

# ENVIRONMENTAL STUDIES (ENVS)

## ENVS125F Community Gardening (FYS)

This course will provide students with skills and hands-on training so they can garden and grow food for themselves and their community.

Students will participate in UConn's Master Gardener Program, which has been offered to members of the community for 40 years and is well-respected in the gardening and farming community. Course topics will include: "botany, plant pathology, soils, entomology, pesticide safety, integrated pest management (IPM), woody ornamentals, herbaceous ornamentals, vegetables, trees and small fruits, turf grass, invasive plants, weeds, water quality, environmental factors affecting plant growth, and diagnostic techniques for the home gardener."

Hands-on training and application of the skills learned from the UConn Master Gardener Program will take place at Long Lane Farm on Wesleyan University's campus or at home for students learning remotely.

Students who complete this course will receive a certificate and name badge designating them as a University of Connecticut Certified Master Gardener.

This course is offered in partnership by the College of the Environment, Allbritton Center for the Study of Public Life, and UConn Extension Master Gardener Program.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **CSPL115F**

Prereq: **None**

## ENVS130F Thinking Animals: An Introduction to Animal Studies (FYS)

In 1789, British philosopher Jeremy Bentham wrote: "The question is not, 'Can they reason?' nor, 'Can they talk?' but, 'Can they suffer?'" This question, which challenged the social and legal norms of the 18th century that denied sentience to non-human animals, has influenced disciplines across the social sciences and humanities to focus on what has more recently become known as, "the question of the animal." Bentham's question has sparked centuries of debate about the sentience of non-human animals and our relationship to them. In this course, we will examine a range of theories and representations of "the animal" to understand the desire to tame or objectify animals (through zoos, factory farming, and taxidermy), as well as why they are often conceived of as guardians of inaccessible experience and knowledge, and how the human and its various gendered, classed, and racial manifestations have been conceived of through and against notions of animality. Readings may include Poe, Kafka, Derrida, Bataille, Haraway, and Coetzee (among others).

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-COL**

Identical With: **COL130F, FGSS130F**

Prereq: **None**

## ENVS135 American Food

This course investigates topics in the history of food production from the colonial period to the present, with emphasis on the American contribution to the development of world food systems and cultures of consumption. Topics to be addressed include the production of agricultural commodities, development of national markets, mass production of food, industrialization of agriculture, and the recent emergence of organics, slow food, and local movements.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST135**

Prereq: **None**

## ENVS186 Justifying Space: The History and Future of Space Exploration Visions

This will be a seminar class about the changing visions and motivations for space exploration, historically and to the present day. Readings will include historical perspectives such as those of K. Tsiolkovsky, H.G. Wells, Arthur C. Clarke, Gerard O'Neil, and Carl Sagan, the poetry of Diane Ackerman, the newsletters of space enthusiast organizations such as the National Space Society, the L5 society, and the Planetary Society, as well as more current readings from the popular and space policy literature. Perspectives will also include other cultural reference frames through readings from the literatures of Afrofuturism and Chinese science fiction. Through selected readings from both the fiction and nonfiction literature, students will become familiar with the history of space advocacy, and the various idealistic and utopian predictions and visions that have been associated over time with ideas of human crewed and uncrewed space exploration. We will look critically at how past visions and promises have measured up against the reality of space exploration and also, through this lens, critically examine the visions and motivations being espoused by today's range of government and corporate space organizations and enthusiasts.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ENVS**

Prereq: **None**

## ENVS188 Neotropical Aquatic Ecosystems: Their Importance, Sustainable Use and Conservation (CLAC 1.0)

This course will examine why the Orinoco and Amazon basins in South America harbor a biological richness much larger than other river basins around the world. About 50% of all higher plant species of the world are included in these basins. Data on vertebrates showed that about 3,000 freshwater fish species, thousands of birds (migratory and local), and hundreds of amphibians, reptiles, and mammals have been found so far in those basins geographically included in six countries: Bolivia, Brazil, Colombia, Ecuador, Peru, and Venezuela. We will examine the key factors that have affected their historical-geological development, the actual richness, and the threats to sustainable development and conservation. We will ask questions about the nature and interactions of the key factors and agents that harbor and transformed the high ichthyological and other aquatic biota diversity, reflected by the wide range of landscapes and aquatic ecosystems included in those basins. We will try to identify fragile aquatic ecosystems depending upon the biological richness, endemism, importance for local communities, and potential threats. We will examine the current trends in the fisheries, forest exploitation, and agriculture for human consumption, noting that stocks of many species of fish are in steep decline, and that current fishing practices are not sustainable. Finally, the major impacts and threats faced by the fishes and aquatic ecosystems of the Orinoco River Basin are discussed with the purpose of studying potential plans for sustainable development. The course is presented in a reading/discussion format in which all readings, writings, and discussions will be in Spanish.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **LAST188, CGST266**

Prereq: **SPAN221**

#### **ENVS197 Introduction to Environmental Studies**

This course explores the interdisciplinary field of environmental studies to better understand the characteristics of human interaction with and dependence on the environment, and the causes and consequences of environmental degradation at local and global scales. We will explore key processes, characteristics, and phenomena of the natural world, and relevant human system and social dynamics. We will apply this information to identifying important issues and trends of global climate change and sustainability. Projects facilitate synthesis and application, skill development, reflection, and independent exploration.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **BIOL197, E&ES197**

Prereq: **None**

#### **ENVS201 Body and Earth: Emergent Strategies for Reimagining the Human-Environment Relationship**

We live in a world in which humans are inextricably connected to nature, humanity's life support system. Yet at the same time we live on a planet in peril, in which environmentalists across the globe are working to catalyze societal transformation for sustainable living on Earth. This course explores these themes by 1) analyzing how social and ecological systems are intertwined, 2) exploring diverse ways of knowing nature through movement and mindfulness exercises, and 3) investigating and communicating mechanisms of sustainable environmental practice. The course will introduce conceptual frameworks and methodologies to explore the embeddedness of humans in nature—a task that remains critical for addressing today's environmental challenges. Students will engage with interdisciplinary frameworks engaging in environmental problem solving, as well as movement and place-based approaches for experiential learning. Through case studies and individual storytelling projects, we will examine how embeddedness in nature, interdisciplinary perspectives, and human agency provide sustainable pathways for both people and planet.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-ENVS**

Identical With: **DANC203**

Prereq: **BIOL182 OR BIOL216 OR ENVS197 OR E&ES199**

#### **ENVS202 Constructing the Human: Humans and Animals in the Hebrew Bible**

How do we define "humanness" and what assumptions do we make about our own distinctions between "humans" and "animals" through this definition? This course will look at the process of constructing the human category in the ancient world and Hebrew Bible and then compare that process to our own modern conceptions of humanness. In what ways are they similar and in what ways are they different? How can ancient examples of the human category inform our own ethical understandings of what it means to be human?

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-RELI**

Identical With: **RELI202, CJST202**

Prereq: **None**

#### **ENVS203 The Secrets of Ancient Bones: Discovering Ancient DNA and Archaeology**

New analyses of ancient DNA preserved for millennia in bones and soils have revolutionized the field of archaeology. Suddenly, archaeologists have gained

new insight into human origins, past population migrations, ancient diseases, plant and animal domestication, and even the factors that contributed to the extinctions of megafauna such as woolly mammoths. Recent genetic case studies will provide a lens for learning about the archaeology of diverse world regions and time periods, from Oceania to Mesoamerica and from the Paleolithic through recent history. Topics will include: human evolution and genetic relationships between humans, Neanderthals, and Denisovans; the peopling of the globe; extinction and de-extinction; domestication and the origins of agriculture; paleodiseases and paleodiets; and ethics in genetic research.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ARCP**

Identical With: **ARCP203, ANTH212, SISP203, IDEA203**

Prereq: **None**

#### **ENVS204 Extreme Landscapes of the Anthropocene**

The "Anthropocene," a term coined to categorize the current geological epoch, has become a way in which social scientists can critically and creatively engage with the impact of humanity on the ecological well-being of the Earth. The interdisciplinary and uncertain nature of this subject matter provides space for experimental writing styles, innovative approaches to storytelling, and critical discussion and debate. This course is designed to explore and challenge the term "Anthropocene," questioning how narrative and drama are entangled in the dissemination of complex truths, for better or worse.

In this course, we will consider texts, short films, and other mixed media that investigate the everydayness of extreme landscapes, from "capitalist ruins" to the depleting seas. We will dive into the social, political, economic, and scientific power-scapes that influence narratives about the environment, from late liberal ideology to corporate influence on science and the news. Through the course materials and activities, we will question how to communicate complex information with a broad range of people, particularly surrounding issues of climate change, sustainability, and environmental justice. Each student will build their own writing portfolio of short essays for specific audiences. The class will collectively build and design a storytelling website where they can share their work. Students are encouraged to apply an ethics of care and the art of "non-judgmental attention" to their critical engagement with the Anthropocene.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-SISP**

Identical With: **SISP204, WRCT204, ANTH204**

Prereq: **None**

#### **ENVS205 Sciences as Social and Cultural Practices**

Philosophers long construed scientific knowledge as achieved and assessed by individual knowers, but recent work has recognized a greater epistemic role for scientific communities, disciplines, or practices and has taken seriously the social and cultural context of scientific research. This course surveys some of the social, cultural, and political aspects of the sciences that have been most important for scholars in science studies, including differences between experimental, field, and theoretical science; the role of disciplines and other institutions in the sciences; interactions between science and its various publics; the politics of scientific expertise and science policy; the globalization of science; the social dimensions of scientific normativity, from metrology to conceptions of objectivity; race and gender in science; and conceptual exchanges between sciences and other discursive practices. The concept of the social will also receive critical attention in its purported contrasts to what is individual, natural, rational, or cultural.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-SISP**

Identical With: **SISP205, PHIL288**

Prereq: **None**

#### **ENVS206 Public Policy**

"Public policy" describes the patterns of actions employed by the government to achieve a variety of social goals. Some of these actions may be of great consequence (e.g., incarcerating prisoners, providing income maintenance to the poor, preventing deaths from pollution or workplace hazards). This course provides a survey of several key public policies in the United States. It will begin with an exploration of the policy-making process, policy design, and policy evaluation. The remainder of the course will be devoted to the examination of several key public policy areas including criminal justice, education, social welfare, economic management, health care, and environmental protection regulation. By integrating theoretical debates and the historical evolution of core public policies, the course aims to develop analytical skills as well as an appreciation for the technical and political complexities of policy-making.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-GOVT**

Identical With: **GOVT206**

Prereq: **None**

#### **ENVS207 Introduction to Archaeology**

What can fragments of pottery, stones, and bones reveal about the lives of people who lived thousands or even millions of years ago? What does the archaeological record reveal about human evolution, past human diets and health, ancient socioeconomic systems, and the emergence of early cities? And how can we preserve archaeological sites and artifacts for future generations? This course will introduce students to the interdisciplinary field of archaeology. We will discuss key methods and principles that archaeologists use to study the human past while covering a survey of world prehistory from the earliest stone tools to the archaeology of contemporary material culture. Students will have the opportunity to examine real archaeological artifacts--including artifacts excavated from historic Middletown--and will be encouraged to think critically about the ways that archaeology informs our understanding of both the past and the present.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ARCP**

Identical With: **ARCP204, ANTH214, IDEA204**

Prereq: **None**

#### **ENVS208 System Mapping for Social and Environmental Impact**

In recent years, growing interest in social entrepreneurship has pushed students to "solve" complex social and environmental problems with new ventures of their own design. Unfortunately, this approach often overlooks a critical foundation of social change: understanding the root causes of problems and the contexts that surround them before seeking solutions.

In this six-week, half-credit class, students will study a problem and the systems that surround it. By the end of the course, students will create a "systems map" that documents the economic, political, and cultural factors behind their problem, as well as the current "solutions landscape."

Offering: **Crosslisting**

Grading: **Cr/U**

Credits: **0.50**

Gen Ed Area: **SBS-ALLB**

Identical With: **CSPL257, AFAM257**

Prereq: **None**

#### **ENVS209F Interrogating Sustainability (FYS)**

In 1987, the United Nations' publication "Our Common Future" -- also known as the "Brundtland Report" -- elevated sustainability as a central concern in international policymaking. The report focused on sustainable development as an essential method for achieving sustainability, defining it as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." Since then, sustainable development and other methods for fostering sustainability have played an important role in debates related to environmental, economic, and social policies at multiple scales around the world. In this course, we will interrogate the concept of sustainability, examining its history, its impact on environmental policies and social and economic development, critiques of the sustainability concept, and alternative visions for securing equity between current and future inhabitants of the earth. As a first year seminar, the course will use a variety of scaffolded writing assignments along with readings, discussions, and films to explore concepts including the commons, climate change, water scarcity, petrochemical and plastic pollution, land use, biodiversity loss, industrial agriculture, One Health, degrowth, ethical consumers, and circular economies.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **None**

#### **ENVS210 Evolution in Human-Altered Environments**

Human activities have altered natural environments and, indeed, have created entirely novel ecosystems such as cities and high-input farms. This course examines how these human alterations to the environment affect the evolution and coevolution of diverse organisms. Starting with an intensive overview of microevolutionary processes, we will consider a number of contemporary scenarios: evolutionary response to environmental contaminants, exploitation of natural populations, and global climate change; evolution in urban and agricultural ecosystems; and the evolutionary impact of nonnative, invasive, and genetically modified organisms.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL215, BIOL515**

Prereq: **[BIOL182 or MB&B182]**

#### **ENVS211 History of Ecology**

The word "ecology" has come to have many meanings and connotations: a scientific field dealing with the relation of organisms and the environment, a way of thinking about the world emphasizing holism and interconnection, a handmaiden of the environmental movement, to name a few. This course covers the history of ecology as a scientific discipline from the 18th-century natural history tradition to the development of population, ecosystem, and evolutionary ecology in the 20th century, situating the science in its cultural, political, and social contexts. Along the way, it traces the connections between ecology and economic development, political theory, ideas about society, the management of natural resources, the preservation of wilderness, and environmental politics. How have scientists, citizens, and activists made use of ecological ideas, and to what ends? How have they understood and envisioned the human place in nature? How have the landscapes and places in which ecologists have done their work shaped their ideas? Other major themes include the relationship between theories of nature and theories of society, ecology and empire, the relationship between place and knowledge about nature, the development of ecology as a professional discipline, the role of ecologists as environmental experts, the relationship between the state and the development of ecological knowledge, and the relationships among ecology, conservation, agriculture, and environmentalism.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST221, SISP221**

Prereq: **None**

#### **ENVS212 Introduction to Ethics**

This course will begin with some ancient questions about values. We find that two ancient approaches to right living (Platonic-Stoic and Aristotelian) differ radically over how much experience or society can teach us about what is good. Yet both insist that moral life is essentially connected to individual happiness.

