

## Sustainability Courses Dickinson College Spring 2014

Listed here are Sustainability designated courses offered Spring 2014 that explore social, economic and environmental dimensions of sustainability challenges and solutions. The courses vary in the degree to which sustainability is a focus of study and are classified into two categories. **Sustainability Investigations** courses, identified by the label **SINV**, engage students in a deep and focused study of problems with sustainability as a major emphasis of the course. **Sustainability Connections** courses, identified by the label **SCON**, engage students in making connections between the main topic of the course and sustainability. Sustainability is related to but is not a major focus of SCON courses. In Spring 2014, **29** Sustainability Connections and **20** Sustainability Investigation courses are offered represented by **22** different departments.

DEPT	COURSE #	TITLE	DESIGNATION	DESCRIPTION	INSTRUCTOR	DIVISION
AFST	220	<b>Health &amp; Healing in Africa</b>	SCON	This course addresses three interrelated aspects of health and healing in Africa. We examine health in Africa from a biomedical perspective, learning about disease, morbidity, mortality, and biomedical care. We place African health and health care into a framework of political economy, examining the causes and consequences of illness and disease and the forces that shape and constrain care. We also examine the cultural and historical dimensions of health and healing in specific regions of the continent, bringing ethnographic knowledge to bear on contemporary health problems and thereby gaining an understanding of the lived experiences of health and healing in Africa. Cross listed as AFST 220 and ANTH 245.	Jim Ellison	Interdisciplinary
AFST	220	<b>Marginalization &amp; Representation</b>	SCON	This course explores the political representation of groups that have historically been marginalized in American society and excluded from the democratic process either through statute or through common practices. In particular, issues of racism, sexism, classism, and homophobia will be addressed. Cross-listed as AFST 220 and POSC 290.	Vanessa Tyson	Interdisciplinary
AFST	320	<b>Black Sustainability in African Diasporic Literatures</b>	SINV	Selected topics in Africana Studies at the intermediate level. The subject matter will vary from year to year dependent upon the interests of core and contributing Africana Studies faculty as well as the needs and interests of students. Topics may include the Atlantic Slave Trade and Africans in the Making of the Atlantic World, Major African American Writers, Caribbean Diasporic Identities, among others. Cross-listed as AFST 220 and ENGL 101.	Lynn Johnson	Interdisciplinary
AFST	310	<b>Health and Healing in Africa</b>	SCON	This course will address three interrelated aspects of health and healing in Africa. We will examine health threats from a geographical and biomedical perspective, learning about epidemiology and biomedical care. We will place African health matters into a framework of political economy, by which we can differently understand the causes and consequences of illness and the forces that shape and constrain care. Our overarching concern will be to learn about the cultural and historical dimensions of health and healing in several parts of the continent, bring anthropological knowledge to bear on contemporary health problems and thereby gaining an understanding of the lived experiences of health and healing in Africa. Cross-listed as AFST 310 and ANTH 245.	Jim Ellison	Interdisciplinary
ANTH	101	<b>Anthropology for the 21st Century</b>	SCON	The primary focus is on cultural anthropology, or the comparative study of human diversity across cultures. Other subfields within anthropology, namely archaeology, biological anthropology, and linguistic anthropology will also contribute perspectives. The goal is to demonstrate how anthropological perspectives enlighten our understanding of contemporary social phenomena and problems, highlighting the relevance of anthropology to everyday lives and especially to issues of human diversity.	Kjell Enge	2
ANTH	245	<b>Health and Healing in Africa</b>	SCON	This course will address three interrelated aspects of health and healing in Africa. We will examine health threats from a geographical and biomedical perspective, learning about epidemiology and biomedical care. We will place African health matters into a framework of political economy, by which we can differently understand the causes and consequences of illness and the forces that shape and constrain care. Our overarching concern will be to learn about the cultural and historical dimensions of health and healing in several parts of the continent, bring anthropological knowledge to bear on contemporary health problems and thereby gaining an understanding of the lived experiences of health and healing in Africa. Cross-listed as AFST 310 and ANTH 245.	Jim Ellison	2
