ENVIRONMENTAL SCIENCE
(B.S.ENV.S.)

Required course work includes the university requirements (see regulation J-3 (https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees)), the general requirements for the B.S. degree, and:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 114</td>
<td>Organisms and Environments</td>
<td>4</td>
</tr>
<tr>
<td>COMM 101</td>
<td>Fundamentals of Oral Communication (OR one semester of a foreign language course)</td>
<td>2-4</td>
</tr>
<tr>
<td>or COMM 233</td>
<td>Interpersonal Communication</td>
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</tr>
<tr>
<td>ENVS 101</td>
<td>Introduction to Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 102</td>
<td>Field Activities in Environmental Sciences</td>
<td>1</td>
</tr>
<tr>
<td>ENVS 225</td>
<td>International Environmental Issues Seminar</td>
<td>3</td>
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<tr>
<td>ENVS 400</td>
<td>Seminar</td>
<td>1-16</td>
</tr>
<tr>
<td>ENVS 497</td>
<td>Senior Research</td>
<td>2-4</td>
</tr>
<tr>
<td>ENGL 316</td>
<td>Environmental Writing</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 317</td>
<td>Technical Writing</td>
<td></td>
</tr>
<tr>
<td>or ENGL 318</td>
<td>Science Writing</td>
<td></td>
</tr>
<tr>
<td>PHIL 452</td>
<td>Environmental Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>STAT 251</td>
<td>Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 301</td>
<td>Probability and Statistics</td>
<td></td>
</tr>
</tbody>
</table>

Choose one sequence from the following:

- GEOL 100 & 100L | Physical Geography & Physical Geography Lab                       | 4     |
- GEOL 101 & 101L | Physical Geology & Physical Geology Lab                           |       |
- GEOL 111 & 111L | Physical Geology for Science Majors & Physical Geology for Science Majors Lab | 4     |
- SOIL 205 & 206L | The Soil Ecosystem & The Soil Ecosystem Lab                       |       |

Ecology - one course from the following: 3

- BIOL 314 | Ecology and Population Biology                                       |       |
- FOR/REM 221/WLF 220 | Principles of Ecology                                         |       |
- GEOG 410 | Biogeography                                                        |       |
- NR 321 | Ecology                                                             |       |

Environmental Policy and Regulations - select one course from the following: 3

- AIST 314 | Tribal Sovereignty and Federal Policy                               |       |
- AIST 421 | Native American Natural Resource Law                               |       |
- ENVS 479 | Introduction to Environmental Regulations                          |       |
- ENVS 577 | Law, Ethics, and the Environment                                    |       |
- IS 322 | International Environmental Organizations                           |       |
- NRS 311 | Public Involvement in Natural Resource Management                   |       |
- NRS/POLS 364 | Politics of the Environment                                      |       |
- NRS/POLS 462 | Natural Resource Policy                                           |       |

Human Dimensions - one course from the following: 3-4

- AGEC 451 | Applied Environmental and Natural Resource Economics               |       |
- AIST 344 | Indigenous Ways of Knowing                                         |       |
- ANTH/SOC 465 | Environment, Policy, and Justice                                 |       |
- HIST 424 | American Environmental History                                     |       |
- ECON 272 | Foundations of Economic Analysis                                   |       |
- GEOG 345 | Global Economic Geography                                          |       |
- NRS/FOR 235 | Society and Natural Resources                                      |       |
- NRS 383 | Natural Resource and Ecosystem Service Economics                   |       |
- SOC 350 | Food, Culture, and Society                                         |       |
- Water - one course from the following: 3-4
  - ASM 315 | Irrigation Systems and Water Management                            |       |
  - BE 453 | Northwest Climate and Water Resources Change                       |       |
  - ENVS/SOIL 450 | Environmental Hydrology                                         |       |
  - ENVS 446 | Drinking Water and Human Health                                    |       |
  - FISH 415 | Limnology                                                          |       |
  - FOR 462 | Watershed Science and Management                                   |       |
  - GEOL 309 | Ground Water Hydrology                                             |       |

