Environmental Sciences Undergraduate Major (BS, HBS)

Also available via Ecampus.

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Environmental Sciences
An Environmental Sciences undergraduate degree provides a rigorous education that can lead to helping to understand and resolve some of today's most challenging scientific and policy issues—including global climate change, pollution, biodiversity conservation, sustainability, and balancing resource use and preservation. To help reach these objectives, the Bachelor of Science in Environmental Sciences offers an interdisciplinary approach to environmental problem solving. As an Environmental Sciences major, a student completes course work in four general areas:

1. OSU's general education courses (the baccalaureate core)
2. Basic science and math
3. Environmental sciences and humanities core
4. A specialization area

In addition, each student completes a minimum of 3 credits of experiential learning as an internship, research, study abroad, or field course. The BS degree in Environmental Sciences provides excellent training for a variety of careers—including work with federal, state, and local agencies, industry, non-profits, and education—or for graduate school. Students can pursue the BS degree either at the Corvallis campus or online through OSU Ecampus.

Major Curriculum
The Environmental Sciences major requires credits in seven categories: 48 credits of baccalaureate core; 51–53 credits of basic science and math; 27–36 credits of environmental sciences and humanities; 27–31 credits of specialization; 3 credits writing intensive course; 3 credits minimum of experiential learning; and 4–53 credits of elective courses (depends on the number of baccalaureate core electives that will also meet requirements of the major).

Baccalaureate Core
The university baccalaureate core course (BCC) requirement is met with 48 credits and a writing intensive course (WIC). The environmental sciences student satisfies the general education requirement by selecting from the general list of approved courses and the restrictive list of BCC courses, which simultaneously satisfy requirements for the Environmental Sciences major. The WIC and Synthesis requirements are satisfied by courses taken as part of the environmental sciences core curriculum.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Baccalaureate Core</td>
<td>Select 48 credits</td>
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<tr>
<td>Orientation</td>
<td>ENSC 101 ENVIRONMENTAL SCIENCES ORIENTATION</td>
<td>1</td>
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<tr>
<td>Basic Science and Math Courses</td>
<td>Select one of the following options:</td>
<td>12</td>
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<tr>
<td>Option A</td>
<td>BI 211 *PRINCIPLES OF BIOLOGY</td>
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<td>BI 212 *PRINCIPLES OF BIOLOGY</td>
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<td>BI 213 *PRINCIPLES OF BIOLOGY</td>
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<tr>
<td>Option B</td>
<td>BI 204 *INTRODUCTORY BIOLOGY I</td>
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<td>BI 205 *INTRODUCTORY BIOLOGY II</td>
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<td>BI 206 *INTRODUCTORY BIOLOGY III</td>
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<tr>
<td>Environmental Sciences and Humanities Core</td>
<td>Select one of the following:</td>
<td>8-10</td>
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<tr>
<td>Natural Environmental Systems</td>
<td>Select one of the following atmosphere courses:</td>
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<td>ATS 201 *CLIMATE SCIENCE</td>
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<td>ATS 310 *METEOROLOGY</td>
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<td>ATS 420 PRINCIPLES OF CLIMATE: PHYSICS OF CLIMATE AND CLIMATE CHANGE</td>
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<td>GEOG 323 *CLIMATOLOGY</td>
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<td>Select one biosphere course:</td>
<td>3</td>
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<td>BI 370 *ECOLOGY</td>
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<tr>
<td>Environmental Sciences and Humanities Core</td>
<td>Select one of the following geosphere courses:</td>
<td>3-4</td>
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<tr>
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<td>CSS 205 *SOIL SCIENCE</td>
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<td>GEO 202 *EARTH SYSTEMS SCIENCE</td>
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<td>GEO 221 *ENVIRONMENTAL GEOLOGY</td>
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<td>GEO 322 SURFACE PROCESSES</td>
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<td>GEOG 102 *PHYSICAL GEOGRAPHY</td>
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</table>
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GEOG 350  *GEOGRAPHY OF NATURAL HAZARDS
SOIL 205  SOIL SCIENCE
& SOIL 206  and *SOIL SCIENCE LABORATORY FOR SOIL 205
SOIL 395  *WORLD SOIL RESOURCES

Select one of the following hydrosphere courses: 3-5
FW 456  FRESHWATER ECOLOGY AND CONSERVATION
GEOG 340  *INTRODUCTION TO WATER SCIENCE AND POLICY
GEO 487  HYDROGEOLOGY
OC 201  *OCEANOGRAPHY

Humans and the Environment

Select one of the following economics courses: 3-4
AEC 250  *INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY
ECON 201  *INTRODUCTION TO MICROECONOMICS
ECON 202  *INTRODUCTION TO MACROECONOMICS
FW 462  ECOSYSTEM SERVICES

Select one of the following ethics and environmental ethics courses: 3-4
ANTH 481  *NATURAL RESOURCES AND COMMUNITY VALUES
CH 374  *TECHNOLOGY, ENERGY, AND RISK
ES 353  *ENVIRONMENTAL RACISM
ES 448  NATIVE AMERICAN PHILOSOPHIES
or PHIL 448  NATIVE AMERICAN PHILOSOPHIES
& REL 448  and NATIVE AMERICAN PHILOSOPHIES
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
FW 340  *MULTICULTURAL PERSPECTIVES IN NATURAL RESOURCES
GEO 309  *ENVIRONMENTAL JUSTICE
PHIL 325  *SCIENTIFIC REASONING
PHIL 439  PHILOSOPHY OF NATURE
PHIL 440  *ENVIRONMENTAL ETHICS
PHIL 443  *WORLD VIEWS AND ENVIRONMENTAL VALUES
or REL 443  *WORLD VIEWS AND ENVIRONMENTAL VALUES
PS 461  ENVIRONMENTAL POLITICAL THEORY
SOC 456  *SCIENCE AND TECHNOLOGY IN SOCIAL CONTEXT
SOC 480  *ENVIRONMENTAL SOCIOLOGY
SOC 481  *SOCIETY AND NATURAL RESOURCES
WGSS 440  *WOMEN AND NATURAL RESOURCES

