertaking graduate business study. This part-time M.B.A. program may be completed in as few as three years by taking two or three courses per semester.

The objective of the M.B.A. programs at Berkeley is to prepare men and women for management and leadership. The programs’ flexibility allows students to pursue a general course of study or to specialize in a particular field.

The diverse student body comes from 192 colleges and universities and 42 countries. Current enrollment is approximately 500 students in the two-year full-time program on campus and 250 students in the evening program in San Francisco.

The Haas School co-sponsors three concurrent-degree programs:
• J.D./M.B.A. in conjunction with Boalt Hall or Hastings College of the Law;
• M.B.A./M.P.H. in health services management in conjunction with the School of Public Health;
• M.B.A./M.A. in Asian studies in conjunction with the Group in Asian Studies.

In addition, two joint curriculum programs are offered:
• The Joint Program in Management of Technology in conjunction with the College of Engineering;
• The Real Estate Development Program in conjunction with the Department of City and Regional Planning and the Center for Real Estate and Urban Economics.

Curriculum. The information that follows concerns the full-time M.B.A. program on campus. Applicants interested in the San Francisco M.B.A. evening pro-
gram for the fully employed should contact the SF/ M.B.A. office at the address below.

To graduate, students must complete 52 semester units of course work comprised of 28 units of core (required) courses and 24 units of electives. A minimum residency of two academic years is required of all who enroll.

Credit may not be transferred from other graduate or undergraduate programs. However, students demonstrating proficiency in a core subject may waive the requirement and replace it with an elective course.

Because the core curriculum can be quite quantitative in nature, admitted applicants must demonstrate proficiency in mathematics through the fundamentals of calculus.

Where space is available, core and advanced courses of the business school are open to students from other fields of study on campus who have satisfied prerequisite requirements. Since available classroom space is often limited, nonbusiness students may not be able to take a given course in a specific semester. Students should consult the MBA office concerning space availability and faculty in their own fields for aid in planning to take business school courses.

Exchange Programs. The Haas School offers 10 exchange programs with some of the finest business schools in Europe and Asia. Schools involved in the international exchange include the Manchester Business School and the London Business School in England, L'École des Hautes Études Commerciales (HEC) in Paris, the Rotterdam School of Management in the Netherlands, SDA Bocconi in Milan, IESE in Barcelona, Solvay Business School in Brussels, Kohlenz School of Management at Keio University in Japan, and Chinese University in Hong Kong. In addition, programs such as the Washington Campus Program, conducted in the nation's capital, provide students with the opportunity to pursue a diverse education.

Admission. Applications for the Berkeley M.B.A. program are accepted for fall entry only. Each year, the school receives more than 2,500 applications for about 230 positions in the entering class. The average GPA in the current class is 3.28 and the median GMAT score is 660 for domestic students and 640 for all students, domestic and international. More than 99 percent of the students have significant full-time business experience before entering the program.

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.

Applications are reviewed beginning in November and are evaluated on a continuous basis, generally in the order of their receipt. Applicants are strongly urged to submit completed applications as early as possible. International applicants especially are urged to do so, since their academic records take longer to evaluate.

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 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 on Tuesdays, Thursdays, and Fridays at 2 p.m. in 129 Barrows Hall 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 as well. 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 campus M.B.A. programs should be addressed to:
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 enrolls students with interests in real estate, provided they take the required coursework 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 course work 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, 371 Barrows Hall, University of California at Berkeley; Berkeley, CA 94720.
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. The B.S. degree in chemical engineering is intended as preparation for a career in chemical engineering and related disciplines. Students 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.

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, biophysical 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. If you have a choice, the preferred foreign language is German.

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
Dean:
William D. Rohwer, Jr., Ph.D.
Associate Dean for Academic Affairs:
Judith Warren Little, Ph.D.
Associate Dean for Student Affairs:
Nadine M. Lambert, Ph.D.
Assistant Dean for Administration of Teacher Education:
Allen Black, Ph.D.

Education can serve either to enlarge or constrict the prospects of individuals and societies. The chance to participate in expanding the bounds of human potential creates a compelling attraction to the practice and study of education. To those captivated by this field, the Graduate School of Education offers opportunities for conducting imaginative and rigorous research, engaging in incisive analysis of educational problems, fostering productive learning in students of diverse ages and backgrounds, and managing complex educational systems.

The school offers four kinds of graduate programs: (1) credential programs for prospective elementary and secondary school teachers who are interested in acquiring a strong grounding in educational research on developmental psychology, writing, science, or mathematics and in applying this knowledge to problems of teaching and learning; (2) advanced credential programs for experienced school practitioners who are intent on developing specialized leadership capacity in areas such as administration; (3) advanced professional degree programs
leading to the M.A., M.A.T., or Ed.D. degree; and (4) advanced academic degree programs leading to the M.A. or Ph.D. degree. In addition, the school offers an undergraduate minor in education that is designed to prepare students for citizen involvement with the public schools and universities.