ANTH	260	<b>Environmental Archeology</b>	SINV	In this class, we will examine the methods and theories that contribute to our understanding of past human-environmental interactions and how they have varied through time and space. We are currently experiencing national and international debates about the impact humans have on our planet. Are our behaviors causing global warming? Is it a natural process? How will these changes in rainfall and temperature affect our food systems, towns, and cities? How are they affecting the flora and fauna? In order to contextualize our current situation, it is useful to consider these dynamics in the past. Humans have been interacting with, adapting to, and modifying their natural surroundings for thousands of years. In this class, we will explore different anthropological and archaeological theories regarding how humans interact with the natural world: do we simply adapt to these conditions (temperature, rainfall, vegetation) or do we actively modify them to suit our needs? We will learn about, as well as experience, some of the methods archaeologists use to reconstruct past human interactions with geological entities (geoarchaeology), plants (archaeobotany), and animals (zooarchaeology). Cross-listed as ANTH 260, ARCH 260 and ENST 311.	Maria Bruno	2
ANTH	261	<b>Archeology of North America</b>	SCON	This course reviews Pre-Columbian landscapes north of Mesoamerica. We consider topics including the timing and process of the initial peopling of the continent, food production, regional systems of exchange, development of social hierarchies, environmental adaption and the nature of initial colonial encounters between Europeans and Native Americans. These questions are addressed primarily by culture area and region. Cross-listed as ANTH 261 and ARCH 261.	Maria Bruno	2

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ANTH	300	<b>Archaeological Method and Theory</b>	<i>SINV</i>	This course is an introduction to the fundamentals of archaeological field and laboratory methods. It also surveys the ideas, concepts, and theories archaeologists employ to synthesize archaeological data and construct interpretations about ancient lives. The course is a combination of lecture, discussion, and hands-on experience that will focus primarily on survey and excavation methods, but also on basic laboratory methods. Students will also learn about the major theoretical trends in North American archaeology. The methods and theories learned in the course will be applied to carry out the Dickinson College Archaeological Project at Camp Michaux, located in the South Mountain area of the Michaux State Forest. Students will also tackle ethical issues in archaeology particularly the protection and preservation of archaeological resources and engagement with the communities living near the archaeological sites, in this case, our local community in Carlisle and the greater Cumberland Valley. Cross-listed as ANTH 300 and ARCH 300.	Maria Bruno	2
ANTH	331	<b>Principles of Human Evolution</b>	<i>SCON</i>	This course offers an intensive examination of the evolution of the human family, from our earliest ancestors to the origin and dispersal of modern humans. We use skeletal biology, geology, and archaeology to understand the human evolutionary record. Offered every spring.	Karen Weinstein	2
ARCH	218	<b>Geographic Information Systems</b>	<i>SINV</i>	Geographic Information Systems (GIS) is a powerful technology for managing, analyzing, and visualizing spatial data and geographically-referenced information. It is used in a wide variety of fields including archaeology, agriculture, business, defense and intelligence, education, government, health care, natural resource management, public safety, transportation, and utility management. This course provides a fundamental foundation of theoretical and applied skills in GIS technology that will enable students to investigate and make reasoned decisions regarding spatial issues. Utilizing GIS software applications from Environmental Systems Research Institute (ESRI), students work on a progression of tasks and assignments focused on GIS data collection, manipulation, analysis, output and presentation. The course will culminate in a final, independent project in which the students design and prepare a GIS analysis application of their own choosing. Cross-listed as ARCH 218, ENST 218 and ERSC 218.	Jim Ciarrocca	Interdisciplinary
ARCH	260	<b>Environmental Archeology</b>	<i>SINV</i>	In this class, we will examine the methods and theories that contribute to our understanding of past human-environmental interactions and how they have varied through time and space. We are currently experiencing national and international debates about the impact humans have on our planet. Are our behaviors causing global warming? Is it a natural process? How will these changes in rainfall and temperature affect our food systems, towns, and cities? How are they affecting the flora and fauna? In order to contextualize our current situation, it is useful to consider these dynamics in the past. Humans have been interacting with, adapting to, and modifying their natural surroundings for thousands of years. In this class, we will explore different anthropological and archaeological theories regarding how humans interact with the natural world: do we simply adapt to these conditions (temperature, rainfall, vegetation) or do we actively modify them to suit our needs? We will learn about, as well as experience, some of the methods archaeologists use to reconstruct past human interactions with geological entities (geoarchaeology), plants (archaeobotany), and animals (zooarchaeology). Cross-listed as ANTH 260, ARCH 260 and ENST 311.	Maria Bruno	2
