Ecological Management and Restoration

This major is designed for students who are interested in understanding how to manage and restore wildlife and rangeland plant communities. Courses are selected to provide an interdisciplinary background that encompasses ecology, applied plant biology, and the social sciences. Students will acquire a core understanding of natural and managed ecosystems and how they function, interact with the natural environment, are connected with human society and social change, and are restored and managed.

The Program. The curriculum provides depth in the ecological and botanical sciences directed toward an integrated understanding of how communities and ecosystems function and how this knowledge assists in their management and restoration. Courses in environmental policy and law expose the students to the social drivers and constraints of ecosystem management. All students gain practical experience through traditional field courses and a required internship. Students may also pursue an Honors thesis in their senior year.

Career Alternatives. Graduates from this program are prepared to pursue a wide range of careers, including positions in ecological restoration and ecosystem management; rangeland and reserve management; environmental consulting; public, private, or non-profit agencies concerned with restoration and natural resource management; Cooperative Extension; teaching; information and communication services. Graduates are qualified to pursue advanced studies in fields such as ecology, agroecology, environmental studies, geography or weed science.

B.S. Major Requirements:

Preparatory Subject Matter .................................................. 51-61

<table>
<thead>
<tr>
<th>Subject</th>
<th>Prerequisite</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences 1A, 1B, 1C or 2A, 2B, 2C</td>
<td></td>
<td>14-15</td>
</tr>
<tr>
<td>Chemistry 2A, 2B</td>
<td></td>
<td>10</td>
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<tr>
<td>Physics 7A, 7B, 7C</td>
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<td>6-12</td>
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<tr>
<td>Mathematics 16A, 16B or Mathematics 17A, 17B or Mathematics 21A, 21B</td>
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<td>6-8</td>
</tr>
<tr>
<td>Plant Sciences 2</td>
<td></td>
<td>3</td>
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<tr>
<td>Plant Sciences 120</td>
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<tr>
<td>Soil Science 100</td>
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<td>5</td>
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<tr>
<td>Plant Sciences 101 or Environmental Science and Policy</td>
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Depth Subject Matter .................................................. 60-80

<table>
<thead>
<tr>
<th>Subject</th>
<th>Prerequisite</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Environmental Horticulture 160, 160L</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Plant Sciences 146 or Soil Science 105 or 111 or 112</td>
<td></td>
<td>5-35</td>
</tr>
<tr>
<td>Two courses chosen from Environmental Science and Policy 155, Plant Biology 117, 147, Plant Sciences 131, 144, Wildlife, Fish, and Conservation Biology 156, 157</td>
<td></td>
<td>6-8</td>
</tr>
<tr>
<td>Evolution and Ecology 100 or Plant Biology 102 or 108 or 116</td>
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<td>4-45</td>
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<tr>
<td>Plant Sciences 152 or Environmental Horticulture 150</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>Three courses chosen from Plant Sciences 130, 135, 150, Environmental Science and Policy 127, 155L, Wildlife, Fish, and Conservation Biology 154, 155</td>
<td></td>
<td>8-10</td>
</tr>
<tr>
<td>Plant Sciences 172</td>
<td></td>
<td>4</td>
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<tr>
<td>Environmental Science and Management 100, Geology 35, Hydrology 143, 147</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>Plant Sciences 171 or Environmental Horticulture 120</td>
<td></td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Units for the Major .......... 111-141

Major Adviser. T. P. Young

Advising Center for the major, including peer advising, is located in 1220 Plant and Environmental Sciences 530-752-1715.