The school’s programs are organized into six principal areas of study: Education in Mathematics, Science and Technology; Education in Language and Literacy; Educational Administration; Educational Psychology; Social and Cultural Studies in Education; and Special Education.

• In Education in Mathematics, Science, and Technology, there are two areas of concern: research that will advance both fundamental and applied understanding of cognition and instruction, and the development of advanced computational systems for learning and teaching. Students must have a strong background in mathematics, physical or life science, computer science, or engineering.

• Education in Language and Literacy emphasizes reading, writing, and first and second language acquisition in educational settings. The approach is interdisciplinary and includes the study of linguistics, psycholinguistics, sociolinguistics, and cognitive psychology. A central concern is the influence of social and cultural experiences on language and literacy development.

• Educational Administration focuses on the development of a broad understanding of the structure of educational systems; the quality, effectiveness, and equity of educational programs; and the nature of the changing social, political, fiscal, and legal contexts of education. School leadership and management, higher education leadership and management, political and policy analysis, financing and organizational design, and educational planning and evaluation are the major areas of study.

• Educational Psychology focuses on two areas: developmental phenomena, including cognitive development, social development, and individual differences; and quantitative methods, including measurement, psychometrics, research methods, and data analysis.

• Social and Cultural Studies in Education focuses on the social and cultural contexts within which schools operate. The relationship of social, cultural, philosophical, and political events to curriculum and pedagogy in the public school are examined.

• Special Education focuses on developing research competence and advanced knowledge of theory in an area of exceptionality. This doctoral program, offered jointly with San Francisco State University, allows students to specialize in human development, education policy studies, educational administration, vocational education, language and literature studies, mathematics, science and technology, or other areas selected by students in consultation with faculty counselors in the Schools of Education at SFSU and Berkeley. Courses are taken on both university campuses.

For details about the school’s programs and information concerning admissions requirements and procedures, consult the Announcement of the Graduate School of Education, available by writing or visiting the Graduate School of Education, Education Admissions Office, 1607 Tolman Hall, University of California at Berkeley; Berkeley, CA 94720, or by calling 642-5345.

College of Engineering

Office of the Dean: 320 McLaughlin Hall; graduate information, call individual departments; undergraduate information, call 642-7594.

Dean: David A. Hodges, Ph.D.

Associate Deans:
George Leitmann, Ph.D., Dr.Ing. (hon.)
Edwin R. Lewis, Ph.D.
H. Frank Morrison, Ph.D.
Steven E. Schwarz, Ph.D.
William C. Webster, Ph.D.

The College of Engineering consists of seven departments and an interdisciplinary studies program. Each department has its own faculty, set of courses, fields of specialization, and curriculum requirements. All departments offer programs leading to the B.S. and postgraduate degrees.

The college includes the departments of:
• Civil 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 is listed separately in alphabetical order in this catalog. There are also separate sections for programs in:
• Applied Science and Technology
• Bioengineering
• Biophysics
• Engineering—Double Majors
• Engineering Science
• Manufacturing Engineering
• Petroleum Engineering
Each program is listed as identified above. In addition, other sections of interest are:

- Engineering courses
- Engineering—Interdisciplinary Studies Program
- 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, mechanical engineering, mineral engineering, naval architecture, nuclear engineering (all accredited by the Accreditation Board for Engineering and Technology, Inc.). Programs are also offered in manufacturing engineering, materials science, operations research, and petroleum 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. Five double major programs within the college are offered. These are in nuclear engineering or materials science and engineering with nuclear engineering. In addition to these five programs, three double major programs in materials science and engineering/chemical engineering, petroleum engineering/chemical engineering, and nuclear engineering/chemical 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 environmental engineering open to junior and senior engineering students and to 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 of energy and environmentally related problems. Energy-related topics include nuclear fission and fusion and hydroelectric power generation; geothermal, tidal, and solar power; and direct energy conversion. Topics related to the environment include air pollution, water pollution, solid waste disposal, and toxic and radioactive waste management.

**Degree Requirements.** Engineering students must fulfill University, 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. For unit extension beyond 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 degrees for advanced professional studies of design development. Fields of study include bioengineering, civil engineering, electrical engineering and computer sciences, industrial engineering and operations research, mechanical engineering, nuclear engineering, ceramic engineering and metallurgy, materials science and mineral engineering, engineering geoscience, 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, engineering and business administration, 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 Engineering (Structural); an M.C.P. in City and Regional Planning with an M.S. in Civil Engineering (Transportation); an M.P.P. in Public Policy with an M.S. in an engineering department.

 More information will be found throughout the engineering sections of this catalog and in the Announcement of the College of Engineering. The announcement is available from the College of Engineering, 308 McLaughlin Hall, University of California at Berkeley; Berkeley, CA 94720, or from any organizational unit listed below.

