# ECOLOGY CONCENTRATION

## Ecology Levels
Select from the following: 12
- **BIO 442** Behavioral Ecology
- **BIO 444** Population Ecology
- **BIO 445** Community Ecology
- **BIO 446** Ecosystem Ecology

## Systems and Applications
Select from the following: 12
- **BIO 327** Wildlife Ecology
- **BIO 401** Principles of Conservation Biology
- **BIO 415** Biogeography
- **BOT 326** Plant Ecology
- **MSCI 328** Marine Ecology

## Biodiversity Courses
Select from the following: 4
- **BIO 321** Mammalogy
- **BIO 322** Ichthyology
- **BIO 323** Ornithology
- **BIO 324** Herpetology
- **BIO 329** Vertebrate Field Zoology
- **BIO 335** General Entomology
- **BIO 336** Invertebrate Zoology
- **BIO 429** Parasitology
- **BOT 313** Taxonomy of Vascular Plants
- **MCRO 224** General Microbiology I
- **MSCI 328** Marine Ecology
- **MSCI 437** Marine Botany
- **MSCI 439** Fisheries Science and Resource Management
- **MSCI 440** Communicating Ocean Sciences to Informal Audiences

## Ecology Electives
Select from the following: 7
- **BIO 321** Mammalogy
- **BIO 322** Ichthyology
- **BIO 323** Ornithology
- **BIO 324** Herpetology
- **BIO 327** Wildlife Ecology
- **BIO 329** Vertebrate Field Zoology
- **BIO 330** Extended Field Biology Activity
- **BIO 335** General Entomology
- **BIO 336** Invertebrate Zoology
- **BIO 361** Principles of Animal Physiology
- **BIO 400** Special Problems for Advanced Undergraduates
- **BIO 401** Principles of Conservation Biology
- **BIO 415** Biogeography
- **BIO 419** Analytical Methods in Ecology
- **BIO/NR/SS 421** Wetlands
- **BIO 427** Wildlife Management
- **BIO 429** Parasitology
- **BIO 434** Environmental Physiology
- **BIO 435** Plant Physiology
- **BIO/CHEM 441** Bioinformatics Applications
- **BIO 442** Behavioral Ecology

## Approved Electives
Select from the following: 8
- **BIO 444** Population Ecology
- **BIO 445** Community Ecology
- **BIO 446** Ecosystem Ecology
- **BIO 461** Senior Project - Research Proposal
- **BIO 462** Senior Project - Research
- **BIO 463** Honors Research
- **BIO 472** Current Topics in Biological Research
- **BIO/CHEM 475** Molecular Biology Laboratory
- **BOT 311** Plants, People and Civilization
- **BOT 313** Taxonomy of Vascular Plants
- **BOT 326** Plant Ecology
- **BOT 433** Field Botany: California Plant Diversity
- **MCRO 224** General Microbiology I
- **MCRO 424** Microbial Physiology
- **MCRO 436** Microbial Ecology
- **MSCI 328** Marine Ecology
- **MSCI 437** Marine Botany
- **MSCI 439** Fisheries Science and Resource Management
- **MSCI 440** Communicating Ocean Sciences to Informal Audiences
- **AG/EDES/ENGR/GEOG/ISLA/SCM/UNIV 350** The Global Environment
- **BIO 321** Mammalogy
- **BIO 322** Ichthyology
- **BIO 323** Ornithology
- **BIO 324** Herpetology
- **BIO 327** Wildlife Ecology
- **BIO 329** Vertebrate Field Zoology
- **BIO 330** Extended Field Biology Activity
- **BIO 335** General Entomology
- **BIO 336** Invertebrate Zoology
- **BIO 361** Principles of Animal Physiology
- **BIO 400** Special Problems for Advanced Undergraduates
- **BIO 401** Principles of Conservation Biology
- **BIO 415** Biogeography
- **BIO 419** Analytical Methods in Ecology
- **BIO/NR/SS 421** Wetlands
- **BIO 427** Wildlife Management
- **BIO 429** Parasitology
- **BIO 434** Environmental Physiology
- **BIO 435** Plant Physiology
- **BIO/CHEM 441** Bioinformatics Applications
- **BIO 442** Behavioral Ecology
- **BIO 444** Population Ecology
- **BIO 445** Community Ecology
- **BIO 446** Ecosystem Ecology
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 461</td>
<td>Senior Project - Research Proposal 4, 5</td>
</tr>
<tr>
<td>BIO 462</td>
<td>Senior Project - Research 4, 5</td>
</tr>
<tr>
<td>BIO 463</td>
<td>Honors Research 5</td>
</tr>
<tr>
<td>BIO 472</td>
<td>Current Topics in Biological Research 5</td>
</tr>
<tr>
<td>BIO/CHEM 475</td>
<td>Molecular Biology Laboratory</td>
</tr>
<tr>
<td>BOT 311</td>
<td>Plants, People and Civilization</td>
</tr>
<tr>
<td>BOT 313</td>
<td>Taxonomy of Vascular Plants</td>
</tr>
<tr>
<td>BOT 326</td>
<td>Plant Ecology</td>
</tr>
<tr>
<td>BOT 433</td>
<td>Field Botany: California Plant Diversity</td>
</tr>
<tr>
<td>ENGR 322/SCM 302</td>
<td>The Learn By Doing Lab Teaching Practicum 5</td>
</tr>
<tr>
<td>ERSC/GEOG 250</td>
<td>Physical Geography</td>
</tr>
<tr>
<td>GEOG 440</td>
<td>Advanced-Applications in GIS</td>
</tr>
<tr>
<td>LA/NR 218</td>
<td>Applications in GIS</td>
</tr>
<tr>
<td>or GEOG 318</td>
<td>Applications in GIS</td>
</tr>
<tr>
<td>MCRO 224</td>
<td>General Microbiology I 6</td>
</tr>
<tr>
<td>MCRO 424</td>
<td>Microbial Physiology</td>
</tr>
<tr>
<td>MCRO 436</td>
<td>Microbial Ecology</td>
</tr>
<tr>
<td>MSCI 328</td>
<td>Marine Ecology</td>
</tr>
<tr>
<td>MSCI 437</td>
<td>Marine Botany</td>
</tr>
<tr>
<td>MSCI 439</td>
<td>Fisheries Science and Resource Management</td>
</tr>
<tr>
<td>MSCI 440</td>
<td>Communicating Ocean Sciences to Informal Audiences</td>
</tr>
<tr>
<td>NR 418</td>
<td>Applied GIS</td>
</tr>
<tr>
<td>SS 121</td>
<td>Introductory Soil Science</td>
</tr>
<tr>
<td>SS 321</td>
<td>Soil Morphology</td>
</tr>
<tr>
<td>SS 322</td>
<td>Soil Plant Relationships</td>
</tr>
<tr>
<td>SS 422</td>
<td>Soil Ecology</td>
</tr>
<tr>
<td>STAT 313</td>
<td>Applied Experimental Design and Regression Models</td>
</tr>
<tr>
<td>STAT 419</td>
<td>Applied Multivariate Statistics</td>
</tr>
</tbody>
</table>

Total units 43

1 Excess units will be applied to subsequent concentration electives.
2 Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.
3 Courses taken to meet a major or support requirement cannot be double-counted as an elective.
4 If BIO 461 or BIO 462 is used to meet the Senior Project Requirement, it cannot also be counted as an Elective.
5 Maximum of 6 units may be applied toward Approved Electives from "by arrangement" courses: BIO 400, BIO 461, BIO 462, BIO 463, BIO 472, ENGR 322/SCM 302.
6 Recommended for students interested in health science careers.