Ecology

A Graduate Group

S. P. Lawler, Ph.D., Chairperson of the Group


Faculty

Gwen Arnold, Ph.D., Assistant Professor (Environmental Science and Policy)
Heidi L. Ballard, Ph.D., Associate Professor (School of Education)
Marissa L. Basket, Ph.D., Associate Professor (Environmental Science and Policy)
Alison M. Berry, Ph.D., Professor (Plant Sciences)
Robert L. Bettinger, Ph.D., Professor (Anthropology)
Monique Borgerhoff Mulder, Ph.D., Professor (Anthropology)
Louis W. Botzfeld, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Walter M. Boyce, Ph.D., Professor (Pathology, Microbiology, and Immunology)
Patrick C. Broxton, Ph.D., Professor (Plant Sciences)
Mary Cadena, Ph.D., Associate Professor (Plant Sciences)
James Carey, Ph.D., Professor (Entomology)
Tim Cao, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Edward P. Caswell, Ph.D., Professor (Nematology)
Ernest S. Chang, Ph.D., Professor (Bodega Marine Laboratory)
Thomas Coombs-Hahn, Ph.D., Professor (Neurobiology, Physiology, and Behavior)
Anthony V. Cornel, Ph.D., Associate Professor (Entomology)
Howard V. Cornell, Ph.D., Professor Emeritus (Environmental Science and Policy)
Margaret Crofoot, Ph.D., Assistant Professor (Anthropology)
Randy A. Dahlgren, Ph.D., Professor (Land, Air and Water Resources)
Academic Senate Distinguished Teaching Award
Christyann M. Darwen, Ph.D., Associate Professor (Animal Science)
John M. Darvon, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Jonathan Eisen, Ph.D., Professor (Evolution and Ecology)
Deborah L. Ellington, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Holly Ernest, D.V.M., Ph.D., Associate Professor (Wildlife, Fish, and Conservation Biology)
Valerie E. Evine, Ph.D., Associate Professor (Plant Sciences)
Ivan C. Faloona, Ph.D., Assistant Professor (Wildlife, Fish, and Air Resources)
Nann A. Fangue, Ph.D., Assistant Professor (Wildlife, Fish Conservation Biology)
Y. Hossein Farzinnia, Ph.D., Professor (Environmental Science and Policy)
Howard Ferris, Ph.D., Professor (Nematology)
Albert Fischer, Ph.D., Professor (Plant Sciences)
Janet E. Foley, Ph.D., Professor (Ecological Management and Restoration)
Brian Gaylord, Ph.D., Associate Professor (Evolution and Ecology)
Shu Geng, Ph.D., Professor (Plant Sciences)
Paul Geps, Ph.D., Professor (Plant Sciences)
Matthew E. Gilbert, Ph.D., Assistant Professor (Environmental Science and Policy)
Steven E. Greco, Ph.D., Associate Professor (Environmental Science and Policy)
Richard Grossberg, Ph.D., Professor (Evolution and Ecology)
Susan L. Handy, Ph.D., Professor (Environmental Science and Policy)
Susan Harrison, Ph.D., Professor (Environmental Science and Policy)
Alan Hastings, Ph.D., Professor (Environmental Science and Policy)
Robert Hijmans, Ph.D., Associate Professor (Environmental Science and Policy)
Tessa Hill, Ph.D., Associate Professor (Geology)
Marcel Holyoak, Ph.D., Professor (Environmental Science and Policy)
William Horwath, Ph.D., Professor (Land, Air and Water Resources)
Benjamin Z. Houlton, Ph.D., Assistant Professor (Land, Air and Water Resources)
Silas S. O. Hung, Ph.D., Professor (Animal Science)
Louise J. Jackson, Ph.D., Professor (Land, Air and Water Resources)
Marie A. Jasienski, Ph.D., Associate Professor (Animal Science)
Emilio A. Laca, Ph.D., Professor (Plant Sciences)
Yufang Liu, Ph.D., Associate Professor (Environmental Science and Policy)
Richard Karban, Ph.D., Professor (Entomology)
Ermias Kebreab, Ph.D., Professor (Animal Science)
Douglas A. Keel, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Christine Krueger Johnson, Ph.D., Associate Professor (Wildlife, Fish Conservation Biology)
Dietmar Kuehl, Ph.D., Associate Professor (Animal Science)
Andrew Marshall, Ph.D., Professor (Anthropology)
John Largier, Ph.D., Professor (Environmental Science and Policy)
Andrew M. Latimer, Ph.D., Assistant Professor (Plant Sciences)
Sharon F. Lawler, Ph.D., Professor (Entomology)
Edwin E. Lewis, Ph.D., Professor (Nematology)
C. Y. Cynthia Lin, Ph.D., Associate Professor (Agricultural and Resource Economics, Environmental Science and Policy)
Mark Lubell, Ph.D., Professor (Environmental Science and Policy)
Jane Marshall, Ph.D., Associate Professor (Anthropology)
Brenda McCawan, Ph.D., Professor (Agricultural and Resource Economics, Environmental Science and Policy)
Michael R. Miller, Ph.D., Associate Professor (Animal Science)
Frank M. Mitloehner, Ph.D., Associate Professor (Animal Science)
Steven E. Morgan, Ph.D., Professor (Environmental Science and Policy, Bodega Marine Laboratory)
Peter B. Moyle, Ph.D., Professor (Wildlife, Fish, and Conservation Biology)
Steven A. Nadler, Ph.D., Professor (Nematology)
Gabielle Nevitt, Ph.D., Professor (Neurobiology, Physiology, and Behavior)
Debbie A. Niemer, Ph.D., Professor (Civil and Environmental Engineering)
Gregory Pasternack, Ph.D., Professor (Land, Air and Water Resources)
Gail L. Patrielli, Ph.D., Assistant Professor (Evolution and Ecology)
Kyaw Thaw Pau, U., Professor (Land, Air and Water Resources)


