ECOLOGY OPTION

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.

Option Code: 715

Options in the Biology major require 15 of 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 Experiential Learning or Integrative Biology Elective requirements for the Biology major.

It is recommended that Ecology option students take ST 411 and ST 412 in place of ST 352 for the major statistics requirement.

Several Ecology option courses may also be used to satisfy areas of the baccalaureate core.

For further information, see MyDegrees or the Integrative Biology website (http://lib.oregonstate.edu).

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

**Animal Organismal Biology**
Select one course from the following: 4-5
- Z 361 INVERTEBRATE BIOLOGY
- Z 362 and INVERTEBRATE BIOLOGY LABORATORY
- Z 371 VERTEBRATE BIOLOGY
- Z 372 and VERTEBRATE BIOLOGY LABORATORY
- Z 477 AQUATIC ENTOMOLOGY

**Ecological Methods/Writing Intensive Course (WIC)**

Bi 371 *ECOLOGICAL METHODS
or Bi 373 *FIELD METHODS IN MARINE ECOLOGY 3

**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 course from the following: 3-4

Bi 483 POPULATION BIOLOGY

Bi 442 PLANT POPULATION ECOLOGY

FW 320 INTRODUCTORY POPULATION DYNAMICS

### Community and Ecosystem Ecology

Select one course from the following: 3-5

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>BI 306</td>
<td><strong>ENVIRONMENTAL ECOLOGY</strong></td>
</tr>
<tr>
<td>BI 351</td>
<td>MARINE ECOLOGY</td>
</tr>
<tr>
<td>BI 353</td>
<td>PACIFIC NORTHWEST COASTAL ECOSYSTEMS</td>
</tr>
<tr>
<td>BI 481</td>
<td>BIOGEOGRAPHY</td>
</tr>
<tr>
<td>FES 341</td>
<td>FOREST ECOLOGY</td>
</tr>
<tr>
<td>FW 321</td>
<td>APPLIED COMMUNITY AND ECOSYSTEM ECOLOGY</td>
</tr>
<tr>
<td>FW 456</td>
<td>FRESHWATER ECOLOGY AND CONSERVATION</td>
</tr>
<tr>
<td>FW 479</td>
<td>WETLANDS AND RIPARIAN ECOLOGY</td>
</tr>
<tr>
<td>GEO 484</td>
<td>INTRODUCTION TO BIOGEOCHEMISTRY</td>
</tr>
<tr>
<td>OC 434/FW 434</td>
<td>ESTUARINE ECOLOGY</td>
</tr>
</tbody>
</table>

### Conservation and Human Impacts

Select one course from the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BI 301</td>
<td>*HUMAN IMPACTS ON ECOSYSTEMS</td>
</tr>
<tr>
<td>BI 348</td>
<td>*HUMAN ECOLOGY</td>
</tr>
<tr>
<td>Z 349</td>
<td>*BIODIVERSITY: CAUSES, CONSEQUENCES, AND CONSERVATION</td>
</tr>
</tbody>
</table>

### Environmental Policy

Select one course from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>AEC 250</td>
<td>*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY</td>
</tr>
<tr>
<td>AEC 253</td>
<td>*ENVIRONMENTAL LAW, POLICY, AND ECONOMICS</td>
</tr>
<tr>
<td>AEC 351</td>
<td>*NATURAL RESOURCE ECONOMICS AND POLICY</td>
</tr>
<tr>
<td>AEC 352/ECON 352</td>
<td>*ENVIRONMENTAL ECONOMICS AND POLICY</td>
</tr>
<tr>
<td>FES 435/TOX 435</td>
<td>*GENES AND CHEMICALS IN AGRICULTURE: VALUE AND RISK</td>
</tr>
<tr>
<td>FES 485</td>
<td>*CONSSENSUS AND NATURAL RESOURCES</td>
</tr>
<tr>
<td>FW 350</td>
<td>*ENDANGERED SPECIES, SOCIETY AND SUSTAINABILITY</td>
</tr>
</tbody>
</table>

### Experiential Learning or Ecology Elective Courses

Select both tracks or two courses from Track II: 6-8

**Track I Experiential Learning Credits**

Select any combination of three credits from the following:

- BI 401 RESEARCH AND SCHOLARSHIP (by approval)
- BI 406 PROJECTS: CURATORIAL ASSISTANT (by approval)
- BI 410 INTERNSHIP (by approval or international internships approved by the Integrative Biology Lead Advisor)

**Track II Ecology Elective**

Select any combination of three credits from the following:

- BI 353 PACIFIC NORTHWEST COASTAL ECOSYSTEMS (if not taken above)
- BI 358 SYMBOBIES AND THE ENVIRONMENT
- BI 375 FIELD METHODS IN ECOLOGICAL RESTORATION (taught at OSU Cascades)
- BI 427 PALEOBIOLOGY
- BI 481 BIOGEOGRAPHY (if not taken above)
- BI 485 MONSTER BIOLOGY
- BI 495 DISEASE ECOLOGY
- BOT 341 PLANT ECOLOGY
- BOT 458 ECOSYSTEMS GENOMICS
- CH 390 ENVIRONMENTAL CHEMISTRY
- FES 440 WILDLAND FIRE ECOLOGY
- FES 452/FW 452 BIODIVERSITY CONSERVATION IN MANAGED ECOSYSTEMS
- or FW 458 MAMMAL CONSERVATION AND MANAGEMENT
- or HORT 318 *APPLIED ECOLOGY OF MANAGED ECOSYSTEMS
- FES 445/FW 445 ECOCLOGICAL RESTORATION
- FW 421 AQUATIC BIOLOGICAL INVASIONS
- FW 462 ECOSYSTEM SERVICES
- MB 448 MICROBIAL ECOLOGY
- ST 435 QUANTITATIVE ECOLOGY

**Total Hours**: 35-42
Ecology Option

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

Option Code: 715