This option is offered within the following major(s):


The Biology major Ecology option is designed to provide students with a strong background in the theory and applications of ecology and environmental studies. It couples the core biological sciences background from the Biology major with required ecology, conservation, field methods, and environmental policy course work. A variety or upper-division ecology and organismal biology electives can be chosen based on individual interests. Undergraduate research and internship experience are strongly recommended for option students, and three credits can be applied to the Electives. The Ecology option provides excellent preparation for graduate programs in ecology.

Options in the Biology major require 15 or fewer additional credits (one term) beyond the basic Biology major, and most students can complete the additional Ecology option course work in four years. Courses used to satisfy the Ecology option requirements also satisfy the Biology and Society, Organismal Biology, Physiology, Writing Intensive Course and Upper-division Science Elective requirements for the Biology major.

It is recommended that Ecology option students take ST 411 METHODS OF DATA ANALYSIS and ST 412 METHODS OF DATA ANALYSIS in place of ST 352 INTRODUCTION TO STATISTICAL METHODS for the major statistics requirement.

Several Ecology option courses may also be used to satisfy areas of the baccalaureate core, and it is recommended that students take COMM 111 for the major communications requirement.

For further information, see MyDegrees or the Integrative Biology website at http://ib.oregonstate.edu.

### Code | Title | Hours
--- | --- | ---
**Plant Organismal Biology**
Select one of the following: 4
- BOT 321 | PLANT SYSTEMATICS | 
- BOT 416 | AQUATIC BOTANY | 
- RNG 353 | WILDLAND PLANT IDENTIFICATION | 

**Animal Organismal Biology**
Select one of the following: 4-5
- Z 361 | INVERTEBRATE BIOLOGY | 
- Z 371 | VERTEBRATE BIOLOGY | 
- Z 477 | AQUATIC ENSINOLOGY | 
- & Z 362 | INVERTEBRATE BIOLOGY LABORATORY | 
- & Z 372 | VERTEBRATE BIOLOGY LABORATORY |

**Ecological Methods/ Writing Intensive Course (WIC)**
BI 371 | *ECOLOGICAL METHODS | 3
or BI 375 | *FIELD METHODS IN MARINE ECOLOGY | 

**Behavior and Physiological Ecology**
Z 350 | ANIMAL BEHAVIOR | 3
Z 423 | ENVIRONMENTAL PHYSIOLOGY | 3
or BOT 488 | ENVIRONMENTAL PHYSIOLOGY OF PLANTS |

### Population Ecology
Select one of the following: 3-4
- BI 483 | POPULATION BIOLOGY |
- BOT 442 | PLANT POPULATION ECOLOGY |
- FW 320 | INTRODUCTORY POPULATION DYNAMICS |

### Community and Ecosystem Ecology
Select one of the following: 3-5
- BI 306 | **ENVIRONMENTAL ECOLOGY |
- BI 351 | MARINE ECOLOGY |
- BI 481 | BIOGEOGRAPHY |
- FES 341 | FOREST ECOLOGY |
- FW 321 | APPLIED COMMUNITY AND ECOSYSTEM ECOLOGY |
- FW 456 | FRESHWATER ECOLOGY AND CONSERVATION |
- FW 479 | WETLANDS AND RIPARIAN ECOLOGY |
- GEO 484 | INTRODUCTION TO BIOGEOCHEMISTRY |
- OC 434 | ESTUARINE ECOLOGY |
- or FW 434 | ESTUARINE ECOLOGY |

### Conservation and Human Impacts
Select one of the following: 3
- BI 301 | *HUMAN IMPACTS ON ECOSYSTEMS |
- BI 348 | *HUMAN ECOLOGY |
- Z 349 | *BIODIVERSITY: CAUSES, CONSEQUENCES, AND CONSERVATION |

