Bachelor of Science in Environmental Science

The Bachelor of Science in Environmental Science provides scientific coursework in both the natural and social sciences, while focusing on the complex relationship among science and public policy. This online bachelor’s degree offers a fundamental understanding of environmental policy and analysis, and environment management issues such as stewardship of natural resources, pollution management, fish, and wildlife management, and hazardous materials. This degree program helps prepare you for a career as an Environmental Protection Agency (EPA) inspector, environmental engineer, civil engineer, or urban or regional planner. In addition to the core scientific studies, this bachelor’s degree helps to improve your critical thinking, analytical skills and communication skills that are valuable assets in all industries.

Courses in this online degree are taught by expert practitioners. Many are leaders in the field and hold positions at the U.S. Fish and Wildlife Service, Environmental Protection Agency, Bureau of Land Management, the Nature Conservancy, and other prominent government and nongovernment organizations.

Degree Program Objectives

In addition to the institutional and general education level learning objectives, this degree also seeks the following specific learning outcomes of its graduates. With reference to each of the respective areas of environmental science, graduates in this degree program will be able to:

- Assess the political, legal, economic, and social dynamics associated with the environment and management of the environment.
- Examine environmental compliance in terms of moral, political, and economic factors.
- Analyze environmental issues within their economic, historical, and theoretical context.
- Assess an environmental perspective that includes alternative approaches to economic development and incorporates a code of responsibility.
- Evaluate the consequences of ecological disasters on public health, productivity, and social and economic welfare.
- Explain the social, environmental, and economic barriers to the implementation of sustainable environmental practices and programs.

Degree at a Glance

First Course Requirement (3 semester hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title (Page)</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLL100</td>
<td>Foundations of Online Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Semester Hours = 3

1 Required as the first course in all undergraduate programs.

General Education Requirements (38 semester hours)

- English (6 semester hours)
  - ENGL101 Proficiency in Writing (Required) | 3 |
  - Select 1 course from the following: | 3 |
    - ENGL102 Effectiveness in Writing |
    - ENGL200 Composition and Literature |

- History (6 semester hours)
  - Select 2 courses from the following: | 6 |
    - HIST101 American History to 1877 |
    - HIST102 American History since 1877 |
    - HIST111 World Civilization before 1650 |
    - HIST112 World Civilization since 1650 |
    - HIST121 Western Civilization before The Thirty Years War |
    - HIST122 Western Civilization since The Thirty Years War |
    - HIST221 African-American History before 1877 |
    - HIST222 African-American History since 1877 |
    - HIST223 History of the American Indian |

- Humanities (3 semester hours)
  - Select 1 course from the following: | 3 |
    - ARAB100 Arabic I |
    - ARTH200 Art Appreciation |
    - COMM200 Public Speaking |
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>BOL133</td>
<td>General Biology I with Lab</td>
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<tr>
<td>CHEM133</td>
<td>General Chemistry I with Lab</td>
<td></td>
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<tr>
<td>EVSP201</td>
<td>Environmental Economics</td>
<td></td>
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<tr>
<td>SCIN138</td>
<td>Introduction to Physical Geology with Lab</td>
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</tr>
<tr>
<td>EVSP310</td>
<td>Water Science (Prerequisites: BIOL133, General</td>
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<tr>
<td></td>
<td>Biology I with Lab or SCIN130, Introduction to</td>
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<tr>
<td></td>
<td>Biology with Lab and MATH302, Statistics)</td>
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<tr>
<td>EVSP311</td>
<td>Soil Science (Prerequisites: CHEM133, General</td>
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<tr>
<td></td>
<td>Chemistry I with Lab or SCIN131, Introduction to</td>
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<tr>
<td></td>
<td>Chemistry with Lab and SCIN138, Introduction to</td>
<td></td>
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<tr>
<td></td>
<td>Physical Geology with Lab)</td>
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<tr>
<td>EVSP411</td>
<td>Environmental Policy, Regulation, and Law</td>
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<tr>
<td>EVSP413</td>
<td>Environmental and Ecosystems Management (Prerequisite: EVSP310, Water Science)</td>
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<tr>
<td>MATH302</td>
<td>Statistics (Prerequisite: MATH110, College</td>
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<td></td>
<td>Algebra, MATH111, College Trigonometry, or</td>
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<td></td>
<td>MATH225, Calculus)</td>
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<tr>
<td>PHIL320</td>
<td>Environmental Ethics</td>
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**Core Requirements (33 semester hours)**