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ARCH	318	<b>Advanced Applications in GIS</b>	<i>SINV</i>	The course is intended as a continuation of the introductory course on Geographic Information Systems, 218, and will concentrate on more advanced discussions and techniques related to spatial analysis and GIS project design. The main focus of the course will be on using higher-level GIS methods to investigate and analyze spatial problems of varying complexity; however, the specific project and topical applications will vary depending on student interests. Students will be required to develop and complete an individual spatial analysis project that incorporates advanced GIS techniques. Cross-listed as ARCH 318, ENST 318 and ERSC 318.	Jim Ciarrocca	Interdisciplinary
ARTH	160	<b>Introduction to Sustainable Practices in Public Art</b>	<i>SINV</i>	This course will focus on themes of sustainability in the design, creation and installation of public art. A core project of the class will result in the collaborative making of a public sculpture using waste material from a sustainability sensitive, private fabrication company that specializes in producing building technologies and environmental support systems.	Anthony Cervino	1
BIOL	129	<b>Changing Ocean Ecosystem W/Lab</b>	<i>SINV</i>	An introduction to the biology of marine communities, including salt marshes and mangroves, intertidal zones, reefs, and deep-sea vents, among others. For each community, the physical characteristics of the environment as well as the physiological adaptations of the resident species will be examined. We will also focus on how marine communities are changing in response to anthropogenic stresses in light of concepts such as diversity indexes, keystone species, and disturbance theory. Selected readings from the primary literature and the popular press are required. Laboratory projects will emphasize experimental design and hypothesis testing.	Michael Potthoff	3

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BIOL	401	<b>Wildlife Ecology</b>	<i>SINV</i>	An in-depth study of specialized subject areas of biology. Students will visit various Northeastern Pennsylvania habitats and have hands-on labs with living organisms, investigating the roles each of these play in the forest and vernal pond environments. Cross-listed as BIOL 401 and ENST 310.	Gene Wingert	3
BIOL	401	<b>Ornithology</b>	<i>SCON</i>	This course emphasizes the evolution, morphology, physiology, ecology and conservation biology of birds. Students will have numerous opportunities both in and outside of the classroom to examine conservation issues and actions as they relate to the functioning of natural ecosystems, the consequences of anthropogenic impacts to those environments and learn how sustainability practices influence many bird species, populations and communities. The lab portion of this course will focus on hands-on learning through a variety of tools, mechanisms and field experiences including but not limited to use of study skins and skeletons, field guides, optics and field-monitoring techniques. Students will be regularly immersed in living labs during field trips both local and regional including visits to a bird banding station, state wildlife management areas and research study sites. In addition students will learn how to identify birds through specific behaviors, visual field marks, songs and calls. There will be at least one day-long field trip during a weekend, one extended lab field trip to a waterfowl stopover habitat during spring migration and an optional 4-5 day field trip over spring break to visit other sites utilized by birds in and outside of Pennsylvania. Each student will also complete a research paper on selected ornithological topics. Cross-listed as BIOL 401 and ENST 310.	Kim Van Fleet	3
BIOL	401	<b>Limnology: The Study of Lakes</b>	<i>SINV</i>	In this course, students will learn about the physical, chemical and biological characteristics of lakes, ponds, reservoirs, and wetlands and the interactions that shape these aquatic ecosystems. This course considers the connections between lake ecosystems and the atmosphere and their watersheds including the running waters and ground waters that modify and transport components of the land to the lake. Students will apply information learned through field trips, lectures, class exercises, case studies, and discussion of relevant literature to investigate environmental problems associated with aquatic ecosystem response to human manipulations and disturbances ranging from global to local scales. Students will become familiar with common methods used for studying lakes, ponds, reservoirs, and wetlands through field trips to local sites and analytical techniques in the laboratory. This experience will culminate in a field-based group research project. Cross-listed as BIOL 401 and ENST 310.	Kristin Strock	3
EASN	206	<b>Asian Urban Ecology</b>	<i>SINV</i>	Asian cities are among the most economically productive in the world, and also number some of the most polluted and environmentally challenged urban centers on the planet. Further complicating this picture is the fact that many Asian cities are also on the cutting edge of policies associated with "ecological modernization," the effort to balance and manage competing economic and environmental interests and values. This course will examine a range of Asian cities, including, for example, Beijing, Singapore, Tokyo, Hong Kong, Shanghai and Seoul, and a range of issues like resource management, urban sprawl and congestion, environmental protection, green space and urban design, biodiversity and environmental justice with a view to better understanding the evolving interdependence among political, economic, social and natural systems in urban Asia. Cross-listed as EASN 206 and POSC 290.	David Strand	Interdisciplinary