AGCH—American Culture; DD—Domestic Diversity; OL—Oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience.
### Courses in Ecology (ECL)

#### Graduate

200A. Principles and Applications of Ecology (5)
- Lecture—4 hours; discussion—1 hour. Prerequisite: first course in Ecology [e.g., Environmental Science and Policy (500)], Statistics 102, Mathematics 16B, 168 or consent of instructor; pass 1 open to graduate majors. Provides a broad background in the principles and applications of ecology, and serves as a foundation for advanced ecology. Topics include ecophysiology, behavioral ecology, population ecology, genetics and evolution. Emphasis on historical developments, current understanding, and real-world applications. [I.] Hynecek, Rice.

200B. Principles and Applications of Ecology (5)
- Lecture—4 hours; discussion—1 hour. Prerequisite: course 200A; pass 1 open to graduate majors. Principles and applications of ecology, focusing topically on the ecological community structure and functioning, its diversity patterns, ecosystem ecology and biogeochemistry, landscape ecology, biogeography, and phylogenetics. —II. [I.] Harrison.

201. Ecosystems and Landscape Ecology (4)
- Lecture—3 hours; discussion—1 hour. Prerequisite: courses 200A and 200B. Integration of concepts to understand and manage ecosystems in a complex and changing world. Emphasis on interactions among biotic, abiotic, and human factors and changes over space/time. Local to global controls over water, carbon, and nutrients across ecosystems/landscapes. GE credit: SciEng | SE—II. [II.] Cademasso, Evner.

203. Physiological Ecology (3)
- Lecture—3 hours. Prerequisites: Evolution and Ecology 101 or Environmental Studies 100; Neurobiology, Physiology, and Behavior 110 or Plant Biology 111 or Environmental Studies 129; elementary calculus. A comparative examination of several animal groups addressing fundamental physiological mechanisms that shape the ecology of each animal group. Offered in alternate years—II. Wainwright.

204. Population and Community Ecology (4)
- Lecture—3 hours; discussion—1 hour. Prerequisite: Environmental Studies 100 or Evolution and Ecology 101, Mathematics 21A-21B or consent of instructor; 22B recommended. Review of major concepts of population ecology and community ecology, with emphasis on the rationale of theory and use of theory as applied in the ecology of natural and managed systems. Offered in alternate years. —II. [I.] Harrison.

205. Community Ecology (4)
- Lecture—2 hours; discussion—2 hours. Prerequisites: Environmental Studies 100, Evolution and Ecology 101, or Plant Biology 117. Introduction to literature and contemporary research into processes structuring ecological communities. —II. Karban, Lawler.