Students must choose a concentration for this degree program and may select from a General Concentration, Environmental Technology and Management Concentration, Fish and Wildlife Management Concentration, Regional and Community Environmental Planning Concentration, or Sustainability Concentration.
General Concentration Requirements (12 semester hours)

A general concentration allows you to take courses across a number of areas of study within your program based on your own interests.

Select 4 courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>EVSP312</td>
<td>Introduction to Sustainability</td>
</tr>
<tr>
<td>EVSP316</td>
<td>U.S. Federal Environmental Organization</td>
</tr>
<tr>
<td>EVSP322</td>
<td>Remote Sensing and Geographic Information Systems</td>
</tr>
<tr>
<td>EVSP414</td>
<td>Air Quality Management</td>
</tr>
<tr>
<td>EVSP415</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>EVSP416</td>
<td>General Ecology</td>
</tr>
</tbody>
</table>

Total Semester Hours: 12

Concentration in Environmental Technology and Management (12 semester hours)

Explores the theoretical foundations of environmental hazard mitigation and pollution management and how regulations, policies, and politics influence environmental management and sustainability. Covers management strategies, compliance standards and current and emerging technologies in contaminant treatment, remediation, and disposal. Examines strategies and mitigation plans for contaminants and the impacts on public health, public safety, society, and the economy.

Objectives

Students who successfully complete this program will be able to:

- Define the theoretical foundation of the disciplines of environmental hazard mitigation and pollution management.
- Explain the regulatory, policy, and political influences on environmental management and sustainability.
- Develop management strategies that incorporate environmental compliance standards and achieve organizational missions.
- Describe the current and emerging technologies in the treatment, remediation, and disposal of environmental contaminants.
- Evaluate strategies and assess mitigation plans for environmental contaminants.
- Assess the consequences of the ecological impacts on public health and safety, and social and economic welfare.

Concentration Requirements (12 semester hours)

Select 4 courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>EDMG240</td>
<td>Chemistry of Hazardous Materials</td>
</tr>
<tr>
<td>EVSP320</td>
<td>Energy and Resource Sustainability</td>
</tr>
</tbody>
</table>

Total Semester Hours: 12

Concentration in Fish and Wildlife Management (12 semester hours)

Offers an overview of concepts and principles of fish and wildlife resource management. Examines the agencies responsible for resource management and the competencies of professional fish and wildlife managers. Management techniques and methods, public lands management, and the regulations, policies, and politics that influence U.S. fish and wildlife management are also covered.

Objectives

Students who successfully complete this program will be able to:

- Describe the fundamental concepts and principles of the management of fish and wildlife resources.
- Explain the impact of human activities on the survival and management of fish and wildlife populations.
- Identify the federal, state, and local agencies responsible for the management of fish and wildlife resources.
- List the competencies needed to become a professional fish or wildlife manager.
- Compare the effectiveness of fish and wildlife management techniques and methods.
- Explain the regulations, policies, and politics that influence the management of fish and wildlife in the U.S.