Organizational Units

Civil Engineering
Department Office, 760 Davis Hall, 642-3261
Chair: Keith C. Crandall, Ph.D. (until May 31, 1993; afterward, to be announced)

Electrical Engineering and Computer Sciences
Department Office, 231 Cory Hall, 642-3214
Chair: Paul R. Gray, Ph.D.

Computer Science Division
Division Office, 571 Evans Hall, 642-1024
Associate Chair: David A. Patterson, Ph.D.

Industrial Engineering and Operations Research
Department Office, 4153 Eicheverry Hall, 642-5484
Chair: Ronald W. Wolff, Ph.D.

Materials Science and Mineral Engineering
Department Office, 210 Hearst Mining Building, 642-3801
Chair: Ronald Gronsky, Ph.D.

Mechanical Engineering
Department Office, 6189 Etchevery Hall, 642-1338
Chair: David B. Bogy, Ph.D.

Naval Architecture and Offshore Engineering
Department Office, 202 Naval Architecture Building, 642-5464
Chair: Ronald W. Yeung, Ph.D.

Nuclear Engineering
Department Office, 4153 Eicheverry Hall, 642-5010
Chair: T. Kenneth Fowler, Ph.D.

Interdisciplinary Studies
Program Office, 230 Bechtel Engineering Center, 642-8790
Associate Dean: Edwin R. Lewis, Ph.D.

College of Environmental Design

Office of the Dean: 230 Wurster Hall, 642-0830
Dean: Roger Montgomery, M.Arch.
Assistant Dean—Undergraduate Administration: (To be announced)

The College of Environmental Design combines in a single academic unit professional instruction in architecture, city and regional planning, and landscape architecture, 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 in the modern world.

The college consists of three departments: Architecture, City and Regional Planning, and Landscape Architecture. 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 under-
graduate major or minor programs are professionally accredited by their respective professions. At the graduate level, each department offers the professionally accredited master's degree. 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 sufficient for entry-level employment in the building industry including architecture, landscape architecture, and other 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.

**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 56 semester units should have completed the prerequisite course work described in the *Announcement of the College of Environmental Design*. 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, transfer students 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 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 which appear in the *Announcement of the College of Environmental Design*, available from the Undergraduate Dean's Office, 234 Wurster Hall, University of California at Berkeley; Berkeley, CA 94720.

**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 architecture and civil engineering majors only. The landscape design minor is open to architecture majors only. For further information, contact the Undergraduate Office, 234 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 *Announcement of the College of Environmental Design*.

**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 degree programs that combine professional degrees in two fields either within the college or with other professional schools. In addition, an M.A. degree in design is offered for a very few students.

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. 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

*Chair:*  
(To be announced)

**City and Regional Planning**

Department Office: 228 Wurster Hall, 642-3256

*Chair:*  
Allan B. Jacobs, M.C.P.

**Landscape Architecture**

Department Office: 202 Wurster Hall, 642-4022

*Chair:*  
Michael M. Laurie, M.L.A.

**Graduate School of Journalism**

Office: 121 North Gate Hall, 642-3383

*Dean:*  
Tom Goldstein, J.D.

*Associate Dean:*  
Thomas C. Leonard, Ph.D.

The goal of the Graduate School of Journalism is to produce professional journalists who move on to posi-
School of Law

Office: 225 Boalt Hall, 642-2278

Administrative Officers:

Dean:
Herma Hill Kay, J.D.

Associate Deans:
John P. Dwyer, Ph.D., J.D.
Harry N. Scheiber, Ph.D.

Assistant Deans:
Leslie Oster, J.D.
Sue Ann L. Schiff, J.D.
Lujana 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.

College of Letters and Science

Office of Undergraduate Advising: 113 Campbell Hall, 642-1483
Dean:
Carol T. Christ, Ph.D.

Divisional Deans:
David R. Bentley, Ph.D., Biological Sciences
Anthony Newcomb, Ph.D., Humanities
P. Buford Price, Physical Sciences
Gerald A. Mendelsohn, Ph.D., Social Sciences
Donald McQuade, Ph.D., Undergraduate and Interdisciplinary Studies
Bonnie C. Wade, Undergraduate Services

Assistant Deans:
Anthony Barnosky, Ph.D., Integrative Biology
Brenda J. Bredemeier, Ph.D., Physical Education
Harry L. Morrison, Ph.D., Physics
Susan Schweik, Ph.D., English

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 research in a variety of academic subjects. Each department represents a style of study and communication 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.

Students who enter the college with advanced-placement credit may exceed by the amount of this credit the maximum unit limitation requiring the selection of a major and the maximum unit limitation requiring graduation.