EASN	206	<b>Environmental Degradation of the Yellow River, China</b>	<i>SCON</i>	Yellow River, central of the rise of Chinese civilization, is the most turbid river in the modern world; however, its water was clear 1000 years ago. What has happened to this river? This interdisciplinary introductory-level course focuses on the environmental degradation in the Yellow River beginning 5000 years ago. The course is aimed at both science and non-science students alike. There are no prerequisites. Topics covered will include 1) Climate change in the Yellow River drainage basin since the Holocene, including a brief temperature and drought history since the Neolithic Age; 2) The impacts of deforestation and human reclamation on Yellow River and its significance to fluvial and sediment discharge; 3) Frequent river course shifts and their relationship to environmental degradation and human activities; 4) Fluvial and sediment budget and sedimentation in the lower reaches and offshore area; and 5) The socio-economic impacts of the historical river course shifts and their significance to regional sustainability development. Cross-listed as EASN 206, ENST 311 and ERSC 311.	Kelin Zhuang	Interdisciplinary
ECON	111	<b>Introduction to Microeconomics</b>	<i>SCON</i>	A study of the fundamentals of economic analysis and of basic economic institutions, with particular emphasis upon consumer demand and upon the output and pricing decisions of business firms. The implications of actions taken by these decision-makers, operating within various market structures, upon the allocation of resources and the distribution of income are examined. Special attention is given to the sociopolitical environment within which economic decisions are made.	Anthony Underwood	2
ECON	222	<b>Environmental Economics</b>	<i>SCON</i>	A study of human production and consumption activities as they affect the natural and human environmental systems and as they are affected by those systems. The economic behavioral patterns associated with the market economy are scrutinized in order to reveal the biases in the decision-making process which may contribute to the deterioration of the resource base and of the quality of life in general. External costs and benefits, technological impacts, limits to economic growth, and issues of income and wealth distribution are examined. A range of potential policy measures, some consistent with our life style and some not, are evaluated. Cross-listed as ECON 222 and ENST 222.	Nicola Tynan	2
ECON	314	<b>Limits to Growth and the Macroeconomics of Climate Change</b>	<i>SINV</i>	Theories of economic growth will be introduced and analyzed in order to understand the prominent role they play in macroeconomics and climate change debates. Economic growth is often treated as a necessity for the functioning and development of national economies. Continuous growth of this kind requires the use of natural and human resources on an ever-expanding scale and carries with it increasing greenhouse gas emissions. In light of recent research on world climate change this vision of economic growth is brought into question and critically examined. Different approaches to accounting for the effects of greenhouse gas accumulation on the world economy in terms of output, employment, and distribution will be treated in depth. Potential mitigation efforts on a world scale will also be explored.	Jonathon Cogliano	2
ECON	332	<b>Economics of Natural Resources</b>	<i>SCON</i>	This course uses microeconomics to analyze the use and conservation of natural resources, including energy, minerals, fisheries, forests, and water resources, among others. Broad themes include the roles of property rights, intergenerational equity, and sustainable development in an economy based on resource exploitation. Cross-listed as ECON 332 and ENST 311.	Nicola Tynan	2

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ENGL	101	<b>American Nature Writing: Environment, Cultures, and Values</b>	<i>SINV</i>	Perhaps no genre of literature is as uniquely American as American nature writing. No genre can tell us as much about our environment, environmental culture, and the values that derive from and depend upon our natural environment. We will also work to define "nature" and to understand the complex connections between humans and the nonhuman environment they inhabit. Our guides will be Henry David Thoreau, Aldo Leopold, Edward Abbey, Annie Dillard, Terry Tempest Williams, Bill McKibben, and others. The course will be a study of metaphor, poetic and prose styles, and the link between literary and naturalistic observation. Our texts will be literary; our contexts will be environmental, cultural, and ethically ecological. Are humans a part of the natural environment? Do we see ourselves as distinct from nature? Is our environment beautiful and benign (sunsets, daffodils, puffins) or ugly and destructive (hurricanes, cancer, death)? We will examine the current importance (as well as the controversial aspects) of evolutionary ideas, and we will emphasize the role played by literature in the development of our own environmental assumptions and values. Two essays and a final exam. Cross-listed as ENGL 101 and ENST 111.	B. Ashton Nichols	1