Concentration Requirements (12 semester hours)

Select 4 courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
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<tbody>
<tr>
<td>EVSP330</td>
<td>Fish and Wildlife Policies, Programs, and Issues</td>
</tr>
<tr>
<td>EVSP331</td>
<td>Public Lands Management</td>
</tr>
<tr>
<td>EVSP341</td>
<td>Introduction to Wildlife Management</td>
</tr>
<tr>
<td>EVSP342</td>
<td>Population Ecology</td>
</tr>
<tr>
<td>EVSP416</td>
<td>General Ecology</td>
</tr>
<tr>
<td>EVSP417</td>
<td>Conservation Biology (Prerequisite: BIOL133 - General Biology I with Lab or SCIN130 - Introduction to Biology with Lab)</td>
</tr>
<tr>
<td>SCIN311</td>
<td>Fishery Biology (Prerequisite: BIOL134 - General Biology II with Lab, SCIN130 - Introduction to Biology with Lab, or SCIN206 - Marine Biology)</td>
</tr>
</tbody>
</table>

Total Semester Hours: 12
SCIN314  Botany (Prerequisite: BIOL134 - General Biology II with Lab or SCIN130 - Introduction to Biology with Lab)  
SCIN401  Mammalogy (Prerequisite: BIOL134 - General Biology II with Lab or SCIN130 - Introduction to Biology with Lab)  
SCIN402  Ornithology (Prerequisite: BIOL134 - General Biology II with Lab or SCIN130 - Introduction to Biology with Lab)  

Total Semester Hours 12

Concentration in Regional and Community Environmental Planning (12 semester hours)  
Identifies critical issues in landscape level planning and development that affect regional and local environmental planners. Examines how to assess and meet resource needs and solve complex land use problems. Topics include leading trends and challenges in environmental planning and how current and emerging technologies affect sustainable land use and energy development.  

Objectives  
Students who successfully complete this program will be able to:  
• Identify critical issues in landscape level planning and development that affect regional and local environmental planners and assess their implications on the environment and quality of life for the citizenry.  
• Assess the resource needs (energy, water resources, sustainability, green space, etc.) of a population and develop strategies for meeting them.  
• Describe innovative approaches, alternative actions, and strategic planning efforts needed to resolve complex, landscape-level land use planning problems and meet the needs of multiple and varied stakeholders.  
• Assess leading trends and challenges in the fields of local and regional planning, landscape-level planning, and environmental assessment and impact.  
• Describe current and emerging technologies in sustainable land use planning and energy development and discuss appropriate applications.  

Concentration Requirements (12 semester hours)  
EVSP312  Introduction to Sustainability  
EVSP320  Energy and Resource Sustainability  
EVSP321  Land Use and Planning  
EVSP322  Remote Sensing and Geographic Information Systems  
EVSP418  Green Infrastructure and Renewable Technologies  

Total Semester Hours 12

Concentration in Sustainability (12 semester hours)  
Examines foundational principles of resource and energy sustainability and how these principles apply to land use and development planning. Topics include current and emerging renewable energy technologies, society’s dependence on fossil fuels and other traditional forms of energy, and why social and economic barriers prevent acceptance and use of sustainable products, goods, and services.  

Objectives  
Students who successfully complete this program will be able to:  
• Explain the foundational principles of resource and energy sustainability.  
• List current and emerging renewable energy technologies.  
• Explain society’s dependence on fossil fuel and traditional energy sources.  
• Explain the social and economic barriers that prevent the acceptance and use of sustainable products, goods and services.  
• Apply the principles of sustainability to land use and development planning.  
• Assess the impact of green infrastructure and sustainable design on global resource sustainability.  

Concentration Requirements (12 semester hours)  
Select 4 courses from the following:  
EVSP312  Introduction to Sustainability  
EVSP320  Energy and Resource Sustainability  
EVSP321  Land Use and Planning  
EVSP322  Remote Sensing and Geographic Information Systems  
EVSP418  Green Infrastructure and Renewable Technologies  

Total Semester Hours 12

Final Program Requirements (3 semester hours)  
EVSP498  Senior Seminar in Environmental Science (to be taken as the last course before graduation)  

Total Semester Hours 3
Bachelor of Science in Environmental Science

Prerequisite: Senior Standing and completion of all core and major courses prior to enrollment.

Elective Requirements (33 semester hours)

Select any courses that have not been used to fulfill core or major requirements. Credits applied toward a minor or certificate in an unrelated field may be used to fulfill elective credit for the major.