ENS-Environmental Science

ENS101 - Introduction to Environmental Science

The broad field of environmental management includes human population growth, soil, land and energy use, water and air pollution, and agencies and laws associated with the above topics. No one area is covered in depth. Rather, the student is introduced to each problem, its source, current corrective measures, and possible future technology.

ENS335 - Sustainable Agriculture

This course explores the origins, major concepts, and current issues of sustainability in agriculture. Our society's agricultural history has unfolded in such a way that we are just now trying to understand and create sustainability where it does not currently exist. How did this occur? We will explore environmental, economic, and social considerations of sustainability in agriculture. We will begin with a brief history of agriculture from its original inception, to the Green Revolution in the mid-1900s, to the current push for sustainability in its various forms. At the end of the course, you should be able to understand and explain to others the characteristics of our current agricultural system, the many components of sustainable agriculture and how they relate to each other, and ways that our society is moving or could move toward a sustainable agricultural system. As a lab course, the student will also plan and implement a garden plan. They will apply Sustainable agricultural methods to a variety of crops and establish a garden.

ENS399 - Conservation Biology

This course will broadly cover the multidisciplinary field of conservation biology. The course will focus on the historical context of this emerging field and the deviation from traditional natural resource management. The course will explore the impact of humans on biodiversity, both in the destruction of it and in the maintenance of what is left. The role of government, non-government organizations, and citizens will be studied.

ENS420 - Principles of Wildlife Management

This course is designed to provide students with an understanding of the philosophies and concepts of scientific wildlife management. Major emphasis will be placed on wildlife management in North America, but differing perspectives from other regions of the world will be incorporated into the course. Topics to be covered will include monitoring habitats and habitat management, population exploitation and administration, economics, and socio-political topics as they relate to wildlife management.

ENS423 - Wildlife Management Techniques

This course will cover selected techniques commonly used by wildlife biologists. Techniques used to encounter mammals, birds, reptiles and fish will be covered. Important techniques covered include aging and sexing of game species, habitat measurement and evaluation, population analysis, and analysis of food habits. The lecture portion will provide an introduction to those techniques while the lab portion will provide practical use and application of selected techniques.

ENS424 - Fisheries Management

A combination of lectures, lab, and field trips will emphasize fisheries biology and management in North America, including both freshwater and marine systems. Lectures will include fisheries resources, aquatic habitats, population dynamics, laws and regulations, aquaculture, conservation, and current fisheries issues. Labs and field trips will emphasize research methods and harvest and habitat management techniques.

ENS425 - Principles of Aquaculture

This course is designed to provide students with an understanding of the philosophies and concepts of aquaculture. Major emphasis will be placed on the impact that aquaculture has in North America, but additional global issues will be incorporated into the course. Topics to be covered include water treatment systems;

recirculating and flow through aquaculture systems; integrated aquaculture; finfish and shellfish aquaculture; fish health and disease; and the economics and politics of aquaculture.

ENS435 - Natural Resource Law and Policy

This course will focus on the history of current federal laws, policies, and programs, and include discussions of the roles of various resource management agencies. The course will focus on related natural resources administration and policies in the United States but will include aspects of international law and policy as they affect North America's resources. The course will cover the historical context of U.S. natural resource policy including the history of land acquisition and disposition by the federal government and the creation of the public domain including the National Parks, National Forests, Wildlife Refuges, and Bureau of Land Management Lands.

ENS440 - Environmental Pollution Control

A comprehensive study of environmental pollution to include its major sources, control and management, and the impacts from environmental toxins, contaminants and pollutants on humans and our environment. An emphasis will be given to the technologies involved in the abatement, treatment, and monitoring of environmental pollutants. Specific topics will include: land, air, water and noise pollution.

ENS475 - Wetlands Ecology

A coordinated lecture/laboratory approach that will emphasize wetlands within the continental United States. The course will provide a background in both historical and modern wetland issues; characteristics of freshwater, estuarine and marine wetland types, including important plants and animals of each; processes of wetland determination and delineation; regulatory framework of wetlands protection ; and procedures involved in wetland restoration and conservation. T

ENS480 - Topics in Field Biology

A specialized off-campus residential program which emphasize ecology, behavior and the natural history of organisms in their natural environments. Students will be trained in a variety of methods used in field biology and have the opportunity to contribute to original research projects. Program focus will vary, depending on the length of the course and the site at which the course is offered. Course may be repeated as the topic/site changes.

ENS492 - Animal Population Dynamics

This course is designed to provide students with an understanding of theoretical and applied aspects of animal population dynamics. The course will examine variation in population size and sex/age composition, reproduction and mortality, and quality and condition of animals in populations. Emphasis will be placed on principles and techniques used by wildlife ecologists to quantify and predict populations of vertebrate animals. The lecture portion of the course will include lecture and discussion on issues and concepts in population dynamics. The lab portion of the course will emphasize application of common techniques and models used by wildlife population ecologists.

ENS495 - Experimental Design and Analysis

This class will help prepare students to design, conduct and evaluate scientific research. Class work will focus on the theoretical and applied basis of experimental design, sampling theory and sampling designs, data collection and analysis (using statistical software), and the proposal and evaluation of research studies.