Turning next to modern ideas of moral action (Kantian and utilitarian), we find that they both emphasize a potential gulf between individual happiness and moral rightness. Yet, like the ancients, they disagree over whether morality's basic insights derive from experience.

The last third of the course explores more recent preoccupations with ideas about moral difference, moral change, and the relation between morality and power. Especially since Marx and Nietzsche, moral theory faces a sustained challenge from social theorists who allege moral norms and judgments serve hidden ideological purposes. Some have sought to repair universal ethics by giving an account of progress or the overcoming of bias, while others have argued for plural or relative ethics. Ecological critics have challenged moral theorists to overcome their preoccupation with exclusively human interests and ideals. What kinds of moral reflection might be adequate to problems of global interdependence?

Students will come to understand the distinctive insights and arguments behind all of the positions considered, to recognize more and less cogent lines of response to them, and to shape their own patterns of moral reasoning through careful reflection.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-PHIL**

Identical With: **PHIL212**

Prereq: **None**

#### **ENVS213 Invoking the Earth Mother: Ecofeminisms and Indigenous Spiritual Ecologies**

Over the past 50 years, a radical reshaping of our relationship to the organic world has infused national economic strategies, United Nations discourses, indigenous land rights movements, environmental legal frameworks, and a subtle mainstreaming of neopagan ritual practices and goddess worship in the Americas. This seminar will explore the social, legal and metaphysical aspects of myriad eco-feminist and indigenous spiritual ecologies. We will explore these worldviews and ritual practices from animist, pantheist, monist, and panentheist perspectives, with a particular focus on gender constructs, implicit and explicit, within these movements. What is the relationship between the 1970s environmental movement and the rise of Goddess worship in the U.S.? Between the United Nations and Amazonian ayahuasca practitioners? Legally, Should Trees Have Standing (Stone 1972)? Politically, Is the Goddess a Feminist (Hiltebeitel & Erndl 2000)? Is Mother Earth, ultimately, empowering for LGBTQ2S folks? Engaging emerging podcasts, shamanic documentaries, social manifestos, and provocative religious studies texts, students will wrestle with a profound set of humanistic questions that may prove crucial to our survival as a species, namely: under what circumstances do we successfully invoke the gods to self-

regulate the ecologically destructive practices of our late-stage capitalism? Who invokes who, how and when, shared where? To whom do we tend to listen on these matters, and why are they quaked to speak?

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-RELI**

Identical With: **RELI204, FGSS204**

Prereq: **None**

#### **ENVS214 Climate Change Economics and Policy**

This course introduces students to the role of applied economics in climate change policy and analysis. Students will learn how economists view climate change causes, mitigation, adaptation, and policy challenges. Key topics include: economics of market failures, socially optimal greenhouse gas emissions, overview of theoretical and real-world policies to reduce emissions, evaluating the relative abatement costs of command and control versus market-based policies, valuing climate change impacts, evidence of adaptation strategies in the economy, discounting costs and benefits across multiple generations, impacts of uncertainty on optimal policy design, the role of international cooperation and consequences of unilateral action, and distributional effects.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ECON**

Identical With: **ECON210**

Prereq: **ECON110**

#### **ENVS215 Humans, Animals, and Nature**

A variety of important issues are central to understanding the complexity of relationships between humans, nonhumans, and the rest of nature. The goals of the course are to help students to think critically, to read carefully, to argue well, and to defend their own reasoned views about the moral relations between humans, animals, and nature.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-PHIL**

Identical With: **PHIL215, SISP214**

Prereq: **None**

#### **ENVS216 Ecology**

Ecology is the scientific study of interactions between organisms and their environment, both biotic and abiotic. We will look at how these interactions shape fundamental characteristics of populations, communities, and ecosystems. Topics will include predation, competition, symbioses, and effects of stress and resource limitation in diverse environments. We will cover important consequences of interactions such as coevolution, population outbreaks, ecological coexistence, patterns of biodiversity, ecological succession, species invasions, food web dynamics, nutrient and energy cycling, variation in ecosystem goods and services, and global change.

This course emphasizes several learning goals in biology, including skill in formulating original ideas and experiments, using quantitative and graphical tools and interpreting quantitative information, and scientific writing.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL216**

Prereq: **[BIOL182 or MB&B182]**

**ENVS217 The Environment, The Bible, and Moral Debate**

The environment is a pressing concern for many people and is the center of much modern debate. Within this debate, many people draw on biblical texts for a source of religious or moral superiority. These biblical texts have been used to support many different, and often contradictory, arguments within the environmental debate. So what does the bible actually say about the environment? Is there a singular "biblical" view about what the environment is and how one should treat it? This course aims to look at how the bible has been used in environmental debate and then look at the texts cited, analyzing both in a modern and ancient context.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-RELI**

Identical With: **RELI217, CJST219**

Prereq: **None**

**ENVS218 Nature/Culture**

In this course, we are going to explore--and problematize--the boundary between the so-called "natural" world and human social and cultural life. Rather than assuming that "nature" is something that already exists in the world that humans have systematically excoriated and transformed, we consider instead the idea that nature and culture are fundamentally co-constitutive concepts--that is to say, that one cannot exist without the other. As we go, we will explore pressing concerns such as the boundaries between human and non-human, the nature of the Anthropocene, the question of what it means to be "modern," and the power of ecological politics in our contemporary orders of global capitalism.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-ANTH**

Identical With: **ANTH215, SIS255**

Prereq: **None**

**ENVS219F Knowing the Natural World (FYS)**

As humans we interact with the natural world through a wide array of perspectives. Nature is an adversary, a food pantry and medicine cabinet, a force to be reckoned with, mimicked, managed and revered. This course will explore various ways that humans experience and understand the natural world through a series of sensory, scientific, intellectual and creative investigations (some outdoors), and reflection and synthesis. Topics include the human biology that shapes our views (e.g., sensory systems), ecological interactions, land development and conservation, environmental assessment, biomimicry, food production and diversity, wildlife interactions, aesthetic and spiritual appreciation, and sustainability.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **None**

**ENVS220 Conservation Biology**

This course will focus on the biology of conservation rather than cultural aspects of conservation. However, conservation issues will be placed in the context of ethics, economics, and politics. We will cover the fundamental processes that threaten wild populations, structure ecological communities, and determine the functioning of ecosystems. From this basis, we will explore important conservation issues such as habitat loss and alteration, overharvesting, food web alteration, invasive species, and climate change. We will use readings from the primary literature and field projects to learn about current research methods used in conservation biology.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL220**

Prereq: **BIOL182 OR MB&B182 OR BIOL182Z**

**ENVS221 Environmental Policy**

Arguably, environmental protection is the most complex and fascinating regulatory policy area. This course explores U.S. environmental regulation. We will examine the key features of policy and administration in each major area of environmental policy. Moreover, we will place regulation in a larger context and examine the factors that shape the environmental decisions of various economic actors. Although the course focuses primarily on domestic policy, at various points in the course we will draw both on comparative examples and the challenges associated with coordinating national policies and practices on an international level.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-GOVT**

Identical With: **GOVT221**

Prereq: **None**

**ENVS222 Metabolism and Technoscience**

This course will investigate the scientific idea of metabolism through the lens of technoscience. Metabolism is a flexible and mobile scientific idea, one that has been applied at the micro-level of analysis within biological organisms, at the meso-level of social collectivities, and at the macro-level of global ecologies. Metabolism encompasses all of the biological and technosocial processes through which bodies (both human and not human) and societies (again, human and not) create and use nutrients, medicines, toxins, and fuels. The lens of technoscience enables us to investigate the technological and scientific practices that define and drive metabolic processes within sciences, cultures, and political economies. These processes implicate forces of production, consumption, labor, absorption, medicalization, appropriation, expansion, growth, surveillance, regulation, and enumeration. Accordingly, as we will learn, metabolism is also a profoundly political process that is inextricably linked to systems that create structural and symbolic violence as well as modes of resistance and struggle. In these contexts, we will interpret some of the most pressing metabolic crises facing human societies, including ecological disaster, industrial food regimes, metabolic health problems, and industrial-scale pollution.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-SISP**

Identical With: **SISP215**

Prereq: **None**

**ENVS223 Chinese Eco-Civilization: History, Experience, and Myths**

The course traces the historical roots of the ideas of eco-civilization, a policy platform that appeared in the twenty-first century by examining how Chinese agrarian civilizations and their nomadic neighbors transformed the bio-physical environment over the course of 3,000 years of history.

We will draw on translations of Chinese literary texts including poetry, classical prose, and novels to explore the relationship between power and social inequities as we explore the everyday politics of agrarian civilizations through China's transformation from feudal ages to the modern period. How did Confucian, Legalist, Buddhist, and Daoist teachings alter the dynamics of production and consumption? To what extent did traditional Chinese philosophies promote the ethos of ecojustice? Did competing regimes/dynasties create a sustainable political and economic system? Did bureaucrats improve the well-being of the population and maintain the balance of the ecosystem? Or did they deplete natural resources to meet their short-term needs?

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST223, CEAS223, SISP284**

Prereq: **None**

#### **ENVS224 Intro to History: Biodiversity and its Histories**

Biodiversity loss may portend the next mass extinction, but what is biodiversity? Euro-American concepts of biodiversity have become a category of policy and politics at local, regional, national, and international levels. This course will track the development of these concepts from the 18th century to the present, paying special attention to the growth of natural history collections to document taxonomy, evolution, biogeography and ecology of species. How does the idea of living variation in genes, traits, species, and ecosystems relate to human and non-human beings?

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST179**

Prereq: **None**

#### **ENVS225 Liminal Animals: Animals in Urban Spaces**

This course examines the major ways in which nonhuman animals influence and are influenced by human-built environments, with specific attention to the ethical, political, and social dimensions of human-animal interactions in these spaces. Discussions, films, readings, and an independent research project will introduce students to key concepts related to urban/suburban animal life. Specifically, it will focus on topics including the use of animals for food, the use of animals as spectacle or entertainment, animals as human companions, urban wildlife, "invasive" species, "vermin" and "problem" animals, animals and the law, ecological webs, and human encroachment in animal spaces.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **None**

Identical With: **SISP223**

Prereq: **None**

#### **ENVS226 Invasive Species: Biology, Policy, and Management**

Invasive species account for 39 percent of the known species extinctions on Earth, and they are responsible for environmental damages totaling greater than \$138 billion per year. However, the general population has little knowledge of what invasive species are or what threats they pose to society. In this course, we will explore the biological, economic, political, and social impacts of invasive species. We will begin by exploring a definition of an invasive species and looking at the life history characteristics that make them likely to become pests. Then we will consider the effects of invasive species expansion on the conservation of biodiversity and ecosystem function, as well as their global environmental and political impacts. Finally, we will explore the potential future changes in invasive species distributions under a changing climate.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL226, E&ES240**

Prereq: **[E&ES197 or BIOL197 or ENVS197] OR [BIOL182 or MB&B182] OR E&ES199**

#### **ENVS227 A Thousand Years of Iteration: Design for an Uncertain Future**

The climate emergency is a product of design. Centuries worth of aesthetic and industrial innovation have created extractive infrastructure, efficient machines, and disposable products that make it increasingly easy to consume energy

and resources on a global scale. As new conversations about just transitions, a circular economy, and a Green New Deal have begun to proliferate among designers, the discipline's troubled relationship to notions of "progress" remains largely unquestioned.