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 transfer core curriculum or the Intersegmental General Education Transfer Curriculum (IGETC). These programs specify 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. Students who have completed the minimum subject preparation 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. With the exception of Plan III of the major in molecular and cell biology (see departmental listing) and the major in physical education (see departmental listing), 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 Announcement of the College of Letters and Science. 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 (R&C 1A) during the freshman year and the second half of the requirement (R&C 1B) 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. Six Courses (minimum total of 16 semester units) outside the Field of Students’ Major. Students must
follow specific college guidelines in the satisfaction of this requirement, and its completion may be spread over the four years of college attendance. The fields of knowledge are defined as the humanities, the natural sciences, and the social sciences.

Note: The faculty of the college has approved a revised version of this portion of the breadth requirement, effective fall semester 1994 for freshmen and fall semester 1996 for transfer students. The revised version will include courses from the professional schools and colleges. See the Announcement of the College of Letters and Science for details.

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, physical education) and the physical sciences (e.g., geology, mathematics, statistics, etc.). In addition, there are group majors in 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, political economy of industrial societies, religious studies, and social welfare. There are also field majors in the physical sciences and social sciences. 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 and groups:

- Department of African American Studies
  - African American Studies Humanities Minor
  - African American Studies Social Science Minor
- Department of Art, History of
  - Minor in the History of Art
- Group in Asian Studies
  - Option I: Minor in Chinese Studies
  - Option II: Minor in Japanese Studies
  - Option III: Minor in Southeast Asian Studies
- Group in Celtic Studies
  - Minor in Celtic Studies
- Department of Classics
  - Minor in Greek
  - Minor in Latin
  - Minor in Classical Civilization
- Group in Demography
  - Minor in Demography
- Group in Dutch Studies
  - Minor in Dutch Studies
- Department of English
  - Minor in English: Creative Writing
  - Minor in English: American Literature
  - Minor in English: Literature in English
- Department of Ethnic Studies
  - Minor in Asian American Studies
  - Minor in Chicano Studies
  - Minor in Ethnic Studies
  - Minor in Native American Studies
- Department of French
  - Minor in French
- Department of Geography
  - Minor in Geography
- Department of German
  - Minor in German
- Department of Italian
  - Minor in Italian
- Department of Mathematics
  - Minor in Mathematics
- Department of Music
  - Minor in Music
- Department of Near Eastern Studies
  - Minor in Arabic, Option A or B
  - Minor in Hebrew, Option A or B
  - Minor in Persian, Option A or B
  - Minor in Turkish, Option A or B
- Department of Philosophy
  - Minor in Philosophy
- Department of Physics
  - Minor in Physics
- Group in Religious Studies
  - Minor in Religious Studies
- Department of Rhetoric
  - Minor in Rhetoric
- Department of Scandinavian
  - Minor in Scandinavian
- Department of Slavic Languages and Literatures
  - Minor in Russian Language
  - Minor in Russian Literature
  - Minor in Slavic Language and Literature
Department of South and Southeast Asian Studies
Minor in South Asian Civilization
Minor in South Asian Archaeology
Department of Spanish and Portuguese
Minor in Spanish Language and Literatures
Minor in Luso-Brazilian Language and Literatures
Department of Women's Studies
Minor in 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.

Division of Undergraduate and Interdisciplinary Studies

The Division of Undergraduate and Interdisciplinary Studies 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 Celtic studies, cognitive science, environmental sciences, film, mass communications, peace and conflict studies, religious studies, and group majors in international and area studies (207 Moses Hall, 642-4466): Asian studies, development studies, Latin American studies, Middle Eastern studies, and political economy of industrial societies (PEIS).

Minor programs are offered in Celtic studies and religious studies. For complete descriptions of the major and minor programs and courses, please see the entries listed alphabetically by major in the courses section of this catalog.

The College Writing Programs (216 Dwinelle Annex, 642-5570), designed to help undergraduates establish fluency and control over their reading and writing skills, is also in the Division of Undergraduate and Interdisciplinary Studies.

The division also sponsors the Western and world civilization course series (Undergraduate and Interdisciplinary Studies 44A-44B-44C, and 55A-55B, respectively), and the "catalog course"—an undergraduate colloquium that offers lower division students an introduction to the ideas and issues facing different academic disciplines from across the campus. The catalog course is offered through the interdisciplinary studies field major as ISF 79.

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 Rhodes, Marshall, and Truman Scholarships, as well as the Haas-Koshland and Kraft Awards, are also administered through this division.

The division also sponsors the residential tutoring program at Clark Kerr campus, and the Medical Cluster, a student-run support program for undergraduates preparing to enter the health sciences.