### Environmental Policy
Select one of the following: 3-4
- AEC 250 | *INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY |
- AEC 253 | *ENVIRONMENTAL LAW, POLICY, AND ECONOMICS |
- AEC 351 | *NATURAL RESOURCE ECONOMICS AND POLICY |
- AEC 352 | *ENVIRONMENTAL ECONOMICS AND POLICY |
- or ECON 352 | *ENVIRONMENTAL ECONOMICS AND POLICY |
- FES 435 | *GENES AND CHEMICALS IN AGRICULTURE: VALUE AND RISK |
- or TOX 435 | *GENES AND CHEMICALS IN AGRICULTURE: VALUE AND RISK |
- FES 485 | *CONSENSUS AND NATURAL RESOURCES |
- FOR 462 | NATURAL RESOURCE POLICY AND LAW |
- FW 350 | *ENDANGERED SPECIES, SOCIETY AND SUSTAINABILITY |
- FW 415 | FISHERIES AND WILDLIFE LAW AND POLICY |
- PS 475 | ENVIRONMENTAL POLITICS AND POLICY |

**Upper-division Electives**
Select two of the following or one of the following and 3 experiential learning credits: 6-8

Track I. Ecology Elective Course(s)
Select one or two of the following:
- BI 358 | SYMBIOSES AND THE ENVIRONMENT |
- BI 375 | FIELD METHODS IN ECOLOGICAL RESTORATION (taught at Cascades) |
- BI 421 | AQUATIC BIOLOGICAL INVASIONS |
- or FW 421 | AQUATIC BIOLOGICAL INVASIONS |
- BI 427 | PALEOBIOLOGY |
### Ecology Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BI 481</td>
<td>BIOGEOGRAPHY (if not taken above)</td>
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<tr>
<td>BI 483</td>
<td>POPULATION BIOLOGY (if not taken above)</td>
</tr>
<tr>
<td>BI 495</td>
<td>DISEASE ECOLOGY</td>
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<tr>
<td>BOT 341</td>
<td>PLANT ECOLOGY</td>
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<tr>
<td>CH 390</td>
<td>ENVIRONMENTAL CHEMISTRY</td>
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<tr>
<td>ENT 420</td>
<td>INSECT ECOLOGY</td>
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<tr>
<td>FES 440</td>
<td>WILDLAND FIRE ECOLOGY</td>
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<tr>
<td>FES 452</td>
<td>BIODIVERSITY CONSERVATION IN MANAGED FORESTS or FW 452</td>
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<tr>
<td>or FW 452</td>
<td>BIODIVERSITY CONSERVATION IN MANAGED FORESTS</td>
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<tr>
<td>or FW 458</td>
<td>MAMMAL CONSERVATION AND MANAGEMENT</td>
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<tr>
<td>or HORT 318</td>
<td>APPLIED ECOLOGY OF MANAGED ECOSYSTEMS</td>
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<td>FES 445</td>
<td>ECOLOGICAL RESTORATION</td>
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<td>FW 462</td>
<td>ECOSYSTEM SERVICES</td>
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<td>MB 448</td>
<td>MICROBIAL ECOLOGY</td>
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<td>ST 435</td>
<td>QUANTITATIVE ECOLOGY</td>
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<tr>
<td>Z 475</td>
<td>INSECT BIODIVERSITY SURVEY</td>
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#### Track II. Experiential Learning Credits

Select any combination of 3 credits of the following if taking only one course above:

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BI 401</td>
<td>RESEARCH AND SCHOLARSHIP (by approval)</td>
</tr>
<tr>
<td>BI 406</td>
<td>PROJECTS: CURATORIAL ASSISTANT (by approval)</td>
</tr>
<tr>
<td>BI 410</td>
<td>INTERNSHIP (by approval or international internships approved by the Biology Chief Advisor)</td>
</tr>
</tbody>
</table>

**Total Hours**: 35-42

* Baccalaureate Core Course (BCC)  
* Writing Intensive Course (WIC)

**Option Code**: 715