Sustainability and Integration - one course from the following: 3

- ENVS 415 | Environmental Lifecycle Assessment                                 |       |
- ENVS 428 | Pollution Prevention                                               |       |
- ENVS 484 | History of Energy                                                  |       |
- ENVS 485 | Energy Efficiency and Conservation                                 |       |
- FS 436 | Principles of Sustainability                                        |       |
- GEOG 435 | Climate Change Mitigation                                           |       |
- ENVS 386 | Social-Ecological Systems                                           |       |
- REM 456 | Integrated Rangeland Management                                    |       |

Technical - three courses from the following: 3-12

- BIOL 115 & 115L | Cells & the Evolution of Life Cells & the Evolution of Life Laboratory |       |
- BIOL 250 | General Microbiology                                                |       |
- BIOL 483 | Mammalogy                                                          |       |
- BIOL 489 | Herpetology                                                        |       |
- CHEM 253 & 254 | Quantitative Analysis & Quantitative Analysis: Lab                |       |
- CHEM 275 | Carbon Compounds                                                    |       |
- CHEM 277 | Organic Chemistry I                                                |       |
- ENVS 498 | Internship                                                         |       |
- FOR/NRS 375 | Introduction to Spatial Analysis for Natural Resource Management  |       |
- or GEOG 385GIS Primer | GIS Primer                                                   |       |
- FOR/NRS 472 | Remote Sensing of the Environment                                  |       |
- GEOG 301 | Meteorology                                                        |       |
- GEOG 313 | Global Climate Change                                              |       |
- GEOG 401 | Climatology                                                        |       |
- GEOG 483 | Remote Sensing/GIS Integration                                      |       |
- GEOL 361 | Geology and the Environment                                        |       |
- MATH 175 | Calculus II                                                        |       |
- PHYS 111 & 111L | General Physics I & General Physics I Lab                         |       |
### Environmental Science (B.S.Env.S.)

- **PHYS 112** General Physics II & **112L** General Physics II Lab
- **PHYS 211** Engineering Physics I & **211L** Laboratory Physics I
- **PHYS 212** Engineering Physics II & **212L** Laboratory Physics II
- **SOIL 205** The Soil Ecosystem
- **WLF 482** Ornithology

*for Phys. 2 Science Option only:*
- **ENVS 428** Pollution Prevention
- **ENVS 429** Environmental Audit
- **GEOG 375** Geology of National Parks
- **REM 407** GIS Application in Fire Ecology and Management
- **REM 459** Rangeland Ecology

#### Options
- **Select one of the following options:**
  - Biological Science (p. 2)
  - Physical Science (p. 2)
  - Physical Science 2 (p. 3)
  - Social Science (p. 3)
  - Biophysical Science (p. 4)

#### Total Hours
- 67-139

### A. Biological Science Option

This option is suitable for students wishing to pursue technically oriented careers in environmental professions such as natural resource management, bioremediation, and environmental impact analysis.

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<thead>
<tr>
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<tbody>
<tr>
<td>BIOL 250</td>
<td>General Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 112</td>
<td>General Chemistry II</td>
<td>3</td>
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<td>CHEM 112L</td>
<td>General Chemistry II Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MATH 160</td>
<td>Survey of Calculus</td>
<td>4</td>
</tr>
</tbody>
</table>
  
  or MATH 170 | Calculus I                                               |       |

Select 4 electives from at least two of the following areas: 20

- **Plant Protection:**
  - **ENT 322** General and Applied Entomology
  - **PLSC 338** Weed Control
  - **PLSC 410** Invasive Plant Biology
  - **PLP 415** Plant Pathology
  - **SOIL 446** Soil Fertility

- **Animal Ecology:**
  - **WLF 314** Ecology of Terrestrial Vertebrates
  - **WLF 315** Techniques Laboratory
  - **WLF 440** Conservation Biology
  - **WLF 448** Fish and Wildlife Population Ecology

- **Aquatic Ecology (Take all three courses):**
  - **FISH 314** Fish Ecology
  - **FISH 415** Limnology
  - **FISH 430** Riparian Ecology and Management

- **Forest and Range Systems:**
  - **FOR 330** Forest Soil and Canopy Processes
  - **FOR 426** Global Fire Ecology and Management

