Portland State University  
Bachelor of Arts/Bachelor of Science in Environmental Studies

The Environmental Science Program allows students to develop the skills and interdisciplinary understanding needed to deal with environmental systems and human impacts on those systems and social implications of decisions concerning the environment. Students should consult with a program adviser to assure proper course planning.

The B.A./B.S. degrees in environmental science rest on an interdisciplinary curriculum that develops understanding and expertise in environmental science by building on a foundation in natural sciences, social sciences and geography complemented by related courses in environmental policy and resource management. Students complete field experiences working on projects in the University, metropolitan community, and region. This degree is more focused on resource management than the Environmental Science degree.

Admissions Requirements:
Admission to the program is based on general admission to the University.

Degree Requirements: A summary of the requirements is listed below.

- 29 - 31 credits in Natural Sciences in the subjects of ecology, chemistry, environmental systems, and physical geography
- 24 credits in Social Sciences and Management in the subjects of resource management, economics, environmental policy and regulations, and others
- 21 credits from a list of "Skills" that includes quantitative analysis, visualization of spatial data, field methods, and others
- 16 credits in identified Topical Areas that include environmental systems, urban issues, resource management, nature/society interactions, and environmental education

A minimum of 90 credits is required for this major.

Core Content:
Natural Sciences Core Courses
Ecology – 8 credits in one of the following sequences
   - BI 252, 253: Principles of Biology
   - SCI 341, 342: Biology Concepts and Applications
Chemistry – 6 to 8 credits (two quarters or one semester)
   - ESM 230 & 231: Fundamentals of Environmental Chemistry I and II
   - CH 104 and 105
Environment Science – 8 credits
   - ESM 220: Introduction to Environmental Systems
   - ESM 221: Applied Environmental Studies: Problem Solving
Physical Geography - 4 credits
   - GEOG 210: Physical Geography
Senior Seminar – 1 credit
   - ESM 407: Environmental Seminar
Social Sciences and Management Core Courses
Human Geography/Management - 8 credits
GEOG 230: Environment and Society: Global Perspectives
GEOG 345: Resource Management

Environmental Economics – 4 credits
  EC 332: Economics of Environmental Issues or equivalent

Environmental Policy/Regulations - 4 credits
  ESM 222: Applied Environmental Studies: Policy Considerations

Environmental Management – 4 credits
  ESM 335: Intro to Environmental Management

An additional 4 credits from the following list of courses:
  ESM 330: Environment and Ecological Literacy
  PS 319: Politics of the Environment
  PH 310: Environmental Ethics
  HST 339: The Environment and History
  GEOG 347: Environmental Issues and Action

Skills:
Quantitative Analysis – 4 credits from this list:
  ESM 340: Research Methods in Environmental Science
  STAT 243: Introduction to Probability and Statistics I
  SCI 314: Environmental Statistics
  GEOG 397: Visualization of Spatial Data
  GEOG 497: Spatial Quantitative Analysis

Visualizing Spatial Data – 9 credits
  GEOG 380: Maps and Geographic Information
  GEOG 488: Geographic Information Systems I: Introduction

Field Methods – 4 credits from this list:
  ESM 342: Field Methods (can be taken twice for 4 credits)
  BI 473: Field Sampling
  GEOG 425: Field Methods in Human Geography
  GEOG 420: Field Methods in Physical Geography
  GEOG 489: Building GIS Database with GPS

Communication - 4 credits from this list:
  WR 327: Technical Report Writing
  ENG 449: Advanced Topics: Cultural Studies
  GEOG 480: Visual Image Analysis
  GEOG 485: Map Design and Production
  GEOG 495: Maps, Models and GIS

Topical Areas:
Students must take 4 courses (16 credits) from one Topical Area. The intent of these lists is to help students and their advisor select an appropriate set of courses to meet the student’s educational goals.

**Environmental Systems**
- SCI 335, 336: Water in the Environment*
- SCI 331, 332: Atmospheric Interactions
- SCI 345, 346: Old Growth Forest Ecology
- ESM 420: Ecological Toxicology
- ESM 424: Wetland Ecology and Regulations
- ESM 426: Ecology of Streams and Rivers
- ESM 427: Watershed Biogeochemistry
- ESM 428: Urban Ecology
- ESM 429: Environmental Impact Assessment
- ESM 445: Old-growth Forest Ecology
- ESM 475: Limnology and Aquatic Ecology
- ESM 479: Fate & Transport of Toxics in the Environment
- ESM 480 Marine Coastal Ecology
- ESM 485 Ecol & Management of Bio-invasions
- ESM 499 Landscape Connectivity
- GEOG 311: Climatology
- GEOG 313: Biogeography
- GEOG 322: Alpine Environments
- SCI 331, 332: Urban Air Pollution
- SCI 335, 336: Water in the Environment
- SCI 345, 346: Old Growth Forest Ecol & Mgmt

**Urban Issues**
- ESM 428: Urban Ecology
- GEOG 332: Urban Geography
- GEOG 432: Urban Landscapes
- GEOG 442: Sustainable Cities
- GEOG 447: Urban Streams
- GEOG 448: The Urban Forest
- USP 313: Urban Planning: Environmental Issues
- USP 424: Healthy Communities
- USP 431: Urban Economics
- USP 456: Urban Transportation

**Nature/Society Interactions**
- ANTH 414: Culture and Ecology
- EC 432: Environmental Economics
- EC 444: Economics of Green Power
- ESM 433: Natural Resource Economics
- GEOG 312: Climate Variability
- GEOG 313: Biogeography
- GEOG 348: Cultural Ecology
- GEOG 346: World Population & Food Supply
- GEOG 348: Cultural & Political Ecology
- GEOG 349: Mountain Geography
- GEOG 430: Cultural Geography
- GEOG 462: Sense of Place
- HST 440, 441: American Environmental History
- PHL 310: Environmental Ethics
- PS 319: Politics of the Environment
- SOC 320: Globalization
- SOC 465: Environmental Sociology
- SCI 352: Science and Policy of Climate Change
- USP 419: Population and Society
- USP 424: Healthy Communities
- USP 426: Neighborhood Conservation & Change

**Resource Management**
- ESM 433: Natural Resource Economics
- ESM 434: Business Environmental Mgmt Econ
- ESM 443: Global Environmental Economics
- GEOG 445: Resource Management Topics
- GEOG 446: Water Resource Management
- SCI 321, 322: Energy and society
- USP 431: Urban Economics
- USP 490: Green Economics & Sustainable Devel

**Environmental Education**
- ESM 402: Environmental Education (Independent Study)
- ESM 406: Special Projects (in Environmental Education)
- ED 420: Introduction to Education and Society
- SCI 311, 312: Teaching Everyday Science
- GEOG 462: Sense of Place

Courses taken under the undifferentiated grading option (pass/no pass) will not be accepted toward fulfilling major requirements. Additional courses may be required as prerequisites. All courses used to satisfy the Environmental Studies major requirements, whether taken in the program or in other departments, must be graded C- or above.

* Any course taken to meet the core content requirement cannot be used to meet the Topical Area requirement.