- Lecture—3 hours, laboratory—4 hours. Prerequisite: introductory courses in statistics and plant ecology; consent of instructor: Principles and techniques of vegetation analysis, including structure, composition, and dynamics. Emphasis given to sampling procedures and association analysis, ordination, processes, and mechanisms of successions, and classification. Most techniques are demonstrated or conducted during field trips and laboratories. Offered in alternate years. —II. [I.] Hurtig.

207. Plant Population Biology (3)
- Lecture—2 hours; laboratory/discussion—1 hour. Prerequisite: advanced undergraduate ecology course [e.g., Environmental Science and Policy (100), Evolution and Ecology 100, or Plant Biology 117]. Advanced undergraduate course in genetics and/or evolution [e.g., Biological Sciences 101 or Evolution and Ecology 100]. Introduction to theoretical and empirical research in plant evolution and population genetics. —II. [I.] Cooney.
212A. Environmental Policy Process (4)
Lecture—3 hours; discussion—1 hour. Prerequisite:
course in public policy (e.g., Environmental Studies
160) or environmental law (e.g., Environmental Studies
161); course in bureaucratic theory (e.g.,
Political Science 187 or Environmental Studies 166);
course in statistics (e.g., Sociology 106 or Agri-
ultural and Resource Economics 106). Introduction
to selected topics in the policy process, applications
to the field of environmental policy. Discuss
developing critical reading skills, understanding of frameworks of the
policy process and political behavior, and an ability
to apply multiple frameworks to the same phenom-
enon. Offered in alternate years. (Same course as
Environmental Science and Policy 212A)—I.
Arnold, Lubell

212B. Environmental Policy Evaluation (4)
Lecture—1 hour; discussion—1 hour; seminar—2
hours. Prerequisite: intermediate microeconomics
(e.g., Economics 110B or Agricultural
and Resource Economics 106); policy analysis
(e.g., Environmental Studies 168A or the equivalent);
Agricultural and Resource Economics 176. Methods and
practices of policy analysis; philosophical and intel-
lectual bases of policy analysis and the political role
of policy analysis. (Same course as Environmental
Science and Policy 212B.) Offered in alternate years.
—(II) Springborn

213. Population, Environment, and Social Structure (4)
Seminar—3 hours; term paper. Prerequisite: at least
one course in population or human ecology, or in
environmental science and policy. Relationships among
population dynamics, resource scarcity and environ-
mental problems, and social structure; focus on
demographic content of global ecological models
and simulations, ecological content of modern
demographic theories, and debates about scarcity,
equality, and social conflict and change. Offered
in alternate years. (III)

214. Marine Ecology: Concepts and Practice (3)
Lecture—1 hour; discussion—1.5 hours; fieldwork—
1.5 hours. Prerequisite: graduate standing or one
course in ecology, one course in evolution or genet-
ics, or professional field experience or consent of instructor.
Survey course in marine ecology recommended. Critical review and
analysis of concepts and practices in modern marine ecology at the interface of several fields of study
including evolution, behavior, and physiology. Emphasis on critical thinking, problem solving,
and hands-on study. Three field trips required. —(III) Morgan

216. Ecology and Agriculture (4)
Lecture—3 hours. Prerequisite: Evolution and Ecology 11 or consent of instructor. Ecological
principles as relevant to agriculture. Integration of
ecological approaches into agricultural research to
increase ecosystem functions and services. Topics
include crop autoecology, biotic interactions among
crops and pests, ecosystem and landscape ecology.
Not open for credit to students who have completed Vegetable Crops 216. Offered in alternate years.—(I.) Jackson

217. Conservation and Sustainable Development in Third World Nations (4)
Lecture—3 hours; discussion—2 hours. Prerequisite:
at least one course from two of these three groups: (a) Environmental Studies 160, 161, 168A, 168B; (b)
Environmental Studies 101, 133, International Agricultural Development 103, Geog-
raphy 142; (c) Anthropology 126, 131, Geography 141, Sociology 144, 145A, 145B. Examination of
the patterns of resource ownership, control and man-
agement in agrarian or biologically diverse zones (fish-
eries, forests) and wildlands, with emphases on
conservation and sustainability. Comparison of
industrial democracies and poorer nations. (Same
course as International Development 217.) Offered in alternate years.—(III)