Organizational Units

African American Studies
American Studies (pending final approval)
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
Cognitive Science
College Writing Programs
Comparative Literature
Computer Science
Demography
Development Studies
Dramatic Art
Dance
Dramatic Art
Dutch Studies
East Asian Languages
East European Studies
Economics
Law and Economics
English
Environmental Sciences
Ethnic Studies
Ethnic Studies Graduate Group
Film
Folklore
French
Geography
Geology and Geophysics
German
History
Integrative Biology
Interdisciplinary Studies
Italian
Latin American Studies
Legal Studies
Linguistics
Logic and the Methodology of Science
Mass Communications
Mathematics
Medieval Studies
Middle Eastern Studies
Molecular and Cell Biology
Music
Native American Studies
Near Eastern Studies
Peace and Conflict Studies
Philosophy
Physical Education
Physical Science
Physics
Political Economy of Industrial Societies
Political Science
Population Studies
Psychology
Religious Studies
Rhetoric
Romance Philology
Scandinavian
Science and Mathematics Education
Slavic Languages and Literatures
Social Welfare
Sociology
South and Southeast Asian Studies
Spanish and Portuguese
Statistics
Undergraduate and Interdisciplinary Studies
Women's Studies

School of Library and Information Studies

Office: 102 South Hall, 642-1464
Acting Dean:
Nancy A. Van House, Ph.D.

Modern societies need information professionals to organize, manage, and provide access to their vast and rapidly growing stocks of information. New information technology, especially the computer, has provided revolutionary new opportunities for a new kind of information professional. People are needed to design and operate computer-based information systems; to manage information resources, systems, and services; and to provide individualized information service. In addition, people are needed to conduct research aimed at the improvement of access to information and the increase of knowledge about the production, transmission, and utilization of knowledge and information. The School of Library and Information Studies offers graduate degree programs aimed at the preparation of information professionals and at the encouragement of research in information studies.

A program of 28 units of approved courses leads to the degree Master of Library and Information Studies. Three courses are required; the rest may be selected from courses offered by the school and other departments on campus. The MLIS program can be completed in two semesters, but in fact most students take three or more semesters to complete degree requirements. There is no single best pattern of undergraduate preparation for entry into the graduate

Doe Library is the centerpiece of a system of more than 25 campus libraries ranked among the top university libraries in the country, with more than seven million volumes.
MLIS program; library and information service provides a setting for use of the most diverse abilities and educational backgrounds. There is a computer competency requirement for admission to the MLIS program. Holders of a California teaching credential may pursue a specialization within the MLIS program leading to award of the California Library Media Teacher Credential. Holders of the MLIS degree are eligible for the California Community College Credential.

A Certificate of Completion of a Graduate Curriculum in Library and Information Studies is awarded for approximately one academic year of full-time study beyond the MLIS degree.

The school offers a program leading to the Ph.D. for students interested in advanced research and teaching in information studies and in preparation for higher management positions in information organizations. Fields of specialization for the Ph.D. include information system analysis, design, and implementation; information retrieval theory; management of information agencies; economics of information; social studies of information; cognitive science and intellectual access; history of printing; and history of publishing.

Admission to all the degree programs is contingent on admission to graduate standing. The school also offers a number of undergraduate courses.

For further information about the school’s programs, admissions requirements and procedures, financial aid, and other matters, consult the Announcement of the School of Library and Information Studies, available by writing or visiting the school office, or by calling 642-1464.

College of Natural Resources

Office of the Dean: 101 Giannini Hall, 642-7171

Dean:
Wilford R. Gardner, Ph.D.

Associate Dean—Academic Affairs:
Richard Malkin, Ph.D.

Associate Dean—Research:
Dennis E. Teegarden, Ph.D.

Associate Dean—Instruction and Student Affairs:
Sally K. Fairfax, Ph.D.

Modern human society, with all its complexity and diversity, depends totally on the natural resources to sustain its existence. Teaching and research in the College of Natural Resources (CNR) integrate the natural and social sciences to address ecological problems in rural and urban landscapes, agriculture, rangelands, forests, wetlands, and watersheds. The goals of the college are to evaluate the complex interaction between the natural environment and society and to transfer research findings to society, recommending policy that will meet fundamental human needs. These efforts will increase knowledge, promote the sustainable use of natural resources, and provide the foundations of wise and responsible environmental management.

Formed in 1974 by a merger of the former College of Agricultural Sciences and the School of Forestry and Conservation, the College of Natural Resources has roots as old as the University of California. The college is currently reorganizing its teaching, research, and outreach programs. Proposed streamlining in CNR would pare its eight departments down to four in order to integrate natural and social sciences and focus on undergraduate teaching. Programs in three of its present departments, Agricultural and Resource Economics, Nutrition, and Plant Biology, would not be substantially restructured. The remaining five departments would combine to form a proposed new Department of Environmental Science, Policy and Management. Both the current and the proposed organizational schemes are outlined below.