This reading- and research-intensive studio asks students to examine this history of technology and to critically evaluate shifting theoretical perspectives on nature and human development as they relate to design. Topics will include the lifespan of buildings and products, relationships with and obligations to materials and resources, and strategies for de-growth in indigenous and vernacular design precedents. These will be studied through assigned readings and in-class discussion, a series of design exercises, and the production of a final project from materials immediately at hand in Middletown.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST221, IDEA221**

Prereq: **None**

#### **ENVS228 Going Green, German-Style: The Relationship to Nature, 1800--Today**

Few countries display as active a commitment to protect natural resources and the environment as Germany. Its focus on renewable energies, recycling, and conservation in general is unique even by European standards, and in the U.S., Germany's policies on sustainability and environmental preservation are often held up as models. It is important to recognize, however, that Germans did not achieve this degree of environmental awareness overnight. Rather, it represents the result of centuries of contemplating, controlling, and conserving nature and cannot simply be transferred to other cultures. In this course, we will examine the German (and European) cultural tradition by analyzing artworks and texts from the past two centuries that have both expressed and shaped salient attitudes and emotional responses. The goals of the course are to provide insight into Germany's long and complicated history of defining and relating to nature and to allow you to reflect critically on your own attitudes toward nature and the environment.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-GRST**

Identical With: **GRST228, GELT228**

Prereq: **None**

#### **ENVS229 What Can the Middle Ages Teach Us About Nature?**

Today nature is at the center of our preoccupations. This course will go back to a time before human beings thought they were the masters of nature, when nature was at the same time teaching and allegory, metaphor and science. We will explore the different functions of nature in bestiaries, poems, romances, and herbaria from the Middle Ages to the beginning of the Early-Modern period (in modern French translation). We will be able to see a real herbarium in the Special Collections & Archives. Students will also visit the Davison Center for the Arts and the Joe Webb Peoples Museum to explore visual representations of nature as well as scientific displays. During the semester, students will put together a herbarium that will be displayed in an exhibition at the end of the semester.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-RLAN**

Identical With: **FREN229, MDST227**

Prereq: **None**

**ENVS230F The Simple Life (FYS)**

As the human population grows toward nine billion and our planet's carrying capacity comes under increasing pressure, many observers believe the human project itself is at risk. What human beings have accomplished is probably unique in the history of the universe; once lost to war, famine, and ecological collapse, the understandings and physical creations of our cultures will be irrecoverable. We must ask ourselves, with considerable urgency, the following questions: How do our values, our economic systems, and our behaviors--as individuals, groups, societies, and cultures--affect the conditions under which we, future generations, and the plants and animals with which we share the earth might live in the future? To what extent and at what cost can technology enable us to adapt to changes already under way? Should we take an "après moi, le déluge" attitude or try to prolong the life of our species, and if so, in what form? Does the so-called simple life, as conceptualized in different times and places, offer any useful models? Does living "green" make sense? What about environmental (in)justice? This course will draw on texts from a variety of periods and disciplines, written in a range of styles and from many perspectives, to examine how these questions and others can be approached. Creative thinking will be strongly encouraged. We will pay particular attention to contemporary sustainability initiatives and threats to the environment in the present moment.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-GRST**

Identical With: **GRST230F, GELT230F**

Prereq: **None**

**ENVS232 Ecological Design I: Being at Home in the World**

Being at Home in the World is an introduction to the skills and thinking involved in the ecologically responsible creation of objects. This course is intended to provide a foundational understanding of the language of design, sources of materials, and energy systems. The studio encourages students to develop a rigorous, iterative working method to deeply analyze the nature of land and resources, explore options, and test ideas. This process of making is complemented and supported by an introduction to the history and theory of design, training with techniques and equipment, and active practice in keeping a sketchbook. Early exercises and projects in the course build familiarity and confidence with analytical drawing, making, and modeling techniques, which build toward the creation of a novel piece of design work presented at the final review.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST220, IDEA120**

Prereq: **None**

**ENVS233 Geobiology**

Fossils provide a glimpse into the form and structure of ancient ecosystems. Geobiology is the study of the two-way interactions between life (biology) and rocks (geology). Typically, this involves studying fossils within the context of their sedimentary setting. In this course, we will explore the geologic record of these interactions, including the fundamentals of evolutionary patterns, the origins and evolution of early life, mass extinctions, and the history of the impact of life on the climate.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES234, BIOL233**

Prereq: **E&ES101 OR E&ES115 OR E&ES155 OR E&ES199 OR [ENVS197 or BIOL197 or E&ES197]**

**ENVS235 Calderwood Seminar in Public Writing: Radical Sustainability**

The environmental challenges widely known and discussed for the past 50 years not only remain: they have grown. Maybe we haven't worked hard enough, or maybe we've been going about sustainability the wrong way. Radical sustainability explores the intersection of these now-critical challenges--extinction, climate change, and many others--as well as the physical and social constraints on action to address them. Our aim is to identify the pressure points for an effective response within the geo-ecosystem and the human systems embedded within it, and then to focus on making change through writing.

Calderwood Seminars in Public Writing are writing-intensive courses that emphasize writing for general audiences about expert subject matters. Students work with their peers to hone the skills that enable them to translate scientific understanding of sustainability for the public. Using an intensive author/editor model, students will explore public communication in a variety of forms, including news articles, radio features, and editorials. The goal is prose that is polished and persuasive. Course readings are chosen to highlight the physical nature of human systems as they relate to natural systems. While there is no prerequisite, the course is intended for upper-level students with experience in environmental and sustainability studies.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-PHYS**

Identical With: **PHYS105, WRCT235**

Prereq: **None**

**ENVS236 Nuclear Power Plant Design and the Three Mile Island, Chernobyl and Fukushima Accidents**

This course provides an introduction to radiation, nuclear physics, and nuclear power plant design. It will trace the steps that led to the three most well-known nuclear power plant accidents: Three Mile Island, Chernobyl, and Fukushima. It provides information useful for evaluating the impact of nuclear power on environmental decision-making.

Starting with a history of the atomic discoveries and fundamental physics that led to the atomic bomb production at the end of WWII, the course will then trace the design steps that allowed commercial nuclear power plants to evolve from those weapon-making discoveries. Finally it will trace the accidents and the aftermath from the Three Mile Island, Chernobyl, and Fukushima nuclear power accidents.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES236**

Prereq: **None**

**ENVS237 Introduction to History: Environment**

Humans have profoundly altered the character of Earth's environment since the advent of agriculture and settled societies some 10,000 years ago. This course is a study of the historical relationship between human beings and their habitats, with additional attention to arid lands as places of settlement, cultivation, and development. We explore how global problems such as climate change, biodiversity attenuation, and depletion of fossil soils, fuels, and water are linked to social problems such as economic inequality, food insecurity, conflict, and declining public health. The course reviews evidence of major environmental problems; considers how varied academic disciplines address them; and models a historical approach to understanding environmental change.

The course is divided into two parts: "Environmental Concepts," and "Case Studies." In Spring 2022, the case studies will be devoted to biodiversity.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST190, SISP190**

Prereq: **None**

#### **ENVS238 Bioethics and the Animal/Human Boundary**

In this course, we will explore the construction of the animal/human boundary through the lens of bioethics. We will define bioethics as the study of the ethical consideration of medical, scientific, and technological advances and their effects on living beings. At the same time, we will pay close attention to the cultural contexts in which these advances emerge, imagining the realms of scientific progress and popular culture as mutually constitutive. We will consider topics such as cloning, organ transplantation, pharmaceutical testing, and gestational surrogacy, with a focus on the late 20th and early 21st centuries. We will begin by interrogating how ideas of the "animal" and the "human" are constructed through biomedical and cultural discourses. We will ask, How is the human defined? By intelligence or consciousness levels? By physical capabilities or esoteric qualities? Similarly, how has the human been defined against ideas of the animal? Or, what ethical justifications have been cited in the use of animals in biomedicine? What makes certain species "proper" research subjects and others not? What do these formulations tell us about our valuation of animal and human life, and what kinds of relationships exist between the two? To answer these questions, we will consult a wide range of interdisciplinary scholarship, from authors in the fields of animal/ity studies, bioethics and medicine/science history, sociology, anthropology, and philosophy. Students will also be exposed to the basics of biopolitical theory.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-AMST**

Identical With: **AMST260, SISP260**

Prereq: **None**

#### **ENVS239 Renewable Energy**

This course is an introduction to renewable energy from an Earth science perspective, covering the physical principles of power generation from natural energy flows and the transformation, transmission, and storage of energy on the electrical grid, as well as topics from energy markets and utilization. We focus on hydroelectric, wind, solar, geothermal, wave, and tidal energy, along with modern bioenergy. For comparison, we also briefly cover the conventional energy technology of fossil fuels and nuclear power. We discuss each renewable energy resource, including the advantages, disadvantages, and environmental impacts of its accompanying technology. The course is quantitative with bi-weekly problem sets. Students are expected to gain theoretical and practical knowledge of renewable energy.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES254**

Prereq: **None**

#### **ENVS242 Quantitative Methods for the Biological and Environmental Sciences**

This course offers an applied approach to statistics used in the biological, environmental, and earth sciences. Statistics will be taught from a geometric perspective so that students can more easily understand the derivations of formulae. We will learn about deduction and hypothesis testing as well as the assumptions that methods make and how violations affect applied outcomes. Emphasis will be on analysis of data, and there will be many problem sets to

solve to help students become fluent with the methods. The course will focus on data and methods for continuous variables. In addition to basic statistics, we will cover regression, ANOVA, and contingency tables.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL242, BIOL542, E&ES270, E&ES570**

Prereq: **None**

#### **ENVS247 Ecologies of Attention: Biosemiosis, Attunement, and Ethics**

We consider variants on biosemiotic accounts of meaning, following one thread through Emerson to Nietzsche, another from Peirce and James to Bateson (Ecology of Mind, 1972) and Gibson (Ecological Approach to Visual Perception, 1979), and a third through contemporary indigenous thinkers and anthropologists attempting to bridge scientific ecology and animist panpsychism--Kimmerer, Whyte, Kohn, Ingold, Strathern. While most of the texts here focus on the nature of meaning as a living process, they are also in constant dialogue with normative concerns, being both motivated by subversive or non-humanist ecological values and inspiring distinctive insights about how to lead meaningfully connected lives.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-CHUM**

Identical With: **CHUM366, PHIL354**

Prereq: **None**

#### **ENVS248 Environmental Investigation and Remediation**

This course will cover environmental investigation and remediation methods in varying geologic settings and how they have changed over time due to regulatory changes and advances in technology. An introduction to various aspects of environmental consulting will be incorporated throughout the term using case studies, guest lecturers, and emerging trends and research from online sources.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES248**

Prereq: **E&ES101 OR E&ES115 OR E&ES199 OR E&ES197**

#### **ENVS250Z Pandemic and the Environment**

The COVID-19 pandemic is a global disturbance with important environmental causes, effects, and interactions. We will explore four key topics, evaluating what occurred and implications for future policy and practice. Wildlife: SARS-CoV-2 is a zoonotic disease, facilitated by "bush meat" markets and development of habitat that bring wildlife in close proximity to each other and humans. Stay-at-home orders, and temporary abandonment of human spaces released wildlife from constraints, while exposing the nature of our interdependence. Air pollution: Rates of hospitalization and mortality are greatest for those living with chronically high levels of air pollution, particularly PM

We will examine these themes through readings and apply our understanding of scientific process, peer-review, sources of data, context, voice, and audience.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **None**

#### **ENVS251 Genes to Greens: The Biology of Food Production**

Climate change and rapid advances in biological technology are shifting the ways humans grow food. We can now produce food more efficiently than ever, but are losing arable land to harsh and unforgiving climates. We also must grapple with



ethical questions about which natural resources we should sacrifice for the good of the global food supply. In this course, students will gain an understanding of plant physiology, traditional agricultural techniques, and traditional and modern crop breeding strategies. Students will engage in the current debates surrounding food production.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL259**

Prereq: **None**

#### **ENVS252 Industrializations: Commodities in World History**

This course defines "industrialization" broadly to encompass the development and application of systematic knowledge to agriculture and manufacturing in 18th- to 21st-century societies. Although special attention will be devoted to the British and American examples, the course will be organized by commodity rather than nationality, focusing on traffic in materials used in production of food, clothing, and medicines, for example, cotton, rubber, guano, wheat, bananas, and quinine.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST252**

Prereq: **None**

#### **ENVS253 Energy Sustainability: An examination of US, New England and Connecticut Energy**

This course will survey the state of energy generation and use in Connecticut, New England, and the U.S. It will include fundamental characteristics of fossil, nuclear, and renewable energy, plus their impact on the local and national energy grid. It will examine how utilities maintain power, including the variable nature of many renewable sources. The course will also examine fuel reliability and impact on local and global air pollution. The course will examine pathways forward for the local and national energy grid. One to two site visits may be incorporated as part of the class, with potential sites including: ISO New England (Holyoke, Mass.), Trash-to-Energy (Hartford, Conn.), combined cycle plant, Kleen Energy plant (Middletown, Conn.), and Combined Heat & Power (UConn Cogen).

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES253**

Prereq: **None**

#### **ENVS254 Architecture of the 20th Century**

The course considers influential works in architecture, its theory and criticism, and ideas for urbanism, mostly in Europe and the United States, from about 1900 to the present. Early parts of the semester focus on the origin and development of the modern movement in Europe to 1940, with attention given to selected American developments before World War II. Later parts of the course deal with Western architecture from 1945 to the present, including later modernist, postmodernist, and deconstructivist work, urbanism and housing, computer-aided design, green buildings, and postwar architecture in Latin America and Japan and in postcolonial India and Africa. Major movements and architects considered include the Viennese Secession, the Bauhaus, Le Corbusier, Mies van der Rohe, Frank Lloyd Wright, Alvar Aalto, and Louis Kahn, among many others.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARHA254**

Prereq: **None**

#### **ENVS257 Environmental Archaeology**

Archaeological materials provide long-term records of how humans have modified past environments and how human societies respond to environmental change. In this course, students will learn how data from ancient plants, animals, and soils can be analyzed in order to draw interpretations about past human-environmental interactions. We will also discuss key topics in environmental archaeology, including the long-term environmental impacts of plant and animal domestication and debates over environmental causes for the "collapse" of civilizations such as the ancient Maya. The course will involve hands-on preparation and cataloging of plant and animal specimens to add to the Wesleyan Environmental Archaeology Laboratory comparative collections. Students must be available for one weekend class meeting to complete the first stage of animal skeleton preparation.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ARCP**

Identical With: **ARCP257, ANTH257, E&ES257**

Prereq: **None**

#### **ENVS259 Development, Disasters, and Beyond: The Global Politics of Aid**

Development is one of the most important ideas of our times. It is a powerful way of reorganizing the world into the Global South and the Global North (or the Third and First Worlds) and promising modernity to "backward" places and people. It is an equally powerful way of intervening in "underdeveloped" regions in the name of progress and beneficence through aid programs. Our purpose in this course is to use the spy lens of anthropology to critically examine the global politics of development aid, whether given for poverty alleviation, infrastructure projects, disease and healthcare, or disaster relief. While development aid is certainly a potent way to exert power over and regulate Third World Others, it is also a fiercely contested space of struggle. This course approaches it as a "problematic"--an unsettled, contentious, and unpredictable formation.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-ANTH**