219. Ecosystem Biogeochemistry (4)
Lecture—3 hours; laboratory/discussion—2 hours.
Prerequisite: introductory courses in ecology/biol-
ogy and soils are recommended; undergraduates
accepted with consent of instructor. Multi-disciplinary
analysis of energy and nutrient transfers within tem-
poral and spatial scale, life-history traits and non-
linear dynamics. Topics vary. (Same course as
Soil Science 219.) Offered in alternate years.—(III)
Houlton

220. Spatio-Temporal Ecology (2)
Lecture—discussion—2 hours. Prerequisite: Popula-
tion Biology 200B or course 204 and Evolution and Ecology 104. Conservation and Policy
121 or consent of instructor. Spatial-temporal ecol-
ogy focusing on population persistence and
stability, predator-prey and host-parasitoid interac-
tions, species interactions, and species mainte-
nance, including effects of environmental variation,
spatial and temporal scale, life-history traits and non-
linear dynamics. Topics vary. (Same course as Pop-
ulation Biology 220.) May be repeated for credit. (S/U grading only.)—(III)

225. Terrestrial Field Ecology (4)
Seminar—1 hour; field work—12 hours. Prerequisite:
introductory ecology and introductory statistics
or consent of instructor. A field course conducted
over spring break and four weekends at Bodega
Bay, emphasizing student projects. Ecological
analysis of energy and nutrient transfers within ter-
restrial systems. Examination of processes and
inter-intra system interactions between the atmos-
pheric, biospheric, lithospheric, and hydrospheric.
Lecture/seminar uses biogeochemical simulation
models to examine case studies. (Same course as
Soil Science 219.) Offered in alternate years.—(III)
Houlton

231. Mathematical Methods in Population Biology (3)
Lecture—3 hours. Prerequisite: Mathematics 16C or 21C or the equivalent. Mathematical methods
used in population biology. Linear and nonlinear differ-
equation and differential equation models are
studied, using stability analysis and qualitative meth-
ods. Partial differential equation models are intro-
duced. Applications to population biology models
are stressed. (Same course as Population Biology 231.)—I. Hastings

232. Theoretical Ecology (3)
Lecture—3 hours. Prerequisite: course 204 or the equivalent and Mathematics 16C or 21C, or a course
of 100 or 121 or Evolution and Ecology 101,
and a strong mathematics background (Mathematics
22A-22B-22C or the equivalent). Examination of
major conceptual and methodological issues in theo-
etical ecology. Model formulation and development
will be emphasized. Topics will vary from year to
year. May be repeated for credit. Offered in alternate
years.—(III) Hastings

233. Computational Methods in Population Biology (3)
Lecture/laboratory—2 hours; discussion/labora-
tory—1 hour. Prerequisite: A course in theoretical
ecology (e.g., course 231 or an equivalent to Envi-
ronmental Science and Policy 121 from your under-
graduate institution) or consent of instructor; no
programming experience required. Numerical meth-
ods for simulating population dynamics using the
computational software package R. Emphasis placed
on model formulation and development, theo-
etical concepts and philosophical principles to
guide simulation efforts, model parameterization,
and implementing simulations with R. (Same course as Population Biology 233.) Offered in alternate
years. (S/U grading only.)—(I) Basket, Schreib

240. Current Anthropology Journal Editorial Workshop (4)
Workshop—1 hour; independent study—2 hours.
Students must enroll for all three quarters. Reading
and offering workshop critiques of manuscripts sub-
mitted for publication, and reading and discussion
discussions of other relevant work in ecology and human
ecology. Track and edit published articles and
authors’ replies that accompany major features. Par-
ticipation in the development of new sections for the
editorial board of the journal. Limited
enrollment. (Same course as Population and Reproduction 242.)—II. (III) Ernt

271. Research Conference in Ecology (1)
Seminar—1 hour. Prerequisite: consent of instructor.
Critical presentation and evaluation of current litera-
ture and ongoing research in ecology. Requirements
include active participation in weekly discussions
and the presentation of a paper or chapter once per quarter.
May be repeated for credit. (Same course as Population Biology 271.) (S/U grading only.)—I,
II, III. (II, III) Schoener, Schreib