ENGL	101	<b>Black Sustainability in African Diasporic Literatures</b>	<i>SINV</i>	Selected topics in Africana Studies at the intermediate level. The subject matter will vary from year to year dependent upon the interests of core and contributing Africana Studies faculty as well as the needs and interests of students. Topics may include the Atlantic Slave Trade and Africans in the Making of the Atlantic World, Major African American Writers, Caribbean Diasporic Identities, among others. Cross-listed as AFST 220 and ENGL 101.	Lynn Johnson	Interdisciplinary
ENST	111	<b>American Nature Writing: Environment, Cultures, and Values</b>	<i>SINV</i>	Perhaps no genre of literature is as uniquely American as American nature writing. No genre can tell us as much about our environment, environmental culture, and the values that derive from and depend upon our natural environment. We will also work to define "nature" and to understand the complex connections between humans and the nonhuman environment they inhabit. Our guides will be Henry David Thoreau, Aldo Leopold, Edward Abbey, Annie Dillard, Terry Tempest Williams, Bill McKibben, and others. The course will be a study of metaphor, poetic and prose styles, and the link between literary and naturalistic observation. Our texts will be literary; our contexts will be environmental, cultural, and ethically ecological. Are humans a part of the natural environment? Do we see ourselves as distinct from nature? Is our environment beautiful and benign (sunsets, daffodils, puffins) or ugly and destructive (hurricanes, cancer, death)? We will examine the current importance (as well as the controversial aspects) of evolutionary ideas, and we will emphasize the role played by literature in the development of our own environmental assumptions and values. Two essays and a final exam. Cross-listed as ENGL 101 and ENST 111.	B. Ashton Nichols	1
ENST	130	<b>Introduction to Environmental Science: Energy, Waste, and Human Health</b>	<i>SINV</i>	An integrated, interdisciplinary study of environmental disruption and management where the application of natural science principles informs and management where the application of natural science principles informs and understanding of human-environmental interaction. Emphasis will be on the study of energy procurement and use, waste management, and human population dynamics and environmental health. Field study includes travel to industrial, mining, and agribusiness sites. Laboratory work includes using public databases for documentation of toxic releases and human health effects; and the generation, measurement, and use of renewable energy resources.	Greg Howard	2
ENST	132	<b>Foundations of Environmental Science</b>	<i>SINV</i>	An integrated, interdisciplinary study of environmental disruption and management. Emphasis will be on the study of energy procurement, waste management, and human environmental health. Field study includes travel to industrial, mining, and agribusiness sites. Laboratory work includes using federal databases for documentation of toxic releases and human health effects and the generation, measurement, and use of renewable energy resources. This course is designed for students with a special interest in Environmental Studies and will focus on quantitative and qualitative methods for environmental analysis and critical thinking in preparation for future study.	Brian Pedersen	2
ENST	202	<b>Energy Resources</b>	<i>SCON</i>	The study of the origin, geologic occurrence, and distribution of petroleum, natural gas, coal, and uranium. Discussions include the evaluation and exploitation, economics, law, and the environmental impact of these resources and their alternatives, including geothermal, wind, solar, tidal, and ocean thermal power. Cross-listed as ENST 202 and ERSC 202.	Marcus Key	3
ENST	206	<b>American Environmental History</b>	<i>SCON</i>	Examines the interaction between humans and the natural environment in the history of North America. Explores the problem of sustainable human uses of the North America environment from the pre-colonial period to the present. Also serves as an introduction to the subfield of environmental history, which integrates evidence from various scientific disciplines with traditional documentary and oral sources. Topics include: American Indian uses of the environment, colonial frontiers, agricultural change, industrialization, urbanization, westward expansion, the Progressive-Era conservation movement, changes in lifestyle and consumption including their increasingly global impact, shifts in environmental policy, and the rise of the post-World War II environmental movement. Cross-listed as ENST 206 and HIST 206.	Emily Pawley	2
ENST	218	<b>Geographic Information Systems</b>	<i>SINV</i>	Geographic Information Systems (GIS) is a powerful technology for managing, analyzing, and visualizing spatial data and geographically-referenced information. It is used in a wide variety of fields including archaeology, agriculture, business, defense and intelligence, education, government, health care, natural resource management, public safety, transportation, and utility management. This course provides a fundamental foundation of theoretical and applied skills in GIS technology that will enable students to investigate and make reasoned decisions regarding spatial issues. Utilizing GIS software applications from Environmental Systems Research Institute (ESRI), students work on a progression of tasks and assignments focused on GIS data collection, manipulation, analysis, output and presentation. The course will culminate in a final, independent project in which the students design and prepare a GIS analysis application of their own choosing. Cross-listed as ARCH 218, ENST 218 and ERSC 218.	Jim Ciarrocca	2