Select one of the following human environment courses: 3-4
AG 301  *ECOSYSTEM SCIENCE OF PACIFIC NW INDIANS
BI 301  *HUMAN IMPACTS ON ECOSYSTEMS
BI 348  *HUMAN ECOLOGY
ENSC 479  **ENVIRONMENTAL CASE STUDIES
FW 325  *GLOBAL CRISIS IN RESOURCE ECOLOGY
GEO 308  *GLOBAL CHANGE AND EARTH SCIENCES
FW 470  *ECOLOGY AND HISTORY: LANDSCAPES OF THE COLUMBIA BASIN
GEOG 203  *HUMAN-ENVIRONMENT GEOGRAPHY
GEOG 300  *SUSTAINABILITY FOR THE COMMON GOOD
GEOG 431  GLOBAL RESOURCES AND DEVELOPMENT
GEOG 450  LAND USE IN THE AMERICAN WEST
HST 481  *ENVIRONMENTAL HISTORY OF THE UNITED STATES
SUS 102  *INTRODUCTION TO ENVIRONMENTAL SCIENCE AND SUSTAINABILITY
SUS 350  *SUSTAINABLE COMMUNITIES
WGSS 440  *WOMEN AND NATURAL RESOURCES
Z 349  *BIODIVERSITY: CAUSES, CONSEQUENCES, AND CONSERVATION

Select one of the following environmental law and policy: 3-4
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
AEC 432  ENVIRONMENTAL LAW
FOR 462  NATURAL RESOURCE POLICY AND LAW
FW 415  FISHERIES AND WILDLIFE LAW AND POLICY
FW 422  INTRODUCTION TO OCEAN LAW
GEOG 340  *INTRODUCTION TO WATER SCIENCE AND POLICY
PS 475  ENVIRONMENTAL POLITICS AND POLICY
PS 476  *SCIENCE AND POLITICS
PS 477  INTERNATIONAL ENVIRONMENTAL POLITICS AND POLICY
SOC 360  *POPULATION TRENDS AND POLICY
WGSS 440  *WOMEN AND NATURAL RESOURCES

Select one of the following environmental management courses: 3-4
BOT 413  FOREST PATHOLOGY
or FOR 413  FOREST PATHOLOGY
FES 350  URBAN FORESTRY
or HORT 350 URBAN FORESTRY
FES 355  MANAGEMENT FOR MULTIPLE RESOURCE VALUES
FES 365  *ISSUES IN NATURAL RESOURCES CONSERVATION
FES 412  FOREST ENTOMOLOGY
FES 445  ECOLOGICAL RESTORATION
or FW 445  ECOLOGICAL RESTORATION
FOR 346  TOPICS IN WILDLAND FIRE
FW 251  PRINCIPLES OF FISH AND WILDLIFE CONSERVATION
FW 323  MANAGEMENT PRINCIPLES OF PACIFIC SALMON IN THE NORTHWEST
FW 326  INTEGRATED WATERSHED MANAGEMENT
FW 435  *WILDLIFE IN AGRICULTURAL ECOSYSTEMS
FW 464  MARINE CONSERVATION BIOLOGY
GEO 306  *MINERALS, ENERGY, WATER, AND THE ENVIRONMENT
GEOG 430  RESILIENCE-BASED NATURAL RESOURCE MANAGEMENT
GEOG 441  INTERNATIONAL WATER RESOURCES MANAGEMENT
GEOG 440  WATER RESOURCES MANAGEMENT IN THE UNITED STATES
GEOG 452  SUSTAINABLE SITE PLANNING
NR 455  NATURAL RESOURCE DECISION MAKING
RNG 341  RANGELAND ECOSYSTEMS AND MANAGEMENT
RNG 355  DESERT WATERSHED MANAGEMENT
RNG 421  WILDLAND RESTORATION AND ECOLOGY
RNG 455  RIPARIAN ECOHYDROLOGY AND MANAGEMENT
RNG 490  RANGELAND MANAGEMENT PLANNING

Experiential Learning
Select 3 credits  

Specialization Area
Select 27 credits  

Total credits required for graduation  180

1  The program must contain at least one course, internship, or research experience that provides opportunities for hands-on experience in design and collection of observations in the physical, biological or social environment. Students are urged to work with advisors at an early stage in their study to identify courses or experiences that are appropriate.

2  This requirement can be met by completing an approved certificate, option, or minor from a participating program in the environmental or closely related sciences, or working with advisors to develop an innovative course cluster to analyze environmental systems.

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

Specialization Area

Approved Certificates:
* Geographic Information Science

Approved Options (All options under the Environmental Sciences major):
* Alternative Energy
* Applied Ecology (EC)
* Aquatic Biology (EC)
* Conservation, Resources, and Sustainability (EC)
* Earth Systems (EC)
* Environmental Agriculture (EC)
* Environmental Policy and Economics (EC)
* Environmental Science Education
* Environmental Water Resources (EC)

Note: EC Available via Ecampus

Major Code: 657