

# ENVIRONMENTAL STUDIES DEPARTMENT

Built upon a trans-disciplinary foundation spanning the natural sciences, policy studies, economics, and ethics, students will develop the necessary skills in information synthesis and analysis, project management, stakeholder analysis, and multi-method approaches to address societal needs and concerns involving the environment. They will also develop the skills to deliver these ideas to both a professional audience and to the wider public, fostering a broad vision for stewardship of environmental systems and sustainability.

## **B.A. degree in Environmental and Sustainability Studies**

**Year 1 Learning Goal: Observe/Analyze/Understand the natural world, the built environment, and the interaction between them.**

### **Year 1 Observe/Analyze/Understand Learning Assessment Outcomes:**

#### **Skills Based Learning Outcome**

1-1) Demonstrate the ability to holistically assess social, natural, and physical characteristics of a place.

#### **Knowledge Based Learning Outcome**

1-2) Demonstrate strong comprehension of natural and domesticated ecosystems and built environment as they emerge in the concentrations of the major.

**Year 2 Learning Goal: Take action in an informed fashion in order to address environmental challenges and opportunities**

### **Year 2 Apply/Intervene/Take Action Learning Assessment Outcomes**

#### **Skills Based Learning Outcome**

2-1) Design and implement tangible outcomes for human and natural systems

#### **Knowledge Based Learning Outcome**

2-2) Demonstrate strong comprehension of the synergistic and transdisciplinary nature of environmental studies.

**Year 3 Learning Goal: Communicate knowledgeably and effectively to diverse audiences.**

### **Year 3 Communicate Learning Assessment Outcomes**

#### **Skills Based Learning Outcome**

3-1) Use a range of diverse media to translate ideas, thoughts, insights and information about humans and the environment.

#### **Knowledge Based Learning Outcome**

3-2) Demonstrate strong comprehension of the role of effective communication in addressing environmental issues, and how rhetorical analysis of audience and context is critical and must inform and shape such communication practices.

3-3) Demonstrate the use writing as a tool to deepen understanding of human ecology in addressing complex problems involving larger social issues through multiple modes of well-reasoned writing.

## **B.S. degree in Environmental and Ecological Science**

### **Year 1 Learning Goal: Observe/Analyze/Understand the natural world, the built environment, and the interaction between them**

Environmental and Ecological Science majors will develop knowledge of how natural systems function and how humans interact with and influence the sustainability of those systems including an understanding of the spatial and temporal dimensions of the environment. They will be able to locate, read, analyze, interpret and appropriately use primary literature (including public data bases), secondary literature, and popular information sources to write a critical, analytical literature review of appropriate scope to address an environmental challenge. They will be able to discern unbiased, objective environmental scholarship from material promoting special interests and critically analyze all types of information (primary/secondary literature, “grey” literature, web sites, stakeholder surveys, etc.) to develop a solution for a local environmental challenge.

#### **Year 1 Observe/Analyze/Understand Learning Assessment Outcomes:**

- 1-1) Utilize the scientific method, published research literature and other information to develop scientifically informed and relevant hypotheses to address environmental and ecological questions.
- 1-2) Demonstrate strong comprehension of ecological principles, ecosystem functioning, evolutionary principles, and sustainability concepts.

### **Year 2 Learning Goal: Take action in an informed fashion in order to address environmental challenges and opportunities**

Environmental and Ecological Science majors will be able to apply standardized ecological and environmental methodologies and instrumentation to study individual organisms, populations, communities, and ecosystem functions in the field. They will utilize a variety of physical, chemical, and biological laboratory procedures and instrumentation to analyze environmental samples. Ability to analyze and interpret the results of laboratory and field collected data using computational or statistical analysis methodology.

#### **Year 2 Apply/Intervene/Take Action Learning Assessment Outcomes**

- 2-1) Demonstrate practical mastery of environmental sampling protocols, instrumentation, standard methods, and statistical analysis tools to collect, analyze, and interpret environmental data to address an applied research question.
- 2-2) Use the published literature to enhance the design and implementation of experimental research as well as the interpretation of the resulting research findings
- 2-3) Demonstrate an integrative, critical approach to environmental problem solving based upon applied management and conservation strategies designed to prevent/mitigate harm to natural and human-dominated ecosystems.

### **Year 3 Learning Goal: Communicate knowledgeably and effectively to diverse audiences.**

Environmental and Ecological Science majors will be able to effectively communicate environmental information through writing, presentations, and the use of electronic media. They will be able to actively participate and critically engage in extemporaneous settings (e.g., planning sessions, meetings, interacting with stakeholders, etc.).

#### **Year 3 Communicating Learning Assessment Outcomes**

- 3-1) Disseminate the results of environmental inquiry to meet the standards of the professional scientific research community
- 3-2) Present the results of a complex environmental/sustainability project involving community clients and stakeholders to an audience that includes members of the general public as well as environmental professionals.
- 3-2) Use writing as a tool to deepen understanding of scientific information, articulate the role of environmental/ecological science in addressing complex problems involving larger societal issues, and enhance clear communication through cogent, well-reasoned writing. (Departmental Writing Outcome).

## **B.S. degree in Environmental Studies**

### **Year 1: Observe/Analyze/Understand the natural world, the built environment, and the interaction between them.**

The BS Environmental Studies degree prepares students whose professional aspirations are in environmental stewardship within the framework of complex social systems, human values, and natural sciences. They will observe/analyze and understand natural systems with a foundation of understanding political/economic, cultural and ethical systems. They will be able to locate, read, analyze, interpret and appropriately use primary literature (including public data bases), secondary literature, and popular information sources to write a critical, analytical literature review of appropriate scope to address an environmental challenge. They will be able to discern unbiased, objective environmental scholarship from material promoting special interests and critically analyze all types of information (primary/secondary literature, "grey" literature, web sites, stakeholder surveys, etc.) to develop a solution for a local environmental challenge.

#### **Year 1 Observe/Analyze/Understanding Learning Assessment Outcomes:**

Critically analyze information from a variety of sources to understand diverse stakeholder perspectives

1-1) Identify major stakeholders and their perspectives for environmental challenges, for both professional positions and individual value systems.

1-2) Identify and evaluate diverse sources of evidence and data that can be used to address environmental challenges.

### **Year 2: Take action in an informed fashion in order to address environmental challenges and opportunities**

#### **Year 2: Learning Assessment Outcomes:**

Use social and scientific information to craft and analyze management and policy solutions.

2-1) Write a review addressing environmental management, stewardship and/or policy using the published literature and other evidence for understanding and interpretation of issues relating to environmental systems

2-2) Identify alternative policy options regarding an environmental issue and assess the merits of each option based on available evidence.

2-3) Demonstrate an integrative, critical approach to environmental problem solving based upon applied management and conservation strategies designed to prevent/mitigate harm to natural and human ecosystems.

### **Year 3: Communicate knowledgeably and effectively to diverse audiences.**

**Year 3: Communication Learning Assessment Outcome:** Use information to communicate management policy solution to diverse stakeholders and the general public.

3-1) Communicate scientific concepts to non-scientific audiences.

3-2) Use a range of media to communicate ideas, thoughts, insights, and information about humans and the environment to both professional audiences and to the general public.