280. Current Anthropology Journal Workshop (4)
Seminar—1 hour; independent study—2 hours.
Students must enroll for all three quarters. Reading
and offering workshop critiques of manuscripts sub-
mitted for publication, and reading and discussion
discussions of other relevant work in ecology and human
ecology. Track and edit published articles and
authors’ replies that accompany major features. Par-
ticipation in the development of new sections for the
editorial board of the journal. Limited
enrollment. (Same course as Anthropology 280.) May be repeated for 12
units of credit with consent of instructor. (S/U grading only.)—I, II, III

290. Seminar in Ecology (1-4)
Seminar—1-4 hours. Prerequisite: consent of instruc-
tor. Topics in ecology. Students are expected to pres-
ent oral seminars on a particular aspect of the general
topic under consideration. (S/U grading only.)—I,
II, III (II, III)

296. Topics in Ecology and Evolution (1)
Seminar—1 hour. Prerequisite: graduate standing.
Seminars presented by visiting lecturers, UC Davis
faculty, and graduate students. May be repeated for credit. (Same course as Ecology 296.) (S/U grading only.)—I,
II, III (II, III)

297. Tutoring in Ecology (1-4)
Lecture—1 hour; discussion—1 hour. Prerequisite:
graduate standing in ecology; consent of instructor.
Teaching ecology through individual tutoring of student
discussion groups for regular departmental courses under direct
guidance of staff. May be repeated for credit. (S/U grading only.)

Quarter Offered: Fall—II, Winter—III, Spring—IV, Summer—2015, 2016 offering in parent
2015-2016 offering in parent
Pre-Fall 2011 General Education (GE): AH—Arts and Humanities; Div—Diverse; SS—Social Sciences, Div—Diverse-
ity, Writing Experience
Fall 2011 and on Revised General Education (GE): AH—Arts and Humanities; SS—Science and Engineering; Div—Diverse
AAG—American Cultures, DD—Diverse, DL—Oral Skills, DL—Quantitative, SL—Social Science, VL—Visual, WC—World Cultures, WE—Writing Experience

Ecology (A Graduate Group) 231
Economics

A.B. Major Requirements:

Preparatory Subject Matter ............... 17-20
Economics 1A-1B ................................. 8
Statistics 13, 32, or 102 ....................... 3-4
Mathematics 16A-16B or 21A-21B .......... 6-8

Depth Subject Matter ......................... 44
Economics 100, 101 .............................. 8
Economics 102 ................................. 12
One course from: Economics 110A, 110B,
111A, 111B ................................. 4
Select 16 units from Economics 103, 106,
116, 121A, 121B, 122, 125, 130, 131,
132, 134 (or Agricultural Economics
171A), 135, 136, 137, 140 (or
Agricultural and Resource Economics 106),
145, 151A, 151B, 152, 160A, 160B,
194HA, 194HB, Agricultural and
Resource Economics 139, 156, 175, 176 .... 16
Additional upper division Economics
courses .................................. 12

Total Units for the Major ............... 61-64

Recommended. Students considering graduate
study in economics are strongly urged to take Mathe-
matics 21A-21B-21C and 22A.

The Economics Department suggests that Economics
100 and 101 be taken as soon as possible after the
introductory courses.

Major Advisers. Contact Department office.

Minor Program Requirements:

Economics ....................................... 20
Economics 100, 101 .............................. 8
Select 8 units from Economics 103, 106,
116, 121A, 121B, 122, 125, 130, 131,
132, 134 (or Agricultural and Resource
Economics 171A), 135, 136, 137, 140 (or
Agricultural and Resource Economics 106),
145, 151A, 151B, 152, 160A, 160B,
194HA, 194HB, Agricultural and
Resource Economics 139, 156, 175, 176 .... 8
Select 4 units from upper division Economics
courses ................................. 4

Preparation. Economics 1A and 1B; Statistics 13,
32, or 102; Mathematics 16A and 16B or 21A and
21B. Mathematics 16A and 16B or 21A and
21B should be completed before taking Economics 100
and 101. Students need to complete Economics 100 and
101 before taking the advanced courses.

