

2009-2010

B.S. in Environmental Science: Environmental Science Major

Huxley College of the Environment

What Is the Study of Environmental Science?

Environmental Science draws on basic knowledge of the physical, chemical, biological and quantitative aspects of natural systems. The knowledge of how natural systems work is applied to solving problems largely created by human activities. Often these problems are represented by disturbances in the functioning of natural systems. Humans are altering their own life-support systems – the air, the water and soil. The scale of disturbance ranges from the molecular and cellular to individuals, populations, ecosystems, and regional and global levels.

The Environmental Science major will acquire the scientific and problem solving skills needed to conserve and restore the natural environment.

Students of Environmental Science will go directly into an environmental science career or on to graduate school to further their study.

Why Should I Consider This Major?

Are you excited by how natural systems work? Do you want to solve the problems of the natural environment caused by human activities? Do you love to work outdoors? Do you love the sciences and scientific inquiry? Then Environmental Science is for you.

How to Declare:

Any student may declare as an Environmental Studies pre-major. The forms are available at the Huxley College Office in ES 539.

Admission to Huxley College and its majors is selective and based upon the following four criteria:

1. Completion of required preparatory course work
2. Academic performance (GPA)
3. A brief essay in response to a given question, and
4. Relevant experience

Applications should be submitted to the Huxley College office by April 25 for admission summer or fall quarter; October 6 for admission winter quarter; and January 15 for admission spring quarter.

Mid-Program Checkpoint:

Students intending to complete a Bachelor's of Science degree in Environmental Science within four years should complete the following courses by the start of their junior year. Students are expected to follow all prerequisite requirements for courses and seek early departmental advisement.

Coursework:

BIOL 204, 205, 206
CHEM 121, 122, 123
ECON 206
EGEO 203 or GEOL 211
MATH 124
PLSC (*preferably 101 or 250*)
BCOM or CCOM GUR course

Other Activities:

Get involved in environmental issues and groups. Volunteer for environmental organizations.
Taking math classes beyond calculus is strongly recommended.

Contact Information:

**Huxley College of the
Environment Website:**

<http://www.wvu.edu/huxley/>

Department Chair:

Leo Bodensteiner
ES 522, 360-650-7375

Leo.Bodensteiner@wwu.edu

Undergraduate Advisor:

Kathryn Patrick
ES 539, 360-650-3520

Kathryn.Patrick@wwu.edu

Sample Careers:

Wildlife Biologist
Naturalist
Endangered Species Biologist
Environmental Inspector
Environmental Scientist
Fisheries Biologist
Marine Biologist
Safety and Health Specialist
Park Ranger
Aquatic Toxicologist
Wetlands Ecologist
Biological Survey
Water Resources Specialist
Environmental Chemist
Soil Conservation Specialist



Environmental Science Major Requirements: 132-137 Credits

Required Preparatory Coursework:

BIOL 204, 205 and 206 Biology Series (4, 5, 5)
CHEM 121, 122 and 123 General Chemistry I, II, and III (5, 5, 4)
ECON 206 Microeconomics (4)
EGEO 203 Physical Geography (4)
Or GEOL 211 Physical Geology (4)
MATH 124 Calculus (5) [Second quarter (MATH 125) recommended]
Political Science, preferably 101 or 250 (3-5)
BCOM or CCOM GUR course (3-5)

Huxley Core Requirements: 22-29 credits

One Course from two of the three categories: 7-8 credits

Human Ecology/Geography:

ESTU 303 Human Ecology (4)
EGEO 311 Population and Resources (3)
EGEO 314 Urbanization: Processes and Patterns (4)

Environmental Policy:

ESTU 304 Environment and Resource Policy (4)
ESTU 320 Explorations in Environmental Studies (4)

Environmental History, Philosophy, Ethics:

ESTU 305 Environmental History and Ethics (4)
ESTU 488 The History of Conservation in America (4)

Approved Capstone Course, list on Huxley College website (4-5 credits)

Environmental Applications Experience: 10 credits minimum

ESCI 498a Senior Thesis (10-15)
ESCI 498b Internship (10-15)
ESCI 498c Senior Project (10-15)
ESCI 498d Foreign Study (10-15)

Major Requirements:

Chemistry-choose one option: (5-10 credits)

CHEM 251 General Organic Chemistry (5)
Or CHEM 351, 352 Organic Chemistry (4, 4)
and CHEM 354 Organic Chemistry Lab (2)

One Ecology Course (3 credits) from:

ESCI 325 Ecology (3)
BIOL 325 Ecology (3)

One Biostatistics Course (5 credits) from:

ESCI 340 Biostatistical Analysis (5)
BIOL 340 Biometrics (5)

One Large-Scale Systems Course (3 credits minimum) from:

ESCI 321 Oceanography (4)
ESCI 435 Landscape Ecology (4)
ESCI 492 Climate Change (4)
EGEO 330 Geography of Landforms (4)
EGEO 331 Climatology (4)
EGEO 433 Climate and Biophysical Processes (4)

One course from:

ESCI 436 Environmental Impact Assessment (5)
ESCI 470 Ecological Restoration (4)
ESCI 490 Environmental Risk Assessment (4)
ESCI 491 Oceanography of Puget Sound (4)
ESTU 436 Environmental Impact Assessment (5)
ESTU 470 Planning Studio (6)
ESTU 496 Environmental Stewardship (5)

Two Laboratory Field Courses (10 credits minimum)

ESCI 321/322 Oceanography with Lab (4, 2)
ESCI 361/362 Water Quality with Lab (3, 2)
ESCI 407 Forest Ecology (5)
ESCI 408 Field Methods in Wildlife Ecology (5)
ESCI 410/411 Forestry-Fish Interactions, Assessment (3, 2)
ESCI 425/421 Environmental Biology of Fishes with Lab (3, 2)
ESCI 423 Past Environment of the Pacific Northwest (4)
ESCI 426 Marine Invertebrates and Their Environment (5)
ESCI 428 Freshwater Algae Bio-Indicators (4)
ESCI 429 Stream Ecology (5)
ESCI 430 Limnology (5)
ESCI 440 Wetlands Ecology (5)
ESCI 442 Introduction to Remote Sensing (5)
ESCI 455/457 Environmental Toxicology I with Lab (4, 4)
ESCI 456/458 Environmental Toxicology II with Lab (4, 3)

Emphasis Options for Environmental Science Majors

(Credits included in major)

Environmental Science majors may choose to complete one of the following emphasis options. Courses used to fulfill requirements in the emphasis may also be used to fulfill requirements in the Environmental Science major. See department for further details.

- Environmental Toxicology
- Freshwater Ecology
- Marine Ecology
- Terrestrial Ecology

Another Environmental Science option:

Minor in Environmental Science (24-29 credits)

These courses are offered within this major and may be used to satisfy GUR or Writing Proficiency requirements.

QSR: MATH 124

SSC: PLSC (preferably 101 or 250); ECON 206

LSCI: BIO 204, 205, 206; CHEM 121, 122, 123
EGEO 203

WP: Three Writing Proficiency points are required for graduation (they are noted as WP1, WP2, and WP3). Check [Classfinder](#) or [Online Timetable](#) for departmental offerings each quarter.