Program Learning Goals & Outcomes

Environmental Science

Have the ability to think critically in solving problems addressed by environmental science

- Describe what critical thinking is, how evidence is used to develop an argument, and how to avoid errors in critical thinking
- Evaluate the extent to which critical thinking is employed in a group research project related to environmental science, forestry/fisheries/wildlife science and management, natural resource management, environmental policy and decision making, or similar fields related to environmental sustainability
- Apply critical thinking to a real-world environmental issue in which the role of the soil is central, such as food security, land degradation, carbon cycle/global change, downstream water quality
- Critically analyze a current environmental or natural resources issue at a local, regional, state level, how a broad range of stakeholders are engaged in the issue, how concepts and issue-solving skills learned to-date can be applied to the issue, how possible means to address the issue may be received by stakeholders from environmental, social, and economic perspectives, and how to evaluate and communicate supportable and realistic solutions through a team effort
- Demonstrate critical thinking in solving environmental problems

Know how to apply theoretical concepts of environmental science to address contemporary environmental issues

- Relate concepts from social science theories to describe human dimensions of real-world environmental challenges
- Relate concepts from environmental science and environmental policy and management to address contemporary environmental issues
- Apply theory to professional practice in solving environmental problems

Communicate effectively in oral and written forms

- Demonstrate a basic level of sufficiency in written communication
- Demonstrate a basic level of sufficiency in oral communication
- Communicate technical information with correct spelling and grammar, logically organized, and with technical style and format that is appropriate to the discipline for oral and written forms of communication
- Communicate effectively in written and oral forms in professional settings following graduation

Understand natural systems with breadth across biotic and abiotic components

- Apply theoretical concepts in environmental science to understand how Earth's biotic and abiotic systems function, how humans affect the environment, and how to achieve global sustainability
- Demonstrate an understanding of abiotic components of natural systems, such as illustrating elements of the hydrologic cycle, and integration of the abiotic and biotic systems, such as illustrating elements of the carbon and nitrogen cycles

Demonstrate a comprehension of the structure and dynamics of populations and communities in relation to sustaining resource production and biological diversity

Apply understanding of natural systems with breadth across biotic and abiotic components in professional settings

Understand human systems with breadth across individual, community, and polity levels of organization

Identify concepts, theories and examples relevant to understanding human systems across individual, community, and polity levels of organization

Appraise the nature and values of organizations and polities and their importance in social problem solving and policy making related to environmental and natural resource issues

Apply understanding of human systems with breadth across individual, community, and polity levels of organization in professional settings

Understand coupled systems, human and natural, and their relevance to problems addressed by environmental science

Integrate information related to natural and human dimensions of contemporary environmental issues and formulate professionally appropriate recommendations to address those issues

Illustrate the integration of information related to natural and human dimensions of contemporary environmental issues while making professionally appropriate recommendations to address those issues

Manifest professional competency for career-track employment or graduate work in environmental science

Demonstrate basic knowledge of the role of spatial information and information systems in addressing environmental and natural resource issues

Analyze spatial information relevant to natural resource and ecosystem management and resource planning by utilizing digital vertical image interpretation and geographic information systems

Demonstrate professional competency through job placement and success in professional certification exams (soil, water, forestry, fisheries, wildlife, other)

Demonstrate professional competencies