

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.

ANTH 256 Habitat and Humanity

Credit: .5 unit

This course emphasizes the form and meaning of architecture, its role in cultural formation processes, and explores long-term changes in how humans relate to their habitats and dwellings.

ANTH 343 Contemporary Issues in Native North America

Credit: .5 unit

This course is framed within the present time period and is designed as an advanced exploration of the significant issues affecting American Indians in modern society.

ANTH 460 Whiteness, Power, Race

Credit: .5 unit

This course looks first at how the concepts of "race" and "ethnicity" have been defined within anthropology, particularly American anthropology. This class spends a week discussing environmental racism

BIOL 106 Conservation Biology

Credit: .5 unit

Conservation biology is an integrative discipline that encompasses aspects of evolution, ecology and population biology to understand conservation-related issues in a changing world. Students will learn how genetic, physiological, behavioral, ecological and anthropogenic factors influence population dynamics, and how management practices can ameliorate impacts on biodiversity.

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 229 Ecology Lab

Credit: .25 unit

This course examines techniques for studying ecological principles in the field and laboratory, with primary emphasis on terrestrial systems. Students will learn experimental design, sampling protocols and quantitative methods including spatial analysis with geographic information systems. Topics may include limits to distribution, interactions with the physical environment, population dynamics, species interactions, carbon sequestration and biodiversity.

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 311 Seminar in Restoration Ecology

Credit: .5 unit

This course will examine the ecological theory and practice of restoration ecology through lectures, class discussion, field trips and a class project on restoration design. The science of ecosystem restoration has grown dramatically over the past decades, emerging as an active subdiscipline of biology. The challenges of restoration are many and include our incomplete understanding of the complexity of ecosystems and the limits this places on our ability to predict ecosystem response to restoration efforts.

BIOL 328 Global Ecology and Biogeography

Credit: .5 unit

This is a comprehensive course in the large-scale history and dynamics of the biosphere. The course will focus on ecoinformatics and macroecology, using computational approaches to describe and explain general patterns in the distribution, abundance and functioning of organisms. Special attention will be given to geographical patterns of biodiversity and their basis in both ecological (dispersal, competition) and evolutionary (speciation, extinction) processes.

BIOL 333 Environmental Toxicology

Credit: .5 unit

This course examines the mechanisms by which chemical contaminants impact molecular, organismal and ecological systems. Topics include sources and movement of contaminants in the environment, basics of toxicity testing, molecular mechanisms of contaminant effects and ecological risk assessment.

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 110 Environmental Chemistry

Credit: .5 unit

This course offers an introduction to the chemical basis of environmental issues and the environmental consequences of modern technology, with particular emphasis on air and water pollution. Topics include fossil fuels, nuclear power and solar energy, ozone depletion and the greenhouse effect, pollution and toxicology of heavy metals and pesticides, and environmental impact statements.

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 331 Economics of Development

Credit: .5 unit

Students examine the economic conditions and problems of developing economies, exploring alternative theories of economic development and strategies for achieving development goals. Specific topics include the meaning of development; historical and theoretical perspectives; income distribution; agriculture, population and human resources; industrialization; employment and technology; urbanization and migration; foreign trade, investment and aid; and government planning.

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 104 Solar Power Systems

Credit: .5 unit

Photovoltaic power generation is proving to be a viable renewable alternative to fossil fuels and Kenyon College is embarking on a multi-year plan to install PV systems on several buildings across campus. This course is uniquely situated to take advantage of this endeavor. We will discuss the role energy serves in society and examine the basic physics of energy in general before discussing and comparing traditional fossil fuels versus alternatives. Focusing our attention on PV electrical energy, a series of hands-on lab exercises will explore the science of electricity, PV power generation and linking such systems to the grid.

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 231 Earth Systems Science

Credit: .5 unit

This course introduces students to the physical, chemical and biological processes of these major subsystems (and the interactions among them) by examining past and present states of the Earth system. Humans, as relatively late-coming members of the biosphere, are part of the overall Earth system, and we will examine our interactions within and among the subsystems at the level of the individual and of society.

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 240 Permaculture and Homestead Winter Farming

Credit: .5 unit

This course intends to explore the principles of permaculture that link ecology, sustainability and community to farming.

ENVS 341 Science of Climate Change

Credit: .5 unit

Climate change is the defining environmental issue for our time, permeating conversations about economics, human rights and international relations. In order to engage in these conversations, it is critical to have a solid understanding of Earth's climate system and how humans are altering it. We will begin by examining the natural state of Earth's climate system and the factors that have caused past climate variability. We will investigate how humans have altered the climate system as well as some of the most significant impacts of anthropogenic warming. We will end with a discussion of some proposed science-based approaches to mitigating climate change

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.

PSCI 480 Science and Politics

Credit: .5 unit

This course examines the relationship of science and politics from early modernity to the present and considers the probable course and character of that relationship in the future.

PHIL 190 Anthropocene as a Philosophical Problem

Credit: .5 unit

This course is a philosophical introduction to the environmental humanities, taking the concept of the Anthropocene as our point of departure. We are especially interested in critical examinations of the following concepts and topics: the meanings of ahumana and anaturea, Big History, religion in human evolution, global environmental history, how humans are connected to nature and nonhuman animals, the pastoral ideal and technology, rituals and place, ecology and production of space, environmental justice and the environmentalism of the poor.

HIST 256 Global Crisis

Credit: .5 unit

The displacement and economic consequences of climate change and the fact that global economic inequality is dramatically increasing are interrelated problems. Furthermore, we thought the spread of democracy would help solve these things. It turns out we have been led astray by policymakers, as well as some of the scientists and social scientists who informed them. This course tackles not only the biggest issues confronting our world today, but also the history of how governments, scientists and policymakers have tried to tackle them.

HIST 481 Feast, Fast, Famine

Credit: .5 unit

The course explores the cultural, economic and ecological significance of food in premodern societies

SOCY 101 Powers, Energies, and Peoples

Credit: .5 unit

This course introduces students to the field of sociology through the study of energy and power in several of their conceptual forms: as social levers of oppression and inequities, as the physical capacity behind economic development and material accumulation, and as complicated and contested cultural symbols of tremendous consequence for the natural and social worlds.

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 238 Environmental Sociology

Credit: .5 unit

Environmental sociology embodies a broad, thoughtful application of sociological insights to investigating the ways we shape and are shaped by our surroundings. This course explores through a sociological lens how Western society and more specifically contemporary American society interacts with nature. It frames central questions with regard to differentiating between humans and nature and explaining how interactions between the two vary, and it engages with current debates over conservation, sustainability, development and social justice.

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.