

# Special Academic Initiatives: Sustainability

Course of Study 2015-2016

Sustainability has been called the "ultimate liberal art," because it examines fundamental global questions through so many different fields of study. The concept gained prominence in 1987, with the publication of *Our Common Future*, the report of the Brundtland Commission, which had been convened by the United Nations. "Sustainable development," said the report, "is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable actions maintain the productivity and biodiversity of renewable resources, including soils, waters, forests, natural areas, and the atmosphere. Such actions can be measured on social, economic, and ecological scales. Kenyon has undertaken an ambitious set of initiatives to incorporate sustainability in all aspects of college life. These efforts, embracing local and global perspectives, include projects designed to evaluate and reduce the College's carbon footprint, to increase the use of locally produced food (see special initiatives section on Food for Thought), to promote the stewardship of our natural, social, and academic environment, and to foster environmental literacy in all members of the community.

The impact of humans on the environment, as well as our dependence upon it, is certain to be a dominant issue for the foreseeable future. Issues that were not evident fifty years ago now inspire social, political, economic, ethical, scientific, and technical policy and innovation. The courses described below address sustainability from such diverse fields as anthropology, biology, chemistry, economics, environmental studies, religious studies, and sociology. They provide a means to understand sustainability from many disciplinary viewpoints, as well as to appreciate its interdisciplinary nature. Working beyond the classroom to engage with the local environment and community is a central part of many of these classes.

To learn more about sustainability at Kenyon, visit Kenyon's Brown Family Environmental Center Web site at <http://www2.kenyon.edu/Bfec/>. To learn more about becoming involved in sustainability initiatives, contact Professor of Biology Siobhan Fennessy, codirector of the - Environmental Studies Concentration and the Brown Family Environmental Center.

## RURAL BY DESIGN

Funded by a grant from the McGregor Foundation, Rural by Design is a three-year project to enhance local rural sustainability. In a holistic approach integrating the arts, humanities, and

sciences, the project explores the broad range of forces--social, economic, environmental, natural--shaping sustainability in an era of expanding globalization.

The initiative provides opportunities for students to make sustainability a central part of the collegiate experience through coursework, summer internships, public projects, and international study. Students will conduct paid summer internships with young farmers to develop sustainable crops on land at the Brown Family Environmental Center and will work with Innovation Greenhouse to develop and execute business models to market these new crops. A yearlong fieldwork course will explore Knox County's public spaces, from region-specific online forums to asphalt-and-concrete town squares, and create activities that foster social connection. An additional project will explore the challenges and opportunities presented by the county's increasing cultural and socioeconomic diversity.

Kenyon is partnering with overseas programs, including the School for Field Studies in Costa Rica, to provide international education and summer internship opportunities for comparative studies in rural sustainability. This work will culminate in an international conference to be held at Kenyon in the spring of 2013.

Students interested in exploring these opportunities should contact Professor of Sociology Howard Sacks.

## COURSES

Each of the courses below addresses themes relevant to sustainability. In some cases, sustainability is central to the entire course; in others, it represents a distinct unit. Please refer to the brief description accompanying each listing, which notes the particular topics examined in the course. Complete course descriptions, as well as instructors, may be found in the listings for each department or program. For additional information, please contact the faculty member involved.

### **ANTH 320 Anthropology of Food**

Credit: .5 unit

Through cross-cultural comparisons, this course addresses the ways in which humans obtain food and specifically examines industrial and alternative foodstreams.

### **ANTH 324 Biocultural Adaptations**

Credit: .5 unit

This course examines the human biology of living populations and provides a deeper

understanding of the biological and cultural factors affecting the health and survival of human groups around the world.

**BIOL 228 Ecology**

Credit: .5 unit

The ecological systems that underlie the study of sustainability are the focus of the course.

**BIOL 229 Ecology Laboratory**

Credit: .25 unit

This course provides direct experience with diverse groups of organisms and the methods used to learn about them.

**BIOL 251 Marine Biology**

Credit: .5 unit

Oceans influence climate, and at the same time climate and human actions strongly influence the ecological communities of ocean habitats. Can oceans sustainably provide needed resources for humans?

**BIOL 352 Aquatic Systems Biology**

Credit: .5 unit

Fresh water is a relatively scarce resource that is limited in its quality and quantity in many parts of the world. A theme of this course is the sustainable use of water to support both freshwater ecosystems and human societies.

**BIOL 353 Aquatic Systems Laboratory**

Credit: .25 unit

This is a field-based, aquatic ecology class designed to explore a diversity of local ecosystems and their physical, chemical, and biological characteristics, including their biodiversity.

**CHEM 108 Solar Energy**

Credit: .5 unit

The exigencies of oil depletion, global warming, and unsustainable growth in energy consumption drive our exploration of several methods of harvesting and harnessing solar energy to replace fossil fuels.

**CHEM 125 Nanoscience and Materials Chemistry**

Credit: .5 unit

Chemical thermodynamics and kinetics, electrochemistry, and molecular orbital theory are used to explore sustainable energy systems such as fossil fuel alternatives, fuel cells, artificial photosynthesis, and photovoltaics.

**CHEM 373 Advanced Organic Chemistry Laboratory**

Credit: .25 unit

Catalysis, or enabling a transformation to occur more quickly and with lower energy input, is the focus of the first half of this course.

**ECON 336 Environmental Economics**

Credit: .5 unit

This course includes a unit on the economic approach to environmental sustainability and the implications this concept has globally, nationally, and locally.

**ENVS 112 Introduction to Environmental Studies**

Credit: .5 unit

The study of sustainability runs throughout this course, which provides an overview of the issues associated with human population growth and development.

**ENVS 253 Sustainable Agriculture**

Credit: .5 unit

The goal of this course is to introduce students to the principles of sustainable agriculture through field experiences on local farms and the study of current literature.

**ENVS 461 Seminar in Environmental Studies**

Credit: .5 unit

This capstone seminar employs a systems approach to the study of sustainability, its viability as a concept, and our progress in reaching the goal of living within the Earth's resources.

**PSCI 363 Global Environmental Politics**

Credit: .5 unit

This course seeks to identify and address many of the most pressing environmental challenges in today's world. Finding genuinely sustainable and participatory solutions to those challenges is a major goal of the course.

**SOCY 234 Community**

Credit: .5 unit

Students conduct field research on various aspects of Knox County rural life to develop public projects that enhance community sustainability.

**SOCY 477Y, 478Y Fieldwork: Rural Life**

Credit: 1 unit

Throughout this course we will investigate the factors affecting community sustainability and the importance of vital communities to our individual and collective well-being.