Current Departments

Today, the college’s educational and research programs in the study of renewable natural resources, which are characterized by a mixture of natural sciences and social sciences, can be grouped into five overlapping areas:

- Agricultural sciences are represented by the Departments of Entomology, Plant Pathology, and Soil Science, which emphasize graduate education and basic science (including molecular biology, applied ecology, and biological control) in direct support of applied problems in agriculture. These departments provide the core for the undergraduate major in bioresource science.

- The Department of Plant Biology, formed with the reorganization of the biological sciences at Berkeley, has a strong focus on basic plant biology from the molecular to the organismal levels, with a direct connection to plant biotechnology.
The Department of Nutritional Science provides basic study of nutrition and food science and also provides a professionally accredited undergraduate program in clinical dietetics.

The Department of Forestry and Resource Management, in addition to its traditional, accredited professional forestry programs, has programs in resource management, wildland resource science, and range management. The affiliated Forest Products Laboratory sponsors programs in forest products and in wood science and technology.

The Department of Agricultural and Resource Economics and the Department of Conservation and Resource Studies emphasize 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.

Proposed Departments

- The proposed Department of Environmental Science, Policy and Management would coordinate and strengthen CNR's interdisciplinary approaches to critical environmental problems. Its faculty would be drawn from the existing departments of Forestry and Resource Management, Plant Pathology, Soil Science, Conservation and Resource Studies, and Entomological Sciences.

- The Department of Plant Biology would maintain its strong focus on basic plant biology from the molecular to the organismal levels, with a direct connection to plant biotechnology.

- The Department of Nutritional Science would continue to provide basic study of nutrition and food science, including a professionally approved undergraduate program in clinical dietetics.

- The Department of Agricultural and Resource Economics still would emphasize the economics of natural resources, the environment, and agriculture, in the United States and abroad. The use of quantitative methods would be integral to the department.

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.

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 Dean's Office, Student Affairs, 106 Giannini Hall, University of California at Berkeley, Berkeley, CA 94720. For further information, call the Office of Student Affairs at 642-0542.

Proposed New Curricula. Undergraduate programs in the Departments of Agricultural and Resource Economics (Political Economy of Natural Resources), Plant Biology, and Nutrition would not be significantly altered by the reorganization of the college. This catalog and the Announcement of the College of Natural Resources provide basic guidelines on those undergraduate programs. Planners for the new Department of Environmental Science, Policy and Management have proposed two basic tracks—natural sciences and social sciences—to structure the undergraduate curriculum for all lower division students in that department. At the upper division, students would choose from four proposed majors: conservation and resource studies (CRS), which allows students flexibility working with a faculty adviser to develop individual programs of study; environmental sciences, which focuses on understanding the biotic and abiotic factors of environmental problems; molecular applied biology, a vertically integrated program emphasizing the organization and function of biological organisms at the molecular, cellular, organismal, and ecological levels; and resource management, which integrates natural and social sciences to focus on managing diverse ecosystems.

Students interested in learning more about programs in the proposed Department of Environmental Science, Policy and Management are urged to contact the Dean's Office, Office of Student Affairs, for the most recent information on course availability and program specifics.

Students starting their programs under the pre-reorganization requirements may finish their degrees under either the old or the new requirements. Students declaring their majors after the proposed reorganization is approved must follow the new requirements.

Minor Programs. The college offers minors in conservation and resource studies, entomology, forestry, forest products, political economy of natural resources, and soil science.

Please contact the appropriate departmental office or the Dean's Office, Office of Student Affairs, for information.

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 is necessary. Students must also have a GPA of 3.0 or better. For further qualifications and information, contact the Student Affairs Office at 642-0542 in 106 Giannini Hall.
Undeclared Status. Freshmen may be admitted each year to the College of Natural Resources in undeclared status. Students so admitted must declare a major in natural resources after their first year. During the period in undeclared status, students are required to take a lower division preparatory program that will satisfy natural resources majors.

Students should contact their advisers promptly for advice about potential majors and requirements. A typical course schedule for undeclared freshmen includes basic English (1A or College Writing); mathematics (calculus: Mathematics 16A or 1A) or Mathematics 32; Chemistry 1A or economics (PENR 1). Most college majors, even those oriented toward social science, may require students to take both chemistry and economics.

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 encouraged to see their advisers frequently—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 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, entomology, forestry, genetics, nutrition, plant biology, plant pathology, range management, soil science, wildland resource science, and wood science and technology. 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.

Current Organizational Units
Agricultural and Resource Economics
Department Office, 207 Giannini Hall, 642-3345
Chair: Andrew Schmitz, Ph.D.

Bioresource Sciences
Office, 251A Hilgard Hall, 642-3959
Major Adviser: Oen Huisman, Ph.D.

Conservation and Resource Studies
Department Office, 112 Giannini Hall, 642-6730
Chair: David Wood, Ph.D.

Entomological Sciences
Department Office, 201 Wellman Hall, 642-6660
Chair: Rudolph L. Pipa, Ph.D.