Identical With: **ANTH259**

Prereq: **None**

#### **ENVS260 Global Change and Infectious Disease**

This course will cover how human demands upon the environment have come back to bite us through infectious diseases. The most devastating infections, now and in the past, have spilled into humanity from other animals through our quest for food, either through hunting and trade of wild animals (COVID-19 and HIV) or through agriculture (smallpox and measles). Additionally, taking over huge swaths of land has fragmented natural habitats, with the result that some pathogens have increased in abundance (Lyme disease) and some pathogens have moved closer to humanity when humans have encroached on natural lands (Ebola). Living at high density in interconnected cities has sustained the severe infections that became humanity's childhood diseases (mumps, measles, smallpox); high densities have also brought us diseases brought by fecally-contaminated water, as well as those diseases brought by the animals that cohabit our cities and suburbs (rats, robins). Our demand on energy has brought us global warming, which is transporting tropical diseases, such as malaria, poleward from the tropics; the extreme weather events of a changed world are leading to outbreaks of zoonotic diseases (hantaviruses). Moreover, our penchant for transporting wild animals and ourselves has had the potential to spread any local flare-up of any novel disease to the whole world (plague, COVID-19). We will discuss how, even if we mitigate every existing human infection, we should expect an unending stream of new pathogens. We will discuss technological solutions to infectious diseases, as well as how changes in our ethics might help contain existing pathogens and avoid future

spillovers. Lectures will cover these and other topics. There will be two 65-minute lectures each week, with frequent opportunities for students to break out into smaller sections to figure out interesting biological challenges. There will also be a 30-minute discussion each week for each of 12 discussion sections (probably about 15 students each). These discussions will focus mostly on how policy changes might best mitigate the environmental disturbances that are bringing us infections. The course has no formal prerequisites and will introduce material from ecology and microbiology, as needed, to allow students to read and interpret the recent literature on global change and infectious disease.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL173**

Prereq: **None**

#### **ENVS261 Science Materials For a Malagasy Classroom**

Students will design and produce a variety of educational science materials to be used in a fifth grade classroom in Madagascar. These items include a science logo, bookmarks, educational science games, posters, and a comic book with conservation themes for children. Students who are interested in design and natural history as a means through which to communicate science themes on wildlife endemism, evolution, and climate change would be appropriate for this course. All students will need to conduct independent research into science topics, distill down the salient features, and use that information to design elementary school materials. Working both individually and in teams, students will conceive, design, critique, and move into product production (MakerSpace). In addition, prototypes of the materials will be reviewed and rated by fifth graders in a Middletown elementary school for feedback.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL161, IDEA261**

Prereq: **None**

#### **ENVS262 Archaeology of Food, Trade, and Power in South India**

This course examines patterns of life in premodern South India, focusing on the millennium from about AD 600 to 1600. It explores the persistent practices and institutions that structured social life--agricultural regimes of food production, patterns of local and long-distance trade, and elite discourses of power and authority--as well as historical events and processes that brought change to those patterns. The course capitalizes on South India's rich array of archaeological evidence, from surface remains and excavated finds to standing architectural monuments, donative inscriptions on stone and copper plates, and various forms of coinage and coin hoards informing on economic life. Specific topics investigated include the articulation of cultural space and landscapes; food, subsistence, and modes of agricultural production; domestic architecture and habitation; trade, markets, and monetary systems; and the roles of religion and ritual in legitimating political power. There is an explicit emphasis on methods and their application, including those of epigraphy (the analysis of inscriptions), numismatics (the materially based study of coinage and monetary systems), surface archaeology (survey, documentation, and analysis of exposed surface remains), and the archaeology of buildings. Many class sessions will be devoted to active discussion and analysis of data.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART, SBS-ART**

Identical With: **ARHA292, ARCP292**

Prereq: **None**

#### **ENVS263B Curatorial Workshop: Art and the Ecological Imagination, 1840-1870**

This course examines the emergence of an "ecological consciousness" in art during the mid-19th century through readings, discussion, and firsthand study of works in the Davison Art Center print collection. Although the term "ecology" was first coined in 1866, 19th-century thinkers had long been concerned with the interrelationship of organisms, including humans' place and impact on nature. This class examines how visual artists before Impressionism contributed to the 19th century's "ecological imagination" through their representations of landscapes. Known as the "Barbizon School," this group of artists left the metropolis of Paris to immerse themselves in the wild and rugged terrain of the Fontainebleau Forest while also embarking on journeys to remote regions of France. These members of the first artists' colony seceded from the French Academy of Fine Arts and pursued strategies of independence that were allied at the time with radical politics. In their works they experimented with new materials and approaches to composition that included but no longer prioritized humans, in order to foreground processes of transformation internal to nature itself. The consciousness that artists forged through painting and printmaking led them to become among the world's first conservationists; they successfully petitioned the French government to protect parts of the Forest of Fontainebleau some 20 years before the creation of the first National Park in the United States.

The first half of the course will be devoted to reading and discussion; the second half will center on the study of works in the Davison Art Collection, which includes a superb collection of original and experimental prints by Barbizon School artists. The final project will be the curation of a temporary exhibition of works from the collection, including a selection and arrangement of works, explanatory texts, and a public gallery talk.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARHA263B, RL&L235B**

Prereq: **None**

#### **ENVS264 Waterways: Maritime World History**

Human history has been shaped by the sea. Whether as a source of food, a frontier, a boundary, or a bridge, the sea has represented a site of both opportunity and danger. This course will examine the way humans have responded to their marine and maritime environments, both in terms of the technologies they have developed to navigate and exploit them but also insofar as the sea has shaped the way humans think about themselves. While our inquiry will extend into the deep past and the early development of human culture and civilization, we will focus on maritime history over the past millennium, the development of oceanic worlds, the rise of the "age of sail" between the 16th and 19th centuries, and the transformation of global navigation and politics with the rise of steam, diesel, and nuclear power.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-GOVT**

Identical With: **HIST264**

Prereq: **None**

#### **ENVS265 Environmental Justice & Health Equity**

The environmental justice movement (EJM) has evolved over the last several decades, both in the US and globally. The EJM seeks to respond to environmental inequalities that directly impact human health and safety, particularly among people who live or work in settings that put them at higher risk of exposure to environmental hazards. The Agency for Toxic Substances and Disease Registry (ATSDR, part of the Centers for Disease Control and Prevention) describes the goal of environmental justice as "...when everyone enjoys the same degree of

protection from environmental and health hazards, and equal access to the decision-making process to live, learn, and work in a healthy environment." In this course we recognize the current environmental crisis as rooted in systemic inequities that are implicated in social determinants of health (SDOH) and have major implications for health outcomes of affected populations. Therefore, we will explore the EJM from a health equity lens, including racial capitalism, intersectionality, and other forms of structural violence that serve as SDOH, to explore the implications of environmental injustices on health equity. In addition, we will examine how academics, nonprofit/community-based organizations, community members, and government agencies collaborate to address environmental justice-related health equity. Finally, we will look at the notion of "just sustainabilities" to investigate and imagine solutions to these ongoing challenges that build community power to advance sustainable communities and health equity.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **BIOL197 OR E&ES197 OR ENVS197 OR ENVS219F OR E&ES155 OR E&ES199**

#### **ENVS267 Development in Question: Conservation in Africa**

"Why not plant trees?" In 1977 Wangari Maathai started the Green Belt Movement, a popular environmental revolution, in Kenya. Then in the 1990s Nigeria Ken Saro-Wiwa fought for the rights of local communities against the multi-national oil industry. Like many African activists, scientists, and farmers, they placed African experiences at the center of environmental policy and conservation. Yet, popular images of the continent's environment in perpetual crisis blame African practices or disregard African efforts. Such depictions of "desertification" or "over grazing" have impacted international and governmental policy. Recent scholarship suggests that such common perceptions of the environment in Africa and conservation policy are misleading. This course will allow students to critically study the history of environmental management on the continent and the development of the idea of conservation. We will examine game park politics, the history of resource extraction, climate change, and other pressing environmental concerns. We will also study diverse African environmental perspectives from the guardians of sacred forests to activists such as Wangari Maathai and Ken Saro-Wiwa.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST267, SISP267**

Prereq: **None**

#### **ENVS268Z Environmental Justice Advocacy: Assessing Law, Community-Based Engagement, and More**

ONLINE COURSE: Synchronous class meetings via Zoom, 10am-noon and 2-5pm. Classes held Jan 4, 6, 8, 10, 12, 14, 16, 18. (Please note: Students should expect some readings and assignments to be due during winter break, prior to the beginning of Winter Session class meetings.) The concept of "environmental justice" focuses on the equitable distribution of pollution and health burdens--such as the siting of fossil fuel infrastructure and pollution-emitting facilities--as well as benefits such as clean air and clean water. Procedural justice and restorative justice are also key demands of the environmental justice movement. In addition, as communities of color and low-income communities disproportionately bear the burdens of climate change and resulting "climate gentrification," the overlap between environmental injustice and climate change is becoming increasingly apparent. After a brief introduction to the concept of environmental justice, this course will focus on advocacy efforts to promote environmental justice and, in particular, the benefits and limitations of various tools including the law, grassroots organizing, and policy work. For their final project, students will use what they learn in the course to design and

propose their own environmental justice intervention. By the end of the course, students will understand the history, foundational theory, and key case studies of environmental justice as well as the tools and strategies that environmental justice advocates use. Syllabi for Winter Session courses will be posted to <https://www.wesleyan.edu/wintersession/courses.html> as soon as they are available.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ALLB**

Identical With: **CSPL309Z**

Prereq: **None**

#### **ENVS270 Environmental Philosophy**

This course offers philosophical resources for understanding and addressing environmental concerns. At the same time, we will recognize how ecological insights challenge some of the most influential ideas in the European philosophical tradition--human-centered and individualist accounts of existence, agency, knowledge, and value.

Shared questions may include:

Is there a coherent way of distinguishing "nature" from the non-natural?

What can we understand about non-human experience and value?

How do people become motivated to recognize and respond to problems whose effects play out in far-away or unfamiliar bodies?

How do concepts of moral responsibility apply to climate change?

How does environmentally directed action relate to social justice?

When there are ecological impacts attached to choices that are conventionally seen as matters of personal liberty (such as food choices, living arrangements, reproductive choices), how do we constructively engage with one another?

Despite near consensus about our times being rife with environmental crises, concepts like "environment" and "nature" defy any straightforward account. Similarly, it seems even when people come together around problems of injustice and unsustainability, they may not share any clear positive account of justice or of sustainability.

Rather than be defeated by the lack of shared foundational concepts, students will become familiar with at least three patterns of critique--each of these being not a theory or kind of information but a set of skills with perceptual, conceptual, and dialogical aspects. These three patterns of critique are ecological critique, standpoint critique, and sustainability critiques, and they correspond roughly to three traditional domains of philosophy: inquiry into being (metaphysics), inquiry into knowledge and understanding (epistemology), and inquiry into norms and ideals for action (ethics).

Understanding these three patterns of critique allows students to address emerging environmental problems more effectively, recognizing the intertwined relations among empirical inquiry, moral accountability, and social justice.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-PHIL**

Identical With: **PHIL270**

Prereq: **None**

**ENVS271 Biodegradable Design: Soft and Hairy**

In this course, we will develop an understanding of soft materials and how softness is explored in design. We will explore the notion of softness in design with particular focus on how soft, biodegradable materials can form our experience of a product. We will study how soft materials, plants, and living organisms can be utilized as a living material to form a built ecology. In particular, we will learn how mycelium used in novel ways can produce experiential affect in spaces, especially in relation to the human body. We will study how to design for impermanence--sometimes using waste materials--and develop an understanding for material recovery. The goal of the course is to introduce students to bio and living materials used in design as well as zero-waste design methodology, and develop digital and physical skills associated with the making of soft products. Students will work both individually and collaboratively in a studio environment. Field trips to New York City museums, fabricators, and galleries may be expected as part of this course.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST271, IDEA271**

Prereq: **ARST131 OR IDEA110 OR IDEA180**

**ENVS273 Environmental Politics in East Asia**

This is an upper-division course on the environmental politics of East Asia. It will focus on the major environmental issues of our time (pollution, conservation, energy, waste, environmental justice, etc.), and how East Asian countries are coping with them from both policy and politics perspectives. It will cover both transnational and international efforts, as well as national and local initiatives. The course will require that students "do" environmental politics as well as study environmental politics through a civic engagement component.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-GOVT**

Identical With: **GOVT273, CEAS273**

Prereq: **None**

**ENVS276 The Law and Policy of Water, Wind, and Wildlife: Protecting Natural Resources and the Environment**

HOW do we protect our environmental and natural resources and WHY have we chosen this path? WHEN/HOW do the public, NGOs, and regulated industries have a voice? WHEN is an environmental impact statement required and which alternatives must be considered? WHEN/HOW are environmental considerations part of the decision-making process? IS there a path forward to better address greenhouse gases and climate change? HOW can we protect the endangered and threatened species and preserve their habitat? WHERE do we go from here as we confront both the more complex issues associated with greenhouse gases/ climate. HOW do our energy sources impact our environment?

This highly interactive course will examine the source of environmental and natural resource law, its evolution and boundaries. It will explore how and when we have access to the process and then turn attention to the programs most central to natural resource and environmental protection--the National Environmental Policy Act, The Clean Water Act, The Clean Air Act, as well as certain land focused state and municipal programs. Given renewed commitments to Alternative Energy and Environmental Justice (EJ), the course devotes time to considering both through the lens of Environmental Law and Policy.