Course Limits. Except under extraordinary circum-
stances, not more than two economics courses
should be taken in any one term. In special cases,
the department will accept a limited number of
related upper division courses from other depart-
ments in satisfaction of the economics upper division
course requirements. Approval from a departmental
adviser is required in all such cases.

Graduation with High or Highest Honors. To
be eligible for departmental recommendation for
High or Highest Honors in Economics at graduation,
a student must take all economics department courses in
Economics for a letter grade, earn at least a 3.50
grade point average in those courses, and complete
at least eight units of course work that result in the
submission of a thesis or project. Consult the College
of Letters and Science section of this catalog and
contact the Department for more information.

Study Abroad. The economics department wishes
to accommodate students who would like to comple-
te their economics degrees with a study abroad
experience. Up to 20 units of upper division credit
from foreign campuses (excluding Economics 100
and 101) may be used towards the completion of
the degree. To ensure that foreign credits will apply
towards the economics degree, students need to
select courses from the pre-approved list at the UC
Davis Study Abroad office or seek pre-approval in the
economics department for the foreign courses
they wish to complete.

Graduate Study. Students who meet the admis-
sion requirements of Graduate Studies and the
Department of Economics may pursue studies lead-
ing to the M.A. and Ph.D. degrees. Fields of specializa-
tion for graduate study include: Economic Theory,
Monetary Economics, Economic Development, Eco-
nomics History, International Economics, Labor Eco-
nomics, Industrial Organization, Economic Systems,
Public Finance, Mathematical Economics, and Quan-
titative Methods (Econometrics). For information on
admission to graduate study, degree requirements,
and financial aid, consult the Graduate Announce-

Graduate Advisers. Contact Department office.

American History and Institutions. This Uni-
versity requirement can be satisfied by completion of
Economics 111A, 111B; see also under University
requirements.

Courses in Economics (ECN)

Lower Division

1A. Principles of Microeconomics (4)
Lecture—3 hours; discussion—1 hour. Course 1A
and 1B may be taken in either order. Analysis of the
allocation of resources and distribution of
income through a price system; competition and
monopoly; the role of public policy; comparative economic sys-
tems. GE credit: SocSci | ACHG, QL, SL ...... I, II, III,
I, II, II, II

1B. Principles of Macroeconomics (4)
Lecture—3 hours; discussion—1 hour. Course 1A
and 1B may be taken in either order. Analysis of the
economy as a whole; determinants of the level of
income, employment, and prices; money and bank-
ing, economic fluctuations, international trade, eco-
nomic development; the role of public policy. GE
credit: GE credit: SocSci | ACHG, QL, SL ...... I, II, III,
I, II, II, II

90X. Lower Division Seminar (1-2)
Seminar—1-2 hours. Prerequisite: lower division
standing and consent of instructor. Examination of
a special topic in Economics through shared readings,
discussions, and written assignments. May not be
repeated for credit. Limited enrollment.

92. Internship and Field Work (1-12)
Internship—3-36 hours; term paper. Prerequisite:
junior or senior standing; availability of internship
places; or approved field work project; stock-brok-
ergage interns must have completed Management
11A-11B; consent of instructor. Intensive study of
practical application of concepts in economics,
stressing research methods and empirical analysis.
(P/NP grading only)

98. Group Study for Undergraduates (1-5)
Prerequisite: consent of instructor. For primar-
ily lower division students. (P/NP grading only)

99. Individual Study for Undergraduates (1-12)
Prerequisite: consent of instructor. (P/NP grading only)

Upper Division

100. Intermediate Micro Theory (4)
Lecture—3 hours; discussion—1 hour. Prerequisite:
course 1A, 1B; Mathematics 16A-16B or 21A-21B
with grade of C- or better in each. Price and distribu-
tion theory under conditions of perfect and imperfect
competition. General equilibrium and welfare eco-

Quarter Offered: I-Fall, II-Winter, III-Spring, IV-Summer; 2015-2016 offering in parentheses.