Forestry and Resource Management
Department Office, 145 Mulford Hall, 642-3765
Chair: John Helms, Ph.D.

Forest Products
Department Office, 145 Mulford Hall, 642-3765; if no answer, call 478
Richmond Field Station, 231-9456
Chair: Frank Beall, Ph.D.

Nutritional Sciences
Department Office, 119 Morgan Hall, 642-6490
Chair: Janet King, Ph.D.

Plant Biology
Department Office, 111 Koshland Hall, 642-5167
Chair: Lewis Feldman, Ph.D.

Plant Pathology
Department Office, 147 Hilgard Hall, 642-5121
Chair: Milt Schroth, Ph.D.

Soil Science
Department Office, 108 Hilgard Hall, 642-0341
Chair: Harvey Doner, Ph.D.

Interdepartmental Graduate Groups
Ad Hoc Interdisciplinary Doctoral Program
(administered by the dean of the Graduate Division)

Biophysics
230 Bechtel Engineering Center, 642-0379

Comparative Biochemistry
146 Morgan Hall, 642-2879

Nutrition
146 Morgan Hall, 642-2879

Plant Biology
111E Koshland Hall, 642-5167

Range Management
145 Mulford Hall, 642-3765

Soil Science
108 Hilgard Hall, 642-0341
School of Optometry

Office of the Dean (642-3414) and Admissions (642-9537): 351 Minor Hall

Dean:
Anthony J. Adams, O.D., Ph.D.

Associate Dean of Clinical Academic Affairs:
Kenneth A. Polse, O.D., M.S.

Assistant Dean—Academic Affairs:
Gunilla Hagerstrom-Portnoy, O.D., Ph.D.

Assistant Dean—Student Affairs:
Darrell B. Carter, 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 who specialize in the examination, diagnosis, and treatment of conditions or impairments of the vision system. Optometrists are specifically educated, cilia-

Doctors of Optometry are independent primary health care providers who specialize in the examination, diagnosis, treatment and management of diseases and disorders of the visual system, the eye and associated structures as well as the diagnosis of related systemic conditions.”

—The official definition of an optometrist, adopted by the American Optometric Association Board of Trustees

The interior of the Hearst Memorial Mining Building, constructed in 1907, is one of the campus's most striking architectural features.
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.

The school also offers a graduate program in vision science which leads to the M.S. and Ph.D. degrees. Offered in cooperation with other departments of the University, this program is designed to prepare students for a career in teaching and research in the science of vision. Research facilities available to graduate students in vision science are unexcelled anywhere in the world, and a distinguished resident and visiting faculty is available to provide guidance in the field.

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 vision and/or pediatrics, family practice optometry, contact lenses, visual functions, low vision care, and ocular disease detection. Special combined or unique programs may be considered.

For optometrists interested in reading disabilities, a Master of Arts degree program is offered in the School of Education in cooperation with the School of Optometry. This post-O.D. program is designed for optometrists who want to specialize in the handling of children with reading problems, particularly those problems that are visually based. Additional information for this program may be obtained by writing to the Admissions Office, School of Education, Tolman Hall, University of California at Berkeley; Berkeley, CA 94720 (642-5345).

For further information about any of the school's programs, please consult the Announcement of the School of Optometry, available from the Admissions Office, School of Optometry, 381 Minor Hall, University of California at Berkeley; Berkeley, CA 94720.

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 other departments.

Students interested in this graduate program should become familiar with the regulations of the Graduate Division and should contact the adviser of the Group in Vision Science as early as possible. Admission to this program requires a bachelor's degree in a science field 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 B.S., M.S., and Ph.D. degrees, please consult the adviser of the Group in Vision Science, School of Optometry.

School of Public Health


Dean: Patricia A. Buffler, M.P.H., Ph.D.

Associate Deans: C. Jean Morton, M.S.W., M.P.H.
Allan H. Smith, M.D.

The basic mission of the School of Public Health is to provide leadership in the fields of education, research, and service in all aspects of public health. Public health as a field is devoted to the promotion of health and the prevention of disease through identification of the factors affecting the health of population groups and the determination of how best to bring about change necessary to assure the maximum well-being of all people. Accomplishing this mission requires the joint efforts of professionals from many disciplines directing their attention toward understanding the biological, environmental, and social factors involved in the causation of diseases and the maintenance of health. Health policy analysis and study of health care systems are also essential to accomplishing our mission. Identification of populations with special health needs and methods for addressing those needs are of concern. Health promotion, health protection, and disease prevention are the unifying themes for the curriculum, research, and service activities of the school.