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<td>REM 411</td>
<td>Wildland Habitat Ecology and Assessment</td>
<td></td>
</tr>
<tr>
<td>REM 429</td>
<td>Landscape Ecology</td>
<td></td>
</tr>
<tr>
<td>REM 440</td>
<td>Restoration Ecology</td>
<td></td>
</tr>
<tr>
<td>REM 459</td>
<td>Rangeland Ecology</td>
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#### Soils:
- **FS 409** Principles of Environmental Toxicology
- **SOIL 245** Microbial Ecology
- **SOIL 348** Pesticides in the Environment
- **SOIL 454** Pedology

#### Water:
- **ENVS 450** Environmental Hydrology
- **ENVS 446** Drinking Water and Human Health
- **FOR 462** Watershed Science and Management
- **GEOG 309** Ground Water Hydrology
- **GEOG 410** Techniques of Groundwater Study
- **HYDR 412** Environmental Hydrogeology

#### Geospatial Tools (take at least 3 of the 6 courses listed below):
- **FOR 472** Remote Sensing of the Environment
- **GEOG 385** GIS Primer
- **GEOG 424** Hydrologic Applications of GIS and Remote Sensing
- **GEOG 475** Intermediate GIS
- **GEOG 483** Remote Sensing/GIS Integration
- **LARC 495** GIS Applications in Land Planning 2

**Climate Change and Ecosystems (Take all three courses):**
- **NRS 383** Natural Resource and Ecosystem Service Economics
- **GEOG 313** Global Climate Change
- **GEOG 410** Biogeography

Total Hours 32

Courses to total 120 credits for this degree

1. Either WLF 440 or WLF 448 may be used as a depth elective.

### B. Physical Science Option

This option is suitable for students wishing to pursue technical careers in environmental professions such as air, soil, and water pollution abatement, hazardous waste management, waste minimization, and ecological restoration.

<table>
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</thead>
<tbody>
<tr>
<td>Select 4 electives from at least two of the following areas: 20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Water:**
  - **ENVS 446** Drinking Water and Human Health
  - **ENVS 450** Environmental Hydrology
  - **FOR 462** Watershed Science and Management
  - **GEOG 309** Ground Water Hydrology
  - **GEOG 410** Techniques of Groundwater Study
  - **HYDR 412** Environmental Hydrogeology

- **Hazardous Waste:**
  - **BE 433** Bioremediation
  - **BE 452** Environmental Water Quality
  - **BIOL 380** Biochemistry I
CHEM 418  Environmental Chemistry
ENVS 479  Introduction to Environmental Regulations
FS 409  Principles of Environmental Toxicology

Geology:
GEO 335  Geomorphology
GEO 361  Geology and the Environment
GEO 422  Principles of Geophysics
GEO 423  Principles of Geochemistry

Mathematics and Statistics:
MATH 175  Calculus II
MATH 275  Calculus III
MATH 310  Ordinary Differential Equations
STAT 431  Statistical Analysis

Soils:
CHEM 418  Environmental Chemistry
SOIL 415  Soil and Environmental Physics
SOIL 422  Environmental Soil Chemistry
SOIL 454  Pedology

Economics and Management (take all three courses):
OM 378  Project Management
ECON 385  Environmental Economics
ENVS 428  Pollution Prevention

Geospatial Tools (take at least 3 of the 4 courses):
FOR 472  Remote Sensing of the Environment
GEOG 483  Remote Sensing/GIS Integration

Climate Change and Emissions Reduction:
ENVS 485  Energy Efficiency and Conservation
GEOG 313  Global Climate Change
GEOG 401  Climatology
GEOG 435  Climate Change Mitigation

Total Hours 20

C. Physical Science 2 Option
This option is only available to students in Coeur d'Alene and Idaho Falls.

Select 4 electives from at least two of the following areas: 20

Water:
CE 433  Water Quality Management
ENVS 450  Environmental Hydrology
FISH 540  Wetland Restoration
GEOL 309  Ground Water Hydrology

