SUSTAINABILITY AND ENVIRONMENTAL STUDIES

SES 100 - Introduction to Sustainability and Environmental Studies (4 Credit Hours)
In this course, students consider environmental problems through the lenses of many different academic disciplines. The purpose of this approach is two-fold: 1) to enhance the student's understanding of environmental issues as multi-dimensional dilemmas, and 2) to evaluate and promote sustainable alternatives to business-as-usual. In the first part of the course, students consider the human relationship with the non-human world, including problems of ethics, social and psychological connections with nature, ecological services, and common pool resources. The subsequent sections address historical and current environmental concerns, including population growth, food systems, resource limitation, pollution, biodiversity, and environmental justice. We explore sustainable solutions, remedies, and actions, including regulation and law, restoration, and sustainable lifestyles. The laboratory component of the course exposes students to local and regional environmental geographies, problems, and tools for sustainable solutions. Field trips, guest speakers, and films emphasize the necessity of multidisciplinary integration in the design of sustainable environmental systems.

SES 200 - Environmental Analysis (4 Credit Hours)
In this course, students will learn and practice different methods of addressing environmental questions and expressing environmental perspectives. Central themes are writing and quantitative analysis: for each of the topics and methods used, students will gain experience with a variety of professional writing styles and analytical approaches. Environmental issues will be investigated through both quantitative and qualitative methods of data collection and statistical analysis, along with a variety of writing styles. Students will also examine the human connection with the nonhuman world through the use of media and spatial representation. Through successful completion of this course, students will have applied a variety of methods to the analysis of environmental issues. Prerequisite: SES 100.

SES 215 - Renewable Energy Systems (4 Credit Hours)
Renewable Energy Systems provides students with a comprehensive overview of the different alternative energy systems that are in use today. The course will introduce the basic scientific and engineering concepts used in designing and analyzing different energy technologies. Some emphasis will be placed on real-world applications of such technologies through the introduction of several case studies related to the field.

SES 222 - Geographic Information Systems I (2 Credit Hours)
This course is an introduction to the concepts and uses of Geographic Information Systems (GIS) with particular application to environmental issues. The course consists of laboratory exercises on GIS data structures and sources of data, on the use of specific GIS tools, and on practical applications of GIS to real-world tasks. The student will gain skills in spatial data analysis, map generation, and data presentation using ArcGIS software. After successful completion of this course, students who wish to develop advanced GIS skills may enroll in SES 223.

SES 223 - Advanced GIS (2 Credit Hours)
This course is intended to give the student experience with advanced GIS applications. The focus will be on novel analyses of spatially explicit data about real-world environmental issues.
Prerequisite(s): GEOS 222, ENVS 222, or SES 222.

SES 240 - Environmental Politics and Decision-Making (4 Credit Hours)
This course gives students a chance to explore the realm of proactive change in the environmental arena. It combines the theories of policy, the tools of problem-solving, and the practice of dealing with environmental challenges in the real world of the American government. The premise of the course is this: if you want to improve the state of the planet, you have to propose a solution. To make a solution happen, you should understand the process of getting an idea through the decision-making system. Effecting change requires a background in the system(s) that make things happen, whether you ultimately want to work within the system or outside it. This course is divided into two main components: an overview and implementation of problem-solving techniques, and an in-depth examination of the U.S. Congress' role in environmental policy formation. The latter section culminates in a "Moot Congress" undertaken by students at the end of the semester. Not recommended for first-year students.

SES 256 - Farmscape: Visual Immersion in the Food System (4 Credit Hours)
Every human being has an intimate relationship with food, often with deep emotional facets. Yet we in the U.S. know very little about the food system that sustains us – it is a mysterious and often invisible set of processes, organizations, and people. This remarkably complex web of inputs, labor, machinery, laws, subsidies, mergers, and so many other components is one that we take largely for granted. This class seeks to align that reality with another: we are an intensely visual species. A critical part of our existence that we experience through all of our senses is one we fail to comprehend through our primary sense. And we have this occasion to use sight in a formalized way – photography – to tell new stories, and to bring an artistic sensibility to our understanding of food, and perhaps ourselves. Through imagery, writing, and the curatorial process of exhibiting our work in a public setting, we have a truly unique opportunity. Our immersion in these critical issues can bring full circle the understanding we gain through many eyes to enhance awareness in other people about how our food system connects us all.