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ENST	310	<b>Wildlife Ecology</b>	SINV	An in-depth study of specialized subject areas of biology. Students will visit various Northeastern Pennsylvania habitats and have hands-on labs with living organisms, investigating the roles each of these play in the forest and vernal pond environments. Cross-listed as BIOL 401 and ENST 310.	Gene Wingert	2
ENST	310	<b>Ornithology</b>	SCON	This course emphasizes the evolution, morphology, physiology, ecology and conservation biology of birds. Students will have numerous opportunities both in and outside of the classroom to examine conservation issues and actions as they relate to the functioning of natural ecosystems, the consequences of anthropogenic impacts to those environments and learn how sustainability practices influence many bird species, populations and communities. The lab portion of this course will focus on hands-on learning through a variety of tools, mechanisms and field experiences including but not limited to use of study skins and skeletons, field guides, optics and field-monitoring techniques. Students will be regularly immersed in living labs during field trips both local and regional including visits to a bird banding station, state wildlife management areas and research study sites. In addition students will learn how to identify birds through specific behaviors, visual field marks, songs and calls. There will be at least one day-long field trip during a weekend, one extended lab field trip to a waterfowl stopover habitat during spring migration and an optional 4-5 day field trip over spring break to visit other sites utilized by birds in and outside of Pennsylvania. Each student will also complete a research paper on selected ornithological topics. Cross-listed as BIOL 401 and ENST 310.	Kim Van Fleet	3
ENST	310	<b>Limnology: The Study of Lakes</b>	SINV	In this course, students will learn about the physical, chemical and biological characteristics of lakes, ponds, reservoirs, and wetlands and the interactions that shape these aquatic ecosystems. This course considers the connections between lake ecosystems and the atmosphere and their watersheds including the running waters and ground waters that modify and transport components of the land to the lake. Students will apply information learned through field trips, lectures, class exercises, case studies, and discussion of relevant literature to investigate environmental problems associated with aquatic ecosystem response to human manipulations and disturbances ranging from global to local scales. Students will become familiar with common methods used for studying lakes, ponds, reservoirs, and wetlands through field trips to local sites and analytical techniques in the laboratory. This experience will culminate in a field-based group research project. Cross-listed as BIOL 401 and ENST 310.	Kristin Strock	3
ENST	311	<b>Environmental Archeology</b>	SINV	In this class, we will examine the methods and theories that contribute to our understanding of past human-environmental interactions and how they have varied through time and space. We are currently experiencing national and international debates about the impact humans have on our planet. Are our behaviors causing global warming? Is it a natural process? How will these changes in rainfall and temperature affect our food systems, towns, and cities? How are they affecting the flora and fauna? In order to contextualize our current situation, it is useful to consider these dynamics in the past. Humans have been interacting with, adapting to, and modifying their natural surroundings for thousands of years. In this class, we will explore different anthropological and archaeological theories regarding how humans interact with the natural world: do we simply adapt to these conditions (temperature, rainfall, vegetation) or do we actively modify them to suit our needs? We will learn about, as well as experience, some of the methods archaeologists use to reconstruct past human interactions with geological entities (geoarchaeology), plants (archaeobotany), and animals (zooarchaeology). Cross-listed as ANTH 260, ARCH 260 and ENST 311.	Maria Bruno	2
ENST	311	<b>Economics of Natural Resources</b>	SCON	This course uses microeconomics to analyze the use and conservation of natural resources, including energy, minerals, fisheries, forests, and water resources, among others. Broad themes include the roles of property rights, intergenerational equity, and sustainable development in an economy based on resource exploitation. Cross-listed as ECON 332 and ENST 311.	Nicola Tynan	2