The course concludes with a capstone project in which students are assigned to a team as either proponent or opponent. Each team is then provided an information packet setting a scenario, setting, certain facts, and any legal information beyond course coverage. Following this, each team prepares for and advances technical, legal, and policy arguments in support of its goals and is afforded the opportunity to cross-examine the opposition.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **None**

**ENVS277 The Law and Policy of Chemicals, Contamination, Cleanup, and Calamities**

HOW do we protect our environment and ourselves from wastes and chemicals? WHY have we chosen this path? WHEN/HOW do the public, NGOs, and regulated industries have a voice? WHEN is something that is not used, waste and WHEN is that waste a hazardous waste? WHEN does someone need to clean up the contaminated environment? WHO is that someone? HOW clean is clean? HOW have chemicals ended up in commerce? WHEN and under what circumstances can new chemicals enter our lives? WHEN/HOW are environmental and health considerations part of the decision-making process? HOW do we avoid environmental disasters? WHAT is required in terms of thinking about and planning for the "unthinkable"? WHAT drives sustainability initiatives, beneficial reuse, and life cycle analysis?

This highly interactive course will examine the source of environmental law, its evolution and boundaries. Students will explore how and when we have access to the process and examine: (i) the Resource Conservation Recovery Act, Superfund, and related brownfield initiatives; (ii) the Toxic Substances Control Act and international counterparts; (iii) the Emergency Planning and Community Right To Know Act; (iv) Environmental Justice in the context of waste and chemical management; and (v) Sustainability, product stewardship, and related initiatives.

The course concludes with a capstone project in which students are assigned to a team as either proponent or opponent. Each team is then provided an information packet setting a scenario, setting, certain facts, and any legal information beyond course coverage. Following this, each team prepares for and advances technical, legal, and policy arguments in support of its goals and is afforded the opportunity to cross-examine the opposition.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **None**

**ENVS278 Introduction to GIS**

Geographical information systems (GIS) are powerful tools for organizing, analyzing, and displaying spatial data. GIS has applications in a wide variety of fields including the natural sciences, public policy, business, and the humanities; literally any field that uses spatially distributed information. In this course, we will explore the fundamentals of GIS with an emphasis on practical application of GIS to problems from a range of disciplines. The course will cover the basic theory of GIS, data collection and input, data management, spatial analysis, visualization, and map preparation. Coursework will include lectures, discussions, and hands-on activities.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES280, E&ES580**

Prereq: **None**

#### **ENVS279 Eating Others: Histories and Cultures of Animal Edibility**

For many people, animals form a significant and cherished part of their diet. Indeed, humans have used other animals as sources of nutrients for hundreds of thousands of years. What can these animal-based dietary practices tell us about humans and their relationships with other animals? Of course, these inter-species relationships have varied as radically across time and cultures as the dietary practices that have shaped them. To better understand some of these practices and the relationships they generate, this course will explore the following questions: How did animal-based food practices develop from pre-domestication to the contemporary era of industrialized animal agriculture? How have cultural categories of "edibility" developed in different cultural contexts? What is meat, and how does it differ from inedible flesh? How have gender, class, race, sexuality, and other categories of difference intersected with and shaped animal consumption practices in different times and contexts? How has animal consumption shaped and been shaped by animal ethics, philosophy, and scientific knowledge production? How has large-scale animal consumption contributed to the ecological crises of the Anthropocene, and how have these in turn affected animal consumption practices? What is the future of animal-based food?

This course will use ethnographies, historical and legal analyses, and philosophical inquiries to examine the histories and cultures of animal edibility. Specifically, it will focus on topics including human evolution, animal domestication, slaughter practices, industrialized animal agriculture, indigenous ecological ontologies, hunting, dairy and egg consumption, cannibalism, cultural conflicts over the edibility of specific species, and recent technological innovations that can produce animal products without animals.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ENVS**

Identical With: **ANTH279, SISP266**

Prereq: **None**

#### **ENVS280 Environmental Geochemistry**

A qualitative and quantitative treatment of chemical processes in natural systems such as lakes, rivers, groundwater, the oceans, and atmosphere. General topics include equilibrium thermodynamics, acid-base equilibria, the carbonic acid system, oxidation-reduction reactions in nature, and isotope geochemistry. If offered, the associated lab course (E&ES 251) must be taken concurrently. The lab course is usually taught as a service-learning course in which students work with a community organization to solve an environmental problem. Previous classes have evaluated the energy potential of a local landfill and investigated the cause and possible remediation of local eutrophic lakes.

There are no official prerequisites but students should be comfortable with chemical concepts or should have taken introductory college chemistry or advanced high school chemistry courses.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES250**

Prereq: **None**

#### **ENVS281 Environmental Geochemistry Laboratory**

This course will supplement E&ES 250 by providing students with hands-on experience of the concepts taught in E&ES 250. The course will emphasize the

field collection, chemical analysis, and data analysis of environmental water, air, and rock samples. This course is often taught as service-learning course where the class works with a community organization to solve an environmental problem. The course usually concludes with a public presentation of the work. Past service-learning projects have examined landfills, damned rivers, and polluted lakes.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **0.50**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES251**

Prereq: **None**

#### **ENVS282 Sustainable Agriculture and Food Systems**

This course explores strategies to create a sustainable agriculture and food system. The course will begin with an overview of the environmental issues associated with our agriculture and food system along with current production and consumption trends. Other topics covered in the course will include: environmental certification, starting and managing a farm, organic versus conventional farming, and the impact of diet choice on the environment.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **None**

#### **ENVS283 Venezuela: The Effect of Oil Discovery on People, the Environment, and on Democracy**

This course will examine the key factors that have affected the development of Venezuela and its environment from the pre-colonial period to the present. We will divide the history of Venezuela into two critical periods: before and after the discovery of oil. We will ask questions about the nature and interactions of the key factors and agents that transformed Venezuela from a colony to that of an economically independent country. By examining the pre- and post-oil economic periods separately, we will learn that the key factors, such as agriculture, land use, and European-colonial influence, changed dramatically, thereby transforming many sociopolitical institutions. The contrasts will include resilience to and eradication of diseases, human rights and slavery, land ownership, human health, impacts on biodiversity and human health, and protections of indigenous cultures. Ultimately we will examine the factors that have led to the collapse of democracy. We will read an interdisciplinary literature that includes anthropology, religion, sociology, environmental sciences, law, and history. The course is presented in a reading/discussion format in which all readings, writings, and discussions will be in Spanish.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ENVS**

Identical With: **LAST383**

Prereq: **SPAN221**

#### **ENVS284 Animal Law and Policy**

This course will provide an overview of law and public policy as they apply to non-human animals. The course will explore the historical and philosophical treatment of animals; discuss how such treatment impacts the way judges, policymakers, lawyers, legal scholars, and lay people see, speak about, and use animals; survey current animal protection laws and regulations, including overlap with such policy issues as food and agriculture, climate change, and biodiversity protection; consider recent political and legal campaigns to reform animal protection laws; examine the concept of "standing" and the problems of litigating on behalf of animals; interrogate the current classification of animals as "property" and the impacts of that classification; and debate the carceral turn in animal legal advocacy.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-PHIL**

Identical With: **PHIL283, SISP293**

Prereq: **None**

#### **ENVS285 Environmental Law and Policy**

If you are interested in the environment and want some perspective on where our environmental law and policy came from, how it works, where it has succeeded and failed, what the unresolved issues have been and which remain, where the emerging topics (e.g. climate, PFAS, Environmental Justice) may take us, and a sense of the past and present battlegrounds of environmental law, then Environmental Law and Policy is for you. This course is taught using the Socratic (highly interactive) method, includes a "brownfield" negotiation, and culminates in student run hearings in which you will prepare, present, and argue about issues from what is a "water" of the U.S. to recycling and reclamation to what is solid and hazardous waste?

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-ENVS**

Prereq: **[ENVS197 or BIOL197 or E&ES197] OR E&ES199**

#### **ENVS286 Plant Form and Diversity**

The course begins with an overview of plant evolutionary history, then covers the basic structure and function of the plant body, the plant life cycle in nature, including interactions with animals, and ecological diversity of plants in contrasting habitats. Special events include a field trip to the Smith College Botanic Garden, two hands-on days for working with living specimens, and a special guest lecture by a local plant biologist.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL290, BIOL590**

Prereq: **[BIOL182 or MB&B182]**

#### **ENVS287 Mountain Geography: Physical and Human Dimensions**

While nearly everyone is familiar with the importance of oceans and rainforests, mountain environments receive relatively little attention. Yet mountains are home to approximately one-tenth of world's people, cover 1/5 of the Earth's surface, and occur in 75 percent of the world's countries. As much as 80 percent of world's freshwater originates in mountains, and all of the world's major rivers have their headwaters in the highlands. More than half of humanity relies on the fresh water that accumulates in mountains for drinking, domestic use, irrigation, hydropower, industry, and transportation. Mountains are dynamic yet fragile ecosystems, home to some of the most disadvantaged but highly motivated people in the world, and centers of armed conflict. They present additional challenges to sustainable development because of their lack of infrastructure, communications, and historically marginalized cultures. Additionally, they are often among the first landscapes to display a range of climate change impacts, such as the recession of glaciers, formation of large glacial lakes, and glacial lake outburst floods (GLOF). The course will provide students with a broad and integrated overview of the physical and human dimensions of the mountain world. Covered within this interdisciplinary course will be lectures, videos, readings, and individual projects covering: - The geological origins of mountains, how they're built-up and worn-down over time. - The importance of mountains for biodiversity and water cycles, globally and locally. - The cultural significance of mountains to people around the globe, and how that relationship has evolved over time. - How mountains are used, how they're protected, and how today they're experiencing rapid change in a warming climate. - The basics of integrated conservation and development programs in mountains, including their design, monitoring, and evaluation - Basic skills related to staying healthy

in the high altitude environment (acclimatization, preventing acute mountain sickness, evacuation basics, clothing layering, staying found)

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES287**

Prereq: **BIOL182 OR ENVS197 OR E&ES199**

#### **ENVS290 Oceans and Climate**

Earth's climate is not static. Even without human intervention, the climate has changed. In this course we will study the major properties of the ocean and its circulation and changes in climate. We will look at the effects of variations in greenhouse gas concentrations, the locations of continents, and the circulation patterns of oceans and atmosphere. We will look at these variations on several time scales. For billions of years, the sun's energy, the composition of the atmosphere, and the biosphere have experienced changes. During this time, Earth's climate has varied from much hotter to much colder than today, but the variations were relatively small when compared to the climate on our neighbors Venus and Mars. Compared with them, Earth's climate has been stable; the oceans neither evaporated nor froze solid. On shorter time scales, different processes are important. We will look at these past variations in Earth's climate and oceans and try to understand the implications for possible climates of the future.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES260, E&ES560**

Prereq: **E&ES101 OR E&ES199 OR E&ES115 OR [ENVS197 or BIOL197 or E&ES197]**

#### **ENVS291 East Asian Archaeology**

This course will introduce students to remarkable archaeological discoveries from East Asia, focusing on the archaeology of ancient China, but also including finds from Japan, Korea, and Mongolia. Beginning with "Peking Man" and Asia's earliest hominin inhabitants, we will explore the lives of Paleolithic hunter gatherers, the origins of domestic rice and pigs, the emergence of early villages and cities, the origins of writing, ancient ritual systems, long-distance interactions through land and maritime Silk Roads, and the archaeology of Chinese diaspora populations living in the 19th-century United States. We will also consider the current state of archaeological research in East Asia, focusing on site preservation, cultural heritage management, and the political roles of archaeology.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-ARCP**

Identical With: **ARCP291, ANTH291, CEAS291, IDEA291**

Prereq: **None**

#### **ENVS292 Techniques in Ocean and Climate Investigations**

Weekly and biweekly field trips, and computer and/or laboratory exercises will allow us to see how climate and oceans function today and in the past. In addition to our data, we will most likely use the Goddard Institute for Space Studies climate model to test climate questions and data from major core (ocean, lake, and ice) repositories to investigate how oceans and climate function and have changed.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **0.50**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES261**

Prereq: **E&ES101 OR E&ES115 OR [E&ES197 or BIOL197 or ENVS197] OR E&ES199**

**ENVS293 Foundations in Environmental Social Science Research & Evaluation Methods**

This course provides a foundation in social science research methods, with an emphasis on community-based participatory research (CBPR) for environmental and food justice. We will be drawing on theoretical and practical approaches from across the environmental social sciences (ESS) including psychology, anthropology, sociology, community health, and geography to help us frame ways of looking at these critical community issues. We will also uplift anti-racist research, evaluation, and learning (REL) approaches, and address issues of data justice.

