

## **Environmental Science**

### Program Goals

At the Department of Environmental Sciences, our mission is to be a regional partner and national leader in environmental science through education and research related to environmental evaluation, management, remediation and restoration.

To train students through academic and practical experiences to address environmental challenges.

To advance the state of knowledge in the environmental sciences.

To engage locally, regionally and globally to enhance scientific awareness and support for science-based policy

We address these Program Goals with scholarship that can:

Assess impacts of natural and anthropogenic events, including fire, chemical production and use, and industrial activities.

Assess the causes and impacts of global change, including climate change.

Improve environmental conditions through remediation and restoration.

Inform managers, policy makers and other stakeholders with work in risk assessment, sustainable energy, environmental monitoring, and global change mitigation or adaptation.

Investigate and describe physical and ecological processes in freshwater, marine, and terrestrial ecosystems.

Provide knowledge and services to underserved communities.

We prepare undergraduate students to:

Apply quantitative skills to environmental issues;

Apply critical thinking (analytical) skills to environmental issues;

Write and speak effectively to professional and lay audiences about issues in the field;

Use theoretical knowledge of environmental sciences in real world applications;

Incorporate multiple disciplines into environmental sciences.

We prepare graduate students to:

Explain and evaluate the theories and concepts of environmental science.

Design and conduct scientifically rigorous and relevant research.

Analyze and interpret scientific data

Communicate scientific concepts and results effectively to a range of audiences.

## **Environmental Studies**

### **ENVS STUDENT LEARNING OUTCOMES**

#### **Undergraduate Learning Goals**

Students who graduate with a B.A. from the Environmental Studies Department will have the following attributes:

Understand the natural environment as a system and how human enterprise affects that system.

Acquire the knowledge and skill to apply a systems approach to the analysis and management of natural and human-made environments.

Understand that the modern world is an entity that is ecologically, economically, and politically interconnected and interdependent and what the implications are of this for environmental problem solving.

Be able to deal in complex wholes – to view the self and social situation in their full ecological, cultural, and social context.

Understand the temporal dimension of the environment, including what forces have created the contemporary environment and what effects current behavior may have on future environments.

Perceive the future of society and environment as a range of alternate possibilities, which will be determined by the policies and decisions of the present, and understand the processes through which these policies and decisions are made.

Acquire a measure of logical skill in working through the moral dilemmas implicit in the assignment of social priorities and in the risks involved in seeking to attain those priorities.

Acquire specific skills necessary to achieve understanding of and solutions to environmental problems, including those necessary for assessment of environmental impact of human activity, and for monitoring of the health of environmental systems.

Be prepared for entry into professions involved in environmental monitoring, assessment, management and education, and/or for entry into graduate and professional school.

#### **Undergraduate Learning Objectives**

Upon graduation, Environmental Studies students will be able to:

ENVS 1 - Integrate concepts of environmental justice and well-being in understanding socio-environmental issues.

ENVS 2 - Apply an integrative approach towards understanding human-environment interactions.

ENVS 3 - Work collaboratively to identify and analyze complex environmental problems, recognize diverse stakeholder perspectives, and synthesize creative solutions.

ENVS 4 - Analyze data over time and space; communicate ideas effectively in oral, written and visual forms.

ENVS 5 - Recognize patterns on the earth's surface and describe the contribution of bio-physical processes and systems in creating them.

#### ENVS Graduate Program Goals

Students who graduate from the ENVS Graduate Program will be able to:

Critically understand an environmental issue using appropriate knowledge

Investigate that environmental issue using an interdisciplinary framework

Effectively communicate through written, visual, and oral means

Independently design, implement, and complete a research project

#### ENVS Graduate Program Learning Objectives

Students discussing work in class

Graduate Research Assistants Peruvian National Council

of Science and Technology to discuss national

environmental science and ecology research policy.

Upon graduation, Environmental Studies masters students will be able to:

ENVS MA 1 - Identify and explain the complexity of issues and processes which contribute to an environmental problem.

ENVS MA 2 -Describe how their research is situated in the history and scope of environmental studies.

ENVS MA 3 - Identify a range of theoretical frameworks and methodologies used in environmental studies and explain the appropriate contexts for their application.

ENVS MA 4 -Demonstrate a fundamental knowledge of disciplines relevant to their research topic.

ENVS MA 5 -Explain, justify, and correctly execute a method(s) appropriate to their research topic.

ENVS MA 6 -Use effective verbal presentation skills to share their research plans and results.

ENVS MA 7 -Use writing skillfully to communicate theory, methods, results, and relevance of their research project.

ENVS MA 8 -Independently design, implement, and complete a research project (thesis or field project).

### **Urban Planning and Sustainable Development**

The department of Urban and Environmental Planning and Policy (UEPP) specializes in quality education, applied research, and community engagement that connect knowledge and action to address two of today's major imperatives:

environmental justice and sustainability

and

equity and opportunity for all

Urban and Environmental Planning and Policy programs prepare students to become leaders in their fields. The Department is home to three specialized and professional programs that, collectively, reflect a comprehensive and multi-disciplinary approach to planning and policy for communities, cities, and environments.