SES 262 - Environmental Dispute Resolution (4 Credit Hours)
An in-depth investigation of alternative dispute resolution (ADR) as an improved means to affect change in environmental conflict. Both an intellectual and hands-on introduction to the theory and practice of ADR, relying on research into theoretical aspects of conflict, attendance at both conventional litigatory and ADR hearings, and actual participation in ADR exercises.

SES 274 - Ecosystem Management (4 Credit Hours)
Many of Earth's ecosystems are stressed and degraded as a result of human activities. Ecosystem management is the process of evaluating the biotic and abiotic features of ecosystems and stressors and manipulating those features toward a defined goal, such as conservation or restoration. In this course, students will apply aspects of systems ecology to management scenarios in particularly stressed ecosystems. Students will gain an understanding of systems ecology and will learn how ecological communities function within ecosystems and landscapes. After establishing this foundation, students will lead the exploration of some of our planet's greatest ecological systems. Lab sessions will allow students to construct a computer-based simulation of an ecosystem and to apply ecological modeling as a management tool in both lab and field settings.

SES 284 - Environmental Planning and Design (4 Credit Hours)
This course examines a variety of local environmental planning processes and issues, focusing primarily on the communities surrounding Denison (Granville, Licking County), as well as the theories, concepts, and tools of design, both at a community level and for individual buildings. Particular attention will be paid to controversial models of architecture and planning to understand some of the negative implications of conventional approaches. Field trips, group exercises, research, and project competitions will form the basis for course evaluation.

SES 301 - Sustainability Practicum (4 Credit Hours)
This core major course is primarily for SES majors; minors are welcome. This course provides the opportunity for students to gain hands-on experience working on real-world environmental problems. As a group, students work in an intensive format with a real "client" and real deadlines to research a problem, assess options, recommend solutions, and evaluate outcomes. Examples of projects include energy and water conservation, local land use planning, wetlands management, reuse/recycling programs, agriculture preservation, and environmental education. Should be taken during the junior year.
Prerequisite(s): ENVS or SES 202, ENVS/SES major or minor.

SES 334 - Sustainable Agriculture (4 Credit Hours)
This course will expose students to the purposes and methods associated with sustainable agriculture. We will do this through readings, discussion, and experience on local and sustainable farms. Throughout the semester we will reflect on the social, economic, and environmental aspects associated with sustainable agriculture as well as actual practices affiliated with the modern sustainable agriculture movement. Students must be prepared to commit to working on farms each week as part of the lab requirement of this course.

SES 361 - Directed Study (1-4 Credit Hours)

SES 362 - Directed Study (1-4 Credit Hours)

SES 363 - Independent Study (1-4 Credit Hours)

SES 364 - Independent Study (1-4 Credit Hours)

SES 401 - Sustainability and Environmental Senior Project (4 Credit Hours)
This course is required for SES majors with senior standing unless they are pursuing senior research (SES 451/452 or equivalent). This course provides an integrating and culminating experience for students, individually or in small groups, to engage with an environmental issue, either by conducting research related to this issue or by taking action on it in a way that is informed by their academic understanding. The primary objective is for each student to integrate their study of environmental issues at Denison and to develop skills in critically analyzing environmental problems and promoting environmental change. A primary focus is on writing: crafting a project proposal, communicating objectives and cogent arguments, reviewing and incorporating relevant literature, analyzing results, and synthesizing conclusions. Students will have the opportunity to hone a major written work through several stages and to provide and receive peer review on written work.
Prerequisite(s): SES core and SES 301, or consent of instructor.

SES 451 - Senior Research (4 Credit Hours)
Independent research arranged with a faculty advisor.

SES 452 - Senior Research (4 Credit Hours)
Independent research arranged with a faculty advisor. ENVS 452 is the continuation of ENVS 451.