Students will develop competencies to prepare them to work with communities to identify and understand environmental, food security, health, and social conditions that impact their communities and organizations. Specifically, we will discuss a wide range of mixed methods with an emphasis on participatory approaches to developing research questions and hypotheses, community-engaged evaluation planning, needs assessments, and landscape scans. Students will also learn about ethical issues in research, particularly as pertaining to working with community stakeholders. Over the course of the semester, students complete a variety of practical exercises designed to gain experience with qualitative and quantitative data collection, analysis, and community learning.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **BIOL197 OR E&ES197 OR ENVS197 OR ENVS219F OR E&ES155 OR E&ES199**

**ENVS294 Current Environmental Issues in Latin America (CLAC 1.0)**

This course will provide historical and current information on the development of environmental issues in Latin America. The information will be divided into assessing the use of the environment during (a) pre-Columbian and colonial periods and (b) the modern period. The organization, structure, and governance of the environment will be discussed, as will the development of public policies, management plans, factors that deteriorate, and the potential sustainable uses of the environment and its resources. We will be reading interdisciplinary literature including academic, reports, official governmental documents, and NGOs' projects dedicated to the diagnostic, development, and use of resources in Latin America. Finally, particular cases of Latin American countries such as Argentina, Brazil, Mexico, Costa Rica, Peru, and Venezuela will be studied. The course is presented in a reading/discussion format in which all readings, writings, and discussions will be in Spanish.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **CGST267, LAST290**

Prereq: **SPAN221**

**ENVS295 Saving Animals: The Politics of Rescue, Captivity, and Care**

This course examines the major issues related to captive animal care and rescue across a wide variety of contexts, especially the current global extinction crisis, with specific attention to the ethical, political, and social dimensions of human-animal interactions. Discussions, films, readings, and an independent research project will introduce students to key concepts related to animal care and rescue. Specifically, the course will focus on topics including the ethical dilemmas of care, the politics of extinction and conservation, animal trafficking, wildlife rehabilitation efforts, wildlife refuges, captive animal sanctuaries, and zoos.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **SISP294**

Prereq: **None**

**ENVS297 Food Security and Environmental Conservation (CLAC 1.0)**

In this course students will research and discuss food security and the use of the environment in a selection of Latin American countries. We will ask questions about the basis of food production and availability. We will also examine the available information from public and private agencies about programs established by countries to ensure the food security of their inhabitants and the sustainable use and conservation of the environment. We will discuss concepts such as: food sovereignty and security as a food system in which the people who produce, distribute, and consume food also control the mechanisms and policies of food production and distribution; nutrition as a global and particular standard of food consumption; social justice related to the accessibility of food; and the human right to adequate food and freedom from hunger as one of the United Nations' objectives of the millennium. Students will look at particular cases in Latin America. The course is presented in a reading/discussion format in which all readings, writings, and discussions will be in Spanish.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **CGST268, LAST298**

Prereq: **SPAN221**

**ENVS301 The Art of Narrative Science**

There is neither conflict nor antagonism between the realms of art and science. Indeed, the two infinitely complement and complete one another in ways so intimate, intricate, and oft-times invisible that only great storytelling, artful narrative, can fully reveal them. A poet, through metaphor, builds bridges from entangled inscapes of thought and emotion to a place of shared understanding. A good narrative science writer must do the equivalent with the often recondite minutia of modern scientific exploration, and do so with ever-increasing urgency as new discoveries and insights mount daily across a broad array of disciplines.

As we'll be highlighting in our course readings, writing assignments, and class discussion, all the key tenets of good storytelling are at play in effective narrative science writing: voice, point of view, narrative arc, dramatic tension, setting and scenes, characters, action, and dialogue. Science, in this sense, is incidental to this course's primary concern. The singular challenge that science does pose to writers, however, is how not to be cowed and/or overwhelmed by the daunting complexities of the subject matter; how to, through your own powers of observation, accrued research, and fearless, persistent questioning, own the material in such a way that frees you to imaginatively represent it again to the lay reader as story.

In this course students will learn:

- 1) How to read effective creative nonfiction about scientific subjects and understand what techniques different writers use to achieve both clear and compelling narratives.
- 2) How to choose the subjects they'd like to write a story about and how to compose a proposal describing that story to prospective editors at a variety of different publications.
- 3) How to compile research and conduct interviews for their stories.

4) How to construct the story itself using all the techniques of effective storytelling in feature-length narratives.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ENVS**

Prereq: **None**

#### **ENVS302 Extinction/Rebellion: Christianity and the Climate Crisis**

Although this course is not devoted specifically to the subject of "XR"--the decentralized environmental activist organization and global campaign of civil disobedience--it borrows the movement's self-designation as a point of departure for an exploration of the historical, conceptual, and geopolitical significance of Christianity to the "Anthropocene." How is Christianity entangled among the "historical roots of our ecologic crisis"? What is "eco-theology"? How do ancient narratives of creation and traditional Christian teachings regarding the origin of humankind continue to shape modern, scientific, and popular assumptions about the natural world and our place in it? What does the book of Genesis have to say about commercial agriculture, ethical veganism, and the relation of divinity with the more-than-human, animal-vegetal-mineral web of life? Whence this "planet of slums" and whither Paradise or the Promised Land? Which elements of the Christian imagination enabled colonization of the New World, indigenous displacement and genocide, the transatlantic slave trade, and capitalist globalization? Is another world still possible, and could Christian thought and practice play a pivotal part in actualizing an alternative planetarity today? We will pursue these questions together by way of readings in theology, philosophy, critical science studies, ecology, geography, political economy, Black feminism, queer theory, and Indigenous studies. Ultimately, the course analyzes aspects of Christianity's intimate involvement in the history of climate change and considers how critical attention to this history may contribute to collective acts of rebellion against mass extinction.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-RELI**

Identical With: **RELI303, SISP313**

Prereq: **None**

#### **ENVS303 Ukraine and Its Environment**

International perspectives on environmental issues are critical in order to address the challenges facing the world. Developing an international perspective requires more than learning from printed literature--it requires in-country experience and the desire to be able to view issues through different cultural lenses. This course will provide such experience by learning about the diversity of Ukrainian environments, people, and cultures both in the classroom at Wesleyan and by traveling to Ukraine during Spring Break. During our time in Ukraine we will receive lectures in English from noted scholars, politicians, professors and scientists on topics such as environmental law, global environmental security, urban environment, environmental policy in developing states, and sustainable development for the developing world. We will travel and learn from scientists at Chernobyl about the regeneration of forest ecosystems, learn from agronomists about agriculture on the steppes, and learn from politicians and scholars about Ukrainian environmental policy and their views of U.S. policies. We will also enter into round table discussions with university students to exchange ideas about potential international solutions and approaches to environmental problems. These are just some of the experiences that are planned for our visit. Ukraine, as a pivotal democracy of the former Soviet Bloc, is an amazing place to witness how a nation wrestles with dramatic changes in policy. At the same time Ukraine is culturally diverse, which presents interesting challenges to formulating fair and cohesive policies.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **CGST303**

Prereq: **ENVS197 OR E&ES199**

#### **ENVS306 Ecology and Natural History of Freshwater Fishes of South America**

South America has the highest diversity of freshwater fishes anywhere in the world. In fact, there are more than twice the number of mammals and about the same number of birds in the world. Why has this remarkable radiation occurred in a relatively short period of time? How can so many fishes coexist in the same rivers, utilizing the same resources? In this intensive course, we will travel to Colombia during spring break (March 7-21) in order to gain firsthand knowledge about the ecology and natural history of freshwater fishes in South America. We will learn about the ecological and environmental factors that contribute to perhaps the largest biological radiation on the planet.

Students will obtain firsthand experience with the South American tropics, freshwater fishes, and with doing experiments in the field. Each day there will be a combination of lectures and field or laboratory exercises. We will travel to and explore fish ecology in different types of rivers at different elevations. Students will gather and analyze data about biological, physical, and environmental issues that are covered in the lectures. The habitats that we explore will be both terrestrial and freshwater rivers. Our base will be at the Instituto Humboldt in Villa de Leyva, Colombia. We will interact with Colombian students who are studying ecology and biodiversity at the Institute in order to exchange ideas about current environmental issues.

All the costs of travel, lodging, and meals will be covered by the course.

Offering: **Host**

Grading: **A-F**

Credits: **1.50**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL306, E&ES306**

Prereq: **None**

#### **ENVS307 The Economy of Nature and Nations**

On many of the key environmental problems of the 21st century, from climate change to biodiversity conservation, the perspectives of ecology and economics often seem poles apart. Ecology is typically associated with a skeptical stance toward economic growth and human intervention in the environment, while economics focuses on understanding (and often, celebrating) human activities of production, consumption, and growth. At the same time, ecology and economics share a common etymology: both words spring from the Greek *oikos*, or household. They also share much common history. This course thus explores the parallel histories of economics and ecology from the 18th century to the present, focusing on changing conceptions of the *oikos* over this period, from cameralism's vision of the household as a princely estate or kingdom, continuing through the emergence of ideas about national or imperial economic development, and culminating in the dominant 20th-century recasting of economics as being centrally concerned with problems of resource allocation. Simultaneously, the course explores connections between changes in economics and the emergence of ecological science over this period, from Enlightenment natural history and early musings on the "economy of nature," to the design of markets for carbon credits today.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST307, SISP307**

Prereq: **None**



**ENVS308 Comparative Urban Policy**

Cities are home to more than half of the world's population, generate more than 80% of world GDP, and are responsible for 75% of global CO2 emissions. Once viewed as minor political players with parochial concerns, they are now--individually and collectively--major players on the global stage. This course will examine how cities are coping with the major policy issues governing our lives--from waste management and public safety to energy and housing policy. We will be examining how policies differ between big cities and small cities, what cities in the global north are learning from the cities in the global south, and how cities are bypassing toxic partisan politics in their nations' capitals to form global networks promoting positive change. The class will involve local field trips and participant observation to see how some of these urban issues are playing out in the city of Middletown.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-GOVT**

Identical With: **GOVT308, CEAS308, IDEA308**

Prereq: **None**

**ENVS309 Animate Landscapes: Spirits and Sovereignty in Indigenous Religions**

Scientific understandings of the world are grounded in a distinction between animate beings and inanimate matter, but people all over the world have understood land and landscapes as alive and filled with agency. Indigenous religious practices often include relationships with mountains, rivers, glaciers, and other "other-than-human persons." Using case studies and the instructor's fieldwork materials with place beings in Buryatia, we will explore the different relationships human beings have with animate and sacred landscapes and think about the ramifications these relationships have for thinking about sovereignty over and in the "natural" world.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-RELI**

Identical With: **RELI306**

Prereq: **None**

**ENVS311 Global Change Biogeography**

On our home planet, Earth, the current geologic epoch is characterized by rapid changes to the environment due to human behavior. Biogeography examines the spatiotemporal distribution of life on Earth, from species to ecosystems and from landscapes to continents. How is anthropogenic climate change modifying the distribution and function of organisms and ecosystems? What can we learn from the evolutionary history of the life-planet system that can help us understand the possible impacts of future climates on the biosphere? To address these questions rigorously, we will explore primary literature from a wide range of theoretical and empirical studies. The course emphasizes inquiry, contact with primary literature, discussion, statistical and spatial coding, learning to obtain data, and visualization. The beginning of the semester provides an overview of physical geography and the Earth System, with field and data experiences that build remote sensing and spatial analysis skills. The second half of the semester is focused on the exploration of relevant scientific literature based on student interests and recent papers, as well as independent research projects.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES312, BIOL312**

Prereq: **None**

**ENVS312 Environmental and Resource Economics**

This course examines the economic drivers of environmental problems and policies to combat environmental degradation. Topics include failures of the free market, the monetary value of ecosystems, resource utilization across a finite

globe, and the unintended consequences of environmental policies. Applications will be gleaned from a vast array of real-world issues, including air quality, biodiversity, ecosystem services, fisheries, forests, oil and gas, public and private lands, transportation, waste management, water resources, wildlife, and other global environmental change phenomena.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ECON**

Identical With: **ECON310**

Prereq: **ECON301**

**ENVS315 Eat, Grow, Heal: The Anthropology of Food and Justice**

This course uses the lens of justice to examine the politics of food. We will look at the cultural and political-economic dynamics of food production and consumption, considering questions of taste, class, labor, marketing, and food sovereignty. We will also examine the environmental and social impact of food production and the consumption choices we make, from organic, to vegan, to animal proteins, to foraging and hunting. We will use a range of texts, including ethnographies, theory, film/documentary/TV shows, creative nonfiction, fiction, cookbooks, blogs, and magazine articles.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-ANTH**

Identical With: **ANTH312**

Prereq: **None**

**ENVS316 Community Research Seminar**

Small teams of students will carry out research projects submitted by local community groups and agencies. These may involve social science, natural science, or arts and humanities themes. The first two weeks of the course will be spent studying the theory and practice of community research. Working with the community groups themselves, the teams will then design and implement the research projects.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.50**

Gen Ed Area: **SBS-SOC**

Identical With: **SOC316**

Prereq: **None**

**ENVS317 Colonizing Space: Exploration, Extraction, and Inhabitation**

Under its "Artemis Mission," NASA plans to put "the first woman and first person of color" on the Moon to build a permanent outpost. This lunar base will allow NASA to mine the Moon, extract precious metals from asteroids, and eventually colonize Mars--hopefully before China and Russia do the same. Thanks to recent legislation, NASA will rely throughout this mission on the rocket and extractive technologies of private corporations like SpaceX, Blue Origin, Moon Express, and Deep Space Industries, whose CEOs proclaim they are saving the human race by expanding it into space. It will also rely on the backing of the newly-created sixth branch of the U.S. military: the Space Force.

This course will track the ideological and colonial history of the Apollo era before approaching the scientific, corporate, and legislative landscape of "NewSpace."

It will explore the mythological underpinnings, narrative imaginings, and theological justifications for the unfettered exploitation and inhabitation of the Earth and its cosmic neighbors. Finally, it will ask whether an ethically and ecologically sustainable space program is possible.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-RELI**

Identical With: **RELI317, SISP327**

Prereq: **None**

**ENVS317F Colonizing Space: Exploration, Extraction, and Inhabitation (FYS)**

Under its "Artemis Mission," NASA plans to put "the first woman and first person of color" on the Moon to build a permanent outpost. This lunar base will allow NASA to mine the Moon, extract precious metals from asteroids, and eventually colonize Mars--hopefully before China and Russia do the same. Thanks to recent legislation, NASA will rely throughout this mission on the rocket and extractive technologies of private corporations like SpaceX, Blue Origin, Moon Express, and Deep Space Industries, whose CEOs proclaim they are saving the human race by expanding it into space. It will also rely on the backing of the newly-created sixth branch of the U.S. military: the Space Force.

This course will track the ideological and colonial history of the Apollo era before approaching the scientific, corporate, and legislative landscape of "NewSpace."