Mathematics and Statistics:
MATH 175  Calculus II
MATH 275  Calculus III
MATH 310  Ordinary Differential Equations
STAT 431  Statistical Analysis

Management Tools (take three of the following):
ENVS 415  Environmental Lifecycle Assessment
ENVS 428  Pollution Prevention
GEOG 385  GIS Primer
GEOG 424  Hydrologic Applications of GIS and Remote Sensing
INDT 364  Hazardous Materials
INDT 448  Project and Program Management

Environmental Policy and Regulations (Take three of the following):
NRS 572  Human Dimensions of Restoration Ecology
ENVS 429  Environmental Audit
ENVS 436  Principles of Sustainability
ENVS 479  Introduction to Environmental Regulations
ENVS 482  Natural Resource Policy and Law

Energy Systems:
GEOG 453  Water and Energy Systems
ENVS 484  History of Energy
ENVS 485  Energy Efficiency and Conservation
INDT 415  Impact of Technology on Society
INDT 434  Power Generation and Distribution

Sustainability Science:
ENVS 415  Environmental Lifecycle Assessment
ENVS 428  Pollution Prevention
ENVS 436  Principles of Sustainability
FS 409  Principles of Environmental Toxicology
INDT 457  Lean to Green Sustainable Technology

Total Hours 20

D. Social Science Option
This option is suitable for students wishing to pursue careers in environmental professions such as environmental regulation, land use planning, environmental administration, and as a pre-law program for environmental law.

Select 5 depth electives from one of the following areas: 15

Policy and Law:
ENVS 479  Introduction to Environmental Regulations
PHIL 470  Philosophy of Law
POLS 364  Politics of the Environment
POLS 467  Constitutional Law
POLS 468  Civil Liberties

Administration and Planning:
ACCT 482  Enterprise Accounting
COMM 410  Conflict Management
NRS 386  Social-Ecological Systems
### E. Biophysical Science Option

This option is intended for students at a distance wishing to pursue technically oriented careers in environmental professions such as natural resource management, bioremediation, and environmental impact analysis. Students need to work closely with an academic advisor to plan the courses needed to fulfill degree requirements which are not available through distance delivery.

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<tbody>
<tr>
<td>BIOL 250</td>
<td>General Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>or PHYS 111</td>
<td>General Physics I</td>
<td></td>
</tr>
<tr>
<td>ENGL 317</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>MATH 170</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>Select one of the following:</td>
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<td></td>
</tr>
<tr>
<td>GEOG 100 &amp; 100L</td>
<td>Physical Geography and Physical Geography Lab</td>
<td></td>
</tr>
<tr>
<td>GEOL 101 &amp; 101L</td>
<td>Physical Geology and Physical Geology Lab</td>
<td></td>
</tr>
</tbody>
</table>

Select 48 credits of electives, including at least one course from each of the following areas (all are available online):

- Water and Soils:
  - BE 452 Environmental Water Quality
  - ENVS 446 Drinking Water and Human Health

- Sustainability:
  - ENVS 428 Pollution Prevention
  - FCS 411 Global Nutrition
  - FS 409 Principles of Environmental Toxicology
  - FS 436 Principles of Sustainability
  - GEOG 313 Global Climate Change
  - INDT 415 Impact of Technology on Society

- Ecology:
  - FOR 426 Global Fire Ecology and Management
  - REM 221 Principles of Ecology
  - REM 410 Principles of Vegetation Monitoring and Measurement
  - REM 440 Restoration Ecology
  - REM 459 Rangeland Ecology
  - WLF 440 Conservation Biology

- Energy:
  - ENVS 484 History of Energy
  - ENVS 485 Energy Efficiency and Conservation

- Geographical Information Systems:
  - GEOG 385 GIS Primer
  - GEOG 424 Hydrologic Applications of GIS and Remote Sensing
  - REM 407 GIS Application in Fire Ecology and Management

- Social Science:
  - IS 322 International Environmental Organizations
  - ENVS 428 Pollution Prevention
  - ENVS 484 History of Energy
  - FCS 411 Global Nutrition
  - INDT 415 Impact of Technology on Society

Total Hours 62

Courses to total 120 credits for this degree.