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

The professional degrees, Master of Public Health (M.P.H.) and Doctor of Public Health (Dr.P.H.), are offered in the area of biomedical and environmental health sciences, including epidemiology, biostatistics, environmental health sciences, biomedical sciences, and forensic science, and in the area of social and administrative health sciences, including health policy and administration, maternal and child health, public health nutrition, applied behavioral sciences, and community health education. Particular attention also may be given to special areas of concern such as aging, population, environmental pollution, disease control, genetic counseling, and health and medical care delivery.

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

Biosciences, M.A., Ph.D.; Environmental Health Sciences, M.S., Ph.D.; Epidemiology, M.S., Ph.D.; Health Services and Policy Analysis, Ph.D.; Immunology,
M.A., Ph.D.; Microbiology, M.A., Ph.D.; Parasitology, M.S., Ph.D.

Students are encouraged, and in most programs are required, to begin studies in the fall semester because of the sequence in which courses are scheduled. Separate applications for admission must be submitted to the Graduate Division of the University and to the School of Public Health no later than February 12 for admission to the following fall semester. Applicants to the General Preventive Medicine Program must submit all application materials by December 15.

For further information, consult the Announcement of the School of Public Health, available from the school.

Organizational Units

Biomedical and Environmental Health Sciences
Department Office, 113 Haviland Hall, 642-4416
Chair: George F. Sensabaugh, D.Crim.

Social and Administrative Health Sciences
Department Office, 513 Earl Warren Hall, 642-9441
Chair: Teh-wei Hu, Ph.D.

Graduate School of Public Policy

Office: 2607 Hearst Avenue, 642-4670
Dean: Eugene Smolensky, Ph.D.

For many decades now, the problems American 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 American public policy, how it is made, 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 a wide variety of contemporary American domestic 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. The primary focus is on American domestic policy issues. Students from diverse disciplinary backgrounds are accepted into this program. Those completing the master's program are qualified to take responsible positions with government and policy research organizations and to work in the private sector on matters related to public policy. Some graduates work primarily as policy analysts while others pursue administrative and political careers which involve the
initiation and utilization of policy studies. The two-year master’s degree program consists of a required first-year core curriculum, a summer internship, and a second year devoted to elective courses and a policy study of the student’s choice. The first-year 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.

**Ph.D. in Public Policy**

The Ph.D. program prepares students for careers in advanced policy research in academic institutions, research institutes, and government agencies. The Ph.D. program is oriented toward the generation of new knowledge, theories, and methodologies in public policy analysis. The program is small and admission is highly selective.

**Further Information**

Brochures and information on admissions procedures and student financial assistance are available from the Graduate School of Public Policy, University of California at Berkeley, 2607 Hearst Avenue, Berkeley, CA 94720.

**School of Social Welfare**

Office: 120 Haviland Hall, 642-4341

Dean: Harry Specht, Ph.D.

**Graduate Program**

The School of Social Welfare is a graduate professional school dedicated to educating men and women for careers in service to people in need. 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 (many of whom are disadvantaged and from minority backgrounds) who experience these problems. Professional education focuses on the organizational structures, programs and policies, methods of practice, and institutions that attend to these social 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 of new programs and policies that address emerging 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 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.

- **A two-year program of studies for the Master of Social Welfare degree in preparation for the professional practice of social work.** Classroom and field courses are designed to teach professionals to use tested knowledge and skill and research methods and techniques in their practice. Applicants for admission must have strong academic preparation in the liberal arts and sciences, including course work in the social, behavioral, and biological sciences (including human biology). 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.

- There are also several special programs: the Intercambio Academico project, the M.S.W./M.P.H. dual degree program, the social welfare/law concurrent degree program, the pupil personnel services credential, 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.

**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.
The large lower division lecture class, often maligned but also stalwartly defended, has been a feature of Berkeley education for decades. This class was held around 1950.
Introduction to Courses and Curricula

Sather Tower, more popularly known as the Campanile, was built in 1914 with a gift from Jane Sather. Bells near the top of the campus's most prominent landmark toll the hours, and carillonneurs also perform musical pieces.

Key to Symbols

The following symbols are used in the departmental faculty rosters and course listings in the "Courses and Curricula" section that follows:

1 On leave, fall, spring
2 On leave, fall
3 On leave, spring
4 Recalled to active service
† Recipient of Distinguished Teaching Award

"Above the Line" and "Below the Line"

The faculty roster of many departments is 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 in which you are interested, consult the Index.

The colleges and schools are introduced in the "Colleges and Schools" 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

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. Summer Session courses are listed separately in the Summer Session 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 A.B. 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. A copy of the approved proposal must be submitted to the Committee on Courses of Instruction. Only a grade of passed/not passed is to be assigned. The dean of your college or school, on the 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 the 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. A copy of the approved proposal must be submitted to the Committee on Courses of Instruction. To enroll in 198 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 the advice of the instructor and department concerned, 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 the 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.

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.

Certain courses offered at the University of California at Berkeley require the use of animals, living or preserved, vertebrate and/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.