It will explore the mythological underpinnings, narrative imaginings, and theological justifications for the unfettered exploitation and inhabitation of the Earth and its cosmic neighbors. Finally, it will ask whether an ethically and ecologically sustainable space program is possible.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-RELI**

Identical With: **RELI317F, SISP327F**

Prereq: **None**

**ENVS318 The Politics of Death: The Living, the Dead, and the State**

This course will explore the intersections between the living, the dead, and the state, focusing on the ways that death and the dead body raise particular questions and problems for different kinds of political regimes. The course will examine the collisions between the state and the dead, both symbolic and material, by investigating spaces where the state and death intersect in revealing ways: cemeteries, cremation, monuments, rituals, and religious institutions and cultures. The course will also follow, borrowing anthropologist Katherine Verdery's term, "the political lives of dead bodies," the ways in which states mobilize dead bodies to reconfigure the political order.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-CHUM**

Identical With: **HIST318, REES318**

Prereq: **None**

**ENVS319 Animals in Film**

Some of the oldest known visual art--the paintings on the walls of Chauvet Cave--appear to depict animals in motion. Today, 36,000 years later, humans are still deeply fascinated with depictions of animals and their actions, from television documentaries to animated films to viral Internet videos. John Berger argues in his famous essay "Why Look at Animals?," "animals are always the observed," while the "fact that they can observe us has lost all significance. They are the objects of our ever-extending knowledge." The history of film provides many examples to support Berger's claim. But can film also help us understand how animals see us, or the rest of the world? And what can film tell us about how we see and attempt to understand other animals? Through an examination of the history of animal depictions in documentary, animated, and live-action fictional films, this course will explore these questions and provide a deeper understanding of how the cinematic medium shapes our relationships with other species. Films may include *Electrocuting an Elephant*, *The Hunters*, *Babe*, *The Bear*, *White God*, *Kedi*, *Stray*, *Gunda*, and *Zootopia*.

Readings will include: John Berger, "Why Look at Animals?"; Andre Bazin, "What is Cinema?"; Anat Pick, "Vegan Cinema"; Anat Pick and Guinevere Narraway, "Screening Nature: Cinema Beyond the Human"; Gregg Mitman, "Reel Nature: America's Romance with Wildlife on Film"; Cynthia Chris, "Watching Wildlife"; Helen Hughes, "The Contemplative Response"; and Akira Mizuta Lippit, "Electric Animal: Toward A Rhetoric of Wildlife."

Examination and Assignments: A final project, film review paper, and weekly reflection papers.

Consent: No special consent required.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Prereq: **None**

**ENVS320 More-Than-Human-Worlds: Theories and Fictions**

How do we imagine the worlds of other life forms: what they know, what is meaningful to them, their ways of communicating? Which senses must we use and what forms of translation are necessary (if impossible) to turn their languages, their thoughts, their desires into our fictions or poetry or theory? What stories have been told and what stories could or should we tell in order to inspire more responsive and responsible relations between the diverse yet enmeshed worlds of human and non-human lives? These are some of the questions we will be asking as we move through a diverse range of writings about relations to other animals and to other worlds that are both within and beyond our own.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-COL**

Identical With: **COL310**

Prereq: **None**

**ENVS321 Ecological Design II: Worn Out/Broken In**

This course will function as a design studio that examines the afterlife of material production. While designers have traditionally focused their attention on the creation, distribution, and consumption of new products, this course asks students to carefully consider everything that follows those acts. By scrutinizing the use, care, maintenance, repair, and eventual demise of designed objects, students come to understand the intended and unintended consequences of making. Rigorous observation and research lead to the creation of analytic drawings and models for presentation at project reviews.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST320, IDEA320**

Prereq: **ARST270 OR ARST235 OR ARST220**

**ENVS322 Community-Engaged Qualitative Research: The Other 1%**

This course will focus on context-specific, community-based participatory research methods. The first research project undertaken in this class (2023) will be investigating agricultural justice in Connecticut, gathering the stories and experiences of the 1% of farmers in Connecticut who are BIPOC. The goal of the project is to uncover and work towards dismantling some of the barriers to farming that currently exist for those populations (including bias in USDA grants, unequal access to resources and information through ag extension, etc.). Students will learn theories and methods of community-engaged research and CBPR through scholarly study and hands-on experience gathering and analyzing

qualitative and ethnographic data, primarily interviews and observations, with the possibility of using techniques of photo voice and Lightfoot's methods of portraiture in social science research. Students should be prepared to engage deeply with community members. Some travel within Connecticut will be required.

Offering: **Crosslisting**

Grading: **Cr/U**

Credits: **1.00**

Gen Ed Area: **SBS-ALLB**

Identical With: **CSPL306**

Prereq: **None**

#### **ENVS327 The Microbial Fossil Record**

This course invites students to investigate the fossil record of microbial life to reveal the outsized impact microbes have on Earth and environmental systems. We will explore topics such as the origin of life, micropaleontology, marine biogeochemistry, biological oceanography, environmental microbiology, and astrobiology. This course will present students with the opportunity to engage with primary literature, write integrative narratives, and craft microbially inspired creative works.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-EES**

Identical With: **E&ES327, E&ES527**

Prereq: **None**

#### **ENVS329 Fire Ecology and Management**

Fire is a fundamental ecological disturbance process that regulates the structure and function of plant communities worldwide. However, increasing aridity under climate change and shifting human land use in recent centuries have altered fire behavior, imperiling many species. This course explores the ecological and social aspects of fire and sustainable fire management on planet Earth. Students examine shifting fire regimes over time, from indigenous use of fire prior to European colonization of the globe, to contemporary fire management. Class participants study the effects of global climate change on fire regimes and how such changes influence contemporary fire regimes and human livelihoods. The course format consists of a mixture of lectures, field exercises, active class discussions, student presentations, and research papers.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **E&ES329, E&ES349**

Prereq: **BIOL182 or ENVS197 or BIOL216 or E&ES199**

#### **ENVS330 Special Topics: Ecopoetics - Experimental Poetry in the Anthropocene**

How do poets speak for and from a world in flux and crisis? How do poets register and attempt to restore the degradation of the planet through language? How might altering the boundaries of conventional language use "through poetry" alter the bounds of conventional thinking and behaving, thus leading to more engaged and sustainable modes of living? This course, in part, will serve as a tour of contemporary eco-poets invested in looking at and caring for the current state of our planet through poetry. We will read poems that reflect the most critical environmental concerns of our time, and we will learn to see how these poems resist closure and are instead guided by exploration and interrogation in an attempt at reorienting our attention and intention as inheritors of this planet.

This is an advanced workshop for students committed to developing an understanding of eco-poetry's place in the more-than-literary world, as well as developing a personal eco-poetics from which to write. Students will choose an

environmental topic to research and write in service of for the semester and, by the end of the semester, will have a project-centered collection of poems. There will be bi-weekly presentations on the poetry collections we read, in-class writing experiments, in-the-field experiments, and intensive workshops of participants' work. The class will culminate in an eco-book arts project and a reflective essay.

Special attention will also be given to cultivating community and the benefits of sustaining an embodied artistic practice during extreme times and how doing so may benefit the health of the whole artist.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ENGL**

Identical With: **ENGL340**

Prereq: **(ENGL216 AND ENGL336) OR ENGL337**

#### **ENVS337 The Origins of Bacterial Diversity**

Wherever there is life, there are bacteria. Free-living bacteria are found in every environment that supports eukaryotes, and no animal or plant is known to be free of bacteria. There are most likely a billion or more species of bacteria, each living in its unique ecological niche. This course will explore the origins of bacterial biodiversity: how bacteria evolve to form new species that inhabit new ecological niches. We will focus on how the peculiarities of bacterial sex and genetics facilitate bacterial speciation. Topics will include the characteristics of bacterial sex, why barriers to genetic exchange are not necessary for speciation in bacteria, the great potential for formation of new bacterial species, the evolutionary role of genetic gifts from other species, and the use of genomics to identify ecologically distinct populations of bacteria.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **0.50**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL337, BIOL537**

Prereq: **[BIOL182 or MB&B182]**

#### **ENVS340 The Forest Ecosystem**

This course examines basic ecological principles through the lens of forest ecosystems, exploring the theory and practice of forest ecology at various levels of organization from individuals to populations, communities, and ecosystems. Lectures, lab exercises, and writing-intensive assignments will emphasize the quantification of spatial and temporal patterns of forest change at stand, landscape, and global scales.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.50**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL346, BIOL546, E&ES238, E&ES538**

Prereq: **[BIOL182 or MB&B182] OR [ENVS197 or BIOL197 or E&ES197] OR E&ES199**

#### **ENVS344 Renewable Energy and Negative Emission Technologies**

This course explores renewable energy solutions society must transition to in order to mitigate global climate change. The course will focus on renewable energy technologies such as solar, wind (onshore and offshore), geothermal, biofuels, hydro, and wave power. It will also cover negative emission technologies including soil carbon sequestration, reforestation, and carbon capture and storage (CCS).

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS, SBS-ENVS**

Prereq: **None**

**ENVS347 Ethics, Ecology, and Moral Change**

People commonly recognize that in facing global climate crises, we need to change our habits and practices. Yet our activities are bound up with our perceptions and with our embodied experience of value and possibility. This seminar dives into recent attempts to radically rework our ways of understanding and inhabiting the world. As the flip-side of environmental alienation is alienation from our embodiment, our sessions will incorporate movement and other challenges to sedentary classroom habits.

Given an account of thinking and action as always actively embodied and embedded in our surroundings, we will consider the hypothesis that shifts in action emerge together with shifts in perception. Radical accounts of metaphor and its uptake will help us develop accounts of perceptual change. Our readings will follow a variety of metaphorical directions, including animism and animacies, affordance and hyperobject, process, event and intra-action, native and other, inflammation and balance, dwelling and death, consumption and sustainability. How -- and with what risks and unexpected outcomes -- can these patterns of recognition help in orienting us to the challenges of environmental interdependence and volatility?

This course benefits from collaborative visits with philosopher-dancer Jill Sigman, via Wesleyan's Creative Campus Initiative. Sigman will co-shape discussion and activities during at least two of our sessions.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-PHIL**

Identical With: **PHIL347**

Prereq: **None**

**ENVS348 Animals in Archaeology**

This laboratory course will explore how zooarchaeological methods for analyzing animal bones and teeth excavated from archaeological sites allow us to reconstruct ancient human-animal-environmental interactions. We will cover a range of topics and techniques, including hands-on sessions for the identification and quantification of faunal remains. By the end of the course, students will be able to identify every bone in the mammalian skeleton and distinguish between the bones of common non-mammalian taxa. Additional topics will include ancient DNA in zooarchaeology, bone stable isotope analyses, human-caused extinctions, animal domestication, bone artifact production, and animal sacrifice.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ARCP, SBS-ARCP**

Identical With: **ARCP350, E&ES350**

Prereq: **None**

**ENVS350 Environmental Justice and Sustainability**

The US Environmental Protection Agency defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." Although we still have a long way to go in achieving this goal, over the last fifty years a vibrant environmental justice movement of racially-diverse activists and international coalitions has struggled to create a more equitable and sustainable world. Specifically, they have worked to expose and end the vastly disproportionate impacts of environmental degradation, climate change, air and water pollution, waste disposal, draught, wild fires, and famine on Black communities, Indigenous communities, and other communities of color around the globe. In this course, students will examine the environmental justice movement, its historical development, its strategies and tactics, and the many

contemporary environmental harms it strives to eliminate. Discussions, films, readings, and an independent research project will introduce students to topics including environmental racism, environmental health, (un)natural disasters, climate refugees, agricultural and industrial pollution, international waste export, seed imperialism, food sovereignty, water contamination, reproductive justice, environmental reparations, the extinction crisis, and just forms of sustainability.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **SISP349**

Prereq: **ENVS197 OR E&ES199**

**ENVS350Z Environmental Justice and Sustainability**

The United States Environmental Protection Agency defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." Although we still have a long way to go in achieving this goal, over the last fifty years a vibrant environmental justice movement of racially diverse activists and international coalitions has struggled to create a more equitable and sustainable world. Specifically, they have worked to expose and end the vastly disproportionate impacts of environmental degradation, climate change, air and water pollution, waste disposal, drought, wildfires, and famine on Black communities, Indigenous communities, and other communities of color around the globe.

In this course, students will examine the environmental justice movement, its historical development, its strategies and tactics, and the many contemporary environmental harms it strives to eliminate. Following a four-day-per-week Summer Session immersion schedule, daily readings and discussions, weekly films, and an independent research project will introduce students to topics including environmental racism, environmental health, (un)natural disasters, climate refugees, agricultural and industrial pollution, international waste export, seed imperialism, food sovereignty, water contamination, reproductive justice, environmental reparations, the extinction crisis, and just forms of sustainability.

Note: This course is being offered as a blend of synchronous class meetings and asynchronous work involving small group discussions.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **SISP349Z**

Prereq: **None**

**ENVS352 Energy and Modern Architecture, 1850-2020**

This seminar explores the evolution of mechanical systems for heating, ventilating, and cooling in modern architecture from the mid-19th century to the present. The aim is to show how architects, engineers, fabricators, and urban governments worked to develop modern systems of environmental controls, including lighting, as means of improving both the habitability of buildings and health of their occupants. The course will trace the adaptation of technical innovations in these fields to the built environment and how those responsible for it sought to manage energy and other resources, such as funds and labor, to create optimal solutions for different building types, such as factories, theaters, assembly halls, office buildings, laboratories, art museums, libraries, and housing of various kinds, including apartment buildings for higher- and lower-income residents. An important theme will be the relationship of energy systems for individual buildings and urban infrastructure, including water systems, electrical, and other utilities. The last part of the course focuses on

contemporary green, or sustainable, architecture, including passive and active solar heating, photovoltaics, energy-efficient cooling, LEED certification, wind and geo-exchange energy, green skyscrapers, net-zero energy buildings, vertical farming, and zero-carbon cities in the United States, Europe, and Asia.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARHA352**

Prereq: **None**

#### **ENVS359 Space Design for Performance**

In this course, students will study, construct, and deconstruct the performative space, whether in the theater or site-based, by analyzing the space as a context to be activated by the body of the performer and witnessed by an audience.

Through practical assignments, the class will learn the aesthetic history of the theatrical event (considering plays, rituals, street parades, and digital performances, among others), while developing and discovering the student's own creative process (visual, kinetic, textual, etc.). Students will be guided through each step of the design process, including close reading, concept development, visual research, renderings or drawings, model making and drafting.

