## ECOLOGY CONCENTRATION

### Ecology Levels

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

### Systems and Applications

Select from the following:  
- 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:  
- 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
- MSCI 221 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:  
- 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 II
- MCRO 424 Microbial Physiology
- MCRO 436 Microbial Ecology
- MSCI 328 Marine Ecology
- MSCI 437 Marine Botany
- MSCI 440 Communicating Ocean Sciences to Informal Audiences

### Approved Electives

Select from the following:  
- 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</td>
</tr>
<tr>
<td>BIO 462</td>
<td>Senior Project - Research</td>
</tr>
<tr>
<td>BIO 463</td>
<td>Honors Research</td>
</tr>
<tr>
<td>BIO 472</td>
<td>Current Topics in Biological Research</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</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 or GEOG 318</td>
<td>Applications in GIS</td>
</tr>
<tr>
<td>MCRO 224</td>
<td>General Microbiology I</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.