In this course, special emphasis is given to contemporary performance as a mode of understanding cultural processes as a relational system of engagement within our ecosystem, while looking at environmental and sustainable design, materials, and the environmental impacts of processing. Students will create and design performance spaces, while realizing scale models and drawings and integrating the notions of design and environmental principles and elements.

Students will have the opportunity to develop skills using 3D-drafting and 3D-modeling software.

This course counts towards the Theater Arts category for the THEA major.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-THEA**

Identical With: **THEA359, DANC359, IDEA359**

Prereq: **THEA105 OR THEA150 OR THEA185 OR ARST131 OR ARST190**

#### **ENVS361 Living in a Polluted World**

This course treats the occurrences and origins, natural pathways, toxicologies, and histories of the major environmental contaminants. We all know about lead and its effects on humans, but how about cadmium and hexachromium, or the many unpronounceable organic contaminants, usually referred to by some acronym (e.g., DDT, POPs)? We also deal with the larger topics of CO<sub>2</sub>/climate change, the environmental nitrogen-oxide balance, and eutrophication of coastal waters (the "dead zones"). To be effective in this course, students will need basic high school/college-level proficiency in chemistry and math as we will delve into aspects of geochemistry, geology, toxicology, environmental law, and some simple modeling. The class consists of lectures, one problem set, one Hg-in-hair class study, and a class project on lead in drinking water in the Middletown area. This is also a service-learning course, providing environmental outreach to the larger Middletown community on local pollution.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **E&ES361**

Prereq: **None**

#### **ENVS369 Ecological Resilience: The Good, the Bad, and the Mindful**

This course will examine the concepts of resilience, fragility, and adaptive cycles in the context of ecosystem and social-ecological-system (SES) structures. These concepts have been developed to explain abrupt and often surprising changes in complex ecosystems and SES that are prone to disturbances. We will also include nonhierarchical interactions among components of systems (termed panarchy) to compare the interactions and dependencies of ecological and human community systems. A systems approach will be applied to thinking about restoration ecology, community reconstruction, and adaptive management theory.

All of the terms--resilience, fragility, adaptation, restoration, reconstruction--are fraught with subjectivity and valuation. We will use mindfulness and meditation techniques (including breathing and yoga) to more objectively and dynamically engage in the subject matter, leaving behind prejudice or bias. Students will be expected to approach these techniques with an open mind and practice them throughout the semester. The objective is to provide students with a more comprehensive framework with which to gain deeper understanding and integration of the science with the social issues.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-ENVS**

Identical With: **E&ES342, BIOL368**

Prereq: **[E&ES197 or BIOL197] OR [BIOL182 or MB&B182]**

#### **ENVS374 Food Security: History of an Idea**

The Food and Agricultural Organization of the United Nations has held that "food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." This course is a history of food insecurity as a material condition and a geopolitical concept for explaining uneven access to provisions. Although we begin with the emergence of food security as a concept during World War II, we will spend the majority of the course studying other ways of organizing access to the means of subsistence. Topics discussed will include why human beings share food, the invention of agriculture, transportation infrastructure, international trade, food aid, agricultural research and development, poverty, conflict, and famine.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST374, SISP374**

Prereq: **None**

#### **ENVS376 The Artist in the Community: Civic Engagement and Collaborative Dancemaking**

Through both theoretical analysis and practical application, students will grow their understanding of community-based performance and collaborative art-making. Grounded in readings and seminar discussions about the practice and process of community-based art, students will apply their learning through community-engaged research, job shadowing and interviewing campus employees, and developing creative projects with partnering campus staff. Through direct practice, students in the course will explore how collaborative performance can address local issues, spark community dialogue, and encourage civic participation--whether on a college campus, in a neighborhood or across a city.

Class meetings will take place virtually; student research and project development will be conducted in person. Note: This course includes a Spring Break travel opportunity to work on a Forklift Danceworks project. Details on travel logistics to come.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ENVS**

Identical With: **DANC376, THEA376**

Prereq: **None**

### **ENVS377 Perspectives in Arts as Culture: Ukrainian Arts and Language as Resistance**

Throughout history, arts and language have been central to Ukrainian resilience. This course will introduce students to basic elements of the Ukrainian language as well as the rich tradition of Ukrainian arts--dance, theater, poetry, literature, visual arts and crafts--and the way they have survived and thrived despite 400 years of censorship and persecution. Each week, one class will focus on the basics of the Ukrainian language, its history as a vital element of the Ukrainian culture, as well as current national language policy and practice. The second class will explore the ways that arts in Ukraine foster psychosocial, physical, and political resilience in the face of crisis. Students will engage with traditional arts and crafts, learn about leading experimental artists (1700s-present) and their role in major art movements in history, hear from an array of guest artists from Ukraine, and complete a final creative project that explores the current political moment and conflict in Ukraine.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-DANC**

Identical With: **DANC377, CSPL367, REES377**

Prereq: **None**

### **ENVS381 Japan's Nuclear Disasters**

The atomic bombings of Hiroshima and Nagasaki in 1945 are central to the history of the 20th century. This course examines the scientific, cultural, and political origins of the bombs; their use in the context of aerial bombings and related issues in military history; the decisions to use them; the human cost to those on whom they were dropped; and their place in history, culture, and identity politics to the present. Sources will include works on the history of science; military, political, and cultural history; literary and other artistic interpretations; and a large number of primary source documents, mostly regarding U.S. policy questions. In addition, we will be examining the development of the civilian nuclear industry in Japan with a focus on the nuclear meltdowns in Fukushima and other accidents. This is an extremely demanding course.

This interdisciplinary, experiential, and experimental course combines studio learning (movement studies and interdisciplinary, creative exploration) and seminars (presentations and discussions). No previous dance or movement study is required, and the course is not particularly geared toward dancers or performers. However, your willingness to experiment on and share movement is important. We encourage you to think about movement as a method of accessing human experiences and making distance malleable, a way to explore your own sensations, thoughts, and reactions in learning history.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.50**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST381, SISP381, CEAS384, DANC381**

Prereq: **None**

### **ENVS382 Physical Chemistry for the Life Sciences**

The course is concerned with the basic physicochemical principles and model systems essential to understanding, explaining, and predicting the behavior of biological systems in terms of molecular forces. The course integrates fundamental concepts in thermodynamics, kinetics, and molecular spectroscopy with the structures, functions, and molecular mechanisms of biological processes. The objectives of the course are to (1) familiarize life science students at the advanced undergraduate and beginning graduate level with basic physicochemical laws, theories, and concepts important to the life sciences; (2) provide a working knowledge of mathematical methods useful in life science research; (3) develop a critical perspective on explanation of biological processes and understanding biological systems; and (4) survey the main applications of physical chemistry in the life sciences. Theory, methodology, and biophysical concepts are distributed throughout the course.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-MBB**

Identical With: **MB&B381, CHEM381, MB&B581**

Prereq: **(CHEM251 AND MATH117) OR (CHEM251 AND MATH120) OR (CHEM251 AND MATH121)**

### **ENVS383 Anthropocene as Modern Grand Narrative**

The Anthropocene refers to the new age in which humankind started to have a significant impact in altering or rupturing the Earth's systems, where the Earth is now moving out of its current geological epoch (the Holocene) and into "a less biologically diverse, less forested, much warmer, and probably wetter and stormier state." (Steffen, Crutzen, and McNeill 2007, Sciences Module, 614). This course begins by examining the debates on the definition and periodization. It then explores precursors to the concept of the Anthropocene, such as Confucian and Daoist writings on the taming of the natural environment for human needs, the catastrophism versus uniformitarianism debate, and contesting definitions of sustainability. Finally, it looks at how recent works of environmental history engaged with the concept of the Anthropocene and brought our attention to the impact of the transition from organic economy to carbon economy. Is the Anthropocene a new meta-narrative that professes to be the theory that explains all human activity? Is the Anthropocene a call to arms for environmental justice? Is the Anthropocene just a declensionist fairy tale--one that leads us down a dead end, throwing up our arms in resignation over the irreversible destruction of the natural environment?

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST382, SISP382**

Prereq: **None**

### **ENVS387 History of the End**

How will it end? Scientific hubris, a nuclear event, an asteroid, environmental disaster, overpollution, resource scarcity, commodity price spikes, riots, social chaos, social control? This seminar investigates how people have imagined apocalypse and post-apocalypse over time, on the premise that fantasies of the end provide a window into the anxieties of the societies that produce them.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST387, SISP387**

Prereq: **None**

### **ENVS391 Senior Colloquium: Environmental Studies**

This course provides an opportunity for students to share and workshop their environmental studies senior capstone projects. Each student will present a live or videorecorded report to the class once during each semester. Before their

presentation, the student will make available readings and questions they have regarding the most challenging issues about their research project. Classmates will prepare for each student's presentation by reviewing the materials made available before class. During class, students will discuss and critique each project with the goal of 1) improving the depth and content of senior capstone research projects and 2) sharing project content and goals among the wide range of student interests across the environmental studies major.

Offering: **Host**

Grading: **Cr/U**

Credits: **0.50**

Gen Ed Area: **None**

Prereq: **ENVS201**

#### **ENVS392 Senior Colloquium: Environmental Studies**

This course provides an opportunity for students to share and workshop their environmental studies senior capstone projects. Each student will present a live or videorecorded report to the class once during each semester. Before their presentation, the student will make available readings and questions they have regarding the most challenging issues about their research project. Classmates will prepare for each student's presentation by reviewing the materials made available before class. During class, students will discuss and critique each project with the goal of 1) improving the depth and content of senior capstone research projects and 2) sharing project content and goals among the wide range of student interests across the environmental studies major.

Offering: **Host**

Grading: **Cr/U**

Credits: **0.50**

Gen Ed Area: **None**

Prereq: **None**

#### **ENVS399 History and Geography**

Maps are part of a broader family of value-laden images. This is a research seminar about the global history of cartography from 1490s to the recent past. We will study maps from the early modern and modern world and examine how maps were used as instruments of political power, shaped the imagination of peoples around the world, and inspired new ways to imagine our self-identity.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST399, CEAS214, SISP399**

Prereq: **None**

#### **ENVS399Z History and Geography: Global Cartography and Visual Studies of Science**

Maps are part of a broader family of value-laden images. This is a research seminar about the global history of cartography from the 1490s to the recent past. You will study maps from the early modern and modern world, and examine how maps were used as instruments of political power, shaped the imagination of peoples around the world, and inspired new ways to imagine our self-identity.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-HIST**

Identical With: **HIST399Z, SISP399Z, CEAS214Z**

Prereq: **None**

#### **ENVS401 Individual Tutorial, Undergraduate**

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **OPT**

#### **ENVS402 Individual Tutorial, Undergrad**

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **OPT**

#### **ENVS403 Senior Essay: Environmental Studies**

All ENVS majors are required to complete a senior capstone project in a form that is approved by their primary major with a topic that is approved by the student's ENVS advisor. In the event that the student cannot find a mentor for their capstone project, the student may complete a special written research project to meet the research requirement. The topic must be approved by the ENVS advisor and progress must be reported to both the ENVS advisor and the Program Director during the fall semester. The written project is a senior essay, using primary sources and must concern an environmental topic from the perspective of the student's primary major. The senior project is due at the senior thesis deadline. It will be the responsibility of the ENVS Program Director to find a suitable reader to evaluate the written work.

Offering: **Host**

Grading: **OPT**

#### **ENVS404 Senior Essay: Environmental Studies**

All ENVS majors are required to complete a senior capstone project in a form that is approved by their primary major with a topic that is approved by the student's ENVS advisor. In the event that the student cannot find a mentor for their capstone project, the student may complete a special written research project to meet the research requirement. The topic must be approved by the ENVS advisor and progress must be reported to both the ENVS advisor and the Program Director during the fall semester. The written project is a senior essay, using primary sources and must concern an environmental topic from the perspective of the student's primary major. The senior project is due at the senior thesis deadline. It will be the responsibility of the ENVS Program Director to find a suitable reader or to evaluate the written work.

Offering: **Host**

Grading: **OPT**

#### **ENVS409 Senior Thesis Tutorial**

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **A-F**

#### **ENVS410 Senior Thesis Tutorial**

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **A-F**

#### **ENVS411 Group Tutorial, Undergraduate**

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **OPT**

#### **ENVS412 Group Tutorial, Undergraduate**

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **OPT**

#### **ENVS419 Student Forum**

Student-run group tutorial, sponsored by a faculty member and approved by the chair of a department or program.

Offering: **Host**

Grading: **Cr/U**

#### **ENVS420 Student Forum**

Student-run group tutorial, sponsored by a faculty member and approved by the chair of a department or program.

Offering: **Host**

Grading: **Cr/U**

**ENVS465 Education in the Field, Undergraduate**

Students must consult with the department and class dean in advance of undertaking education in the field for approval of the nature of the responsibilities and method of evaluation.

Offering: **Host**

Grading: **A-F**

**ENVS467 Independent Study, Undergraduate**

Credit may be earned for an independent study during a summer or authorized leave of absence provided that (1) plans have been approved in advance, and (2) all specified requirements have been satisfied.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **None**

Prereq: **None**

**ENVS469 Education in the Field, Undergraduate**

Students must consult with the department and class dean in advance of undertaking education in the field for approval of the nature of the responsibilities and method of evaluation.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **None**

Prereq: **None**

**ENVS491 Teaching Apprentice Tutorial**

The teaching apprentice program offers undergraduate students the opportunity to assist in teaching a faculty member's course for academic credit.

Offering: **Host**

Grading: **OPT**

**ENVS492 Teaching Apprentice Tutorial**

The teaching apprentice program offers undergraduate students the opportunity to assist in teaching a faculty member's course for academic credit.

Offering: **Host**

Grading: **OPT**