ENST	311	<b>Environmental Degradation of the Yellow River, China</b>	SCON	Yellow River, central of the rise of Chinese civilization, is the most turbid river in the modern world; however, its water was clear 1000 years ago. What has happened to this river? This interdisciplinary introductory-level course focuses on the environmental degradation in the Yellow River beginning 5000 years ago. The course is aimed at both science and non-science students alike. There are no prerequisites. Topics covered will include 1) Climate change in the Yellow River drainage basin since the Holocene, including a brief temperature and drought history since the Neolithic Age; 2) The impacts of deforestation and human reclamation on Yellow River and its significance to fluvial and sediment discharge; 3) Frequent river course shifts and their relationship to environmental degradation and human activities; 4) Fluvial and sediment budget and sedimentation in the lower reaches and offshore area; and 5) The socio-economic impacts of the historical river course shifts and their significance to regional sustainability development. Cross-listed as EASN 206, ENST 311 and ERSC 311.	Kelin Zhuang	Interdisciplinary
ENST	318	<b>Advanced Applications in GIS</b>	SINV	The course is intended as a continuation of the introductory course on Geographic Information Systems, 218, and will concentrate on more advanced discussions and techniques related to spatial analysis and GIS project design. The main focus of the course will be on using higher-level GIS methods to investigate and analyze spatial problems of varying complexity; however, the specific project and topical applications will vary depending on student interests. Students will be required to develop and complete an individual spatial analysis project that incorporates advanced GIS techniques. Cross-listed as ARCH 318, ENST 318 and ERSC 318.	Jim Ciarrocca	2

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ENST	330	<b>Environmental Policy</b>	<i>SINV</i>	This course examines the effect of environmental policies on environmental quality, human health and/or the use of natural resources at local, national and international levels. It considers the ways scientific knowledge, economic incentives and social values merge to determine how environmental problems and solutions are defined, how risks are assessed and how and why decisions are made. The course examines a range of tools, processes and patterns inherent in public policy responses and covers issues ranging from air and water pollution and toxic and solid waste management to energy use, climate change and biodiversity protection. A combination of lectures, case studies, laboratory exercises and field trips will be used.	Michael Beevers	2
ENST	406	<b>The Future of Conservation in a Changing World</b>	<i>SINV</i>	We appear to be entering the sixth major extinction of biodiversity in the history of life on earth. Unlike the previous five mass extinctions, this one is largely a result of human activity. The field of conservation biology has developed to face the challenge of protecting the world's biological diversity and to better understand human impacts on species, communities, and ecosystems. In recent decades, conservation views and priorities have been called into question as scientists document the broad-scale effects of climate change on ecosystems across the globe. We are faced with the question: how do we protect or restore ecosystems when the baseline environmental conditions like temperature and precipitation are changing? As ecosystems become increasingly human-dominated, what do we consider wild or pristine ecosystems and how do we prioritize conservation of natural resources? In this course, we will focus on the underlying science involved in conservation issues and discuss the various new perspectives for managing our natural resources. This discussion will include the science supporting different schools of thought as well as the ethical, political, and economic issues related to assigning value to ecosystems and the services they provide and conserving the natural world.	Kristin Strock	2
ERSC	141	<b>Planet Earth</b>	<i>SCON</i>	A study of plate tectonics with emphasis on ancient and modern geological processes associated with mountain building. The course builds knowledge through field and classroom studies of Appalachian geology, and by comparison of the Appalachians with active mountain belts in South America, Indonesia, and Asia. The course also develops a geologic understanding of the seismic and volcanic hazards associated with mountain building. The overall aim of the course is to illustrate the historical, predictive, and practical aspects of geologic principles and reasoning in scientific and societal contexts.	Pete Sak	3
ERSC	142	<b>Earth History</b>	<i>SCON</i>	A study of the origin and evolution of the Earth, continents, atmosphere, ocean, and life over 4.6 billion years of Earth history. Topics will include deep time; plate tectonics and mountain building; continental position, ocean circulation, and climate change; expansion of biodiversity from single cells to higher order plants and animals including the rise of humans; mass extinctions; the theory of evolution; and the influence of historic earth processes on the formation of mineral and energy resources. Labs and Field trips will test geological and paleontological hypotheses regarding the reconstruction and interpretation of ancient sedimentary environments and biomes in the local area. Three hours classroom and three hours laboratory a week. This course fulfills either the DIV III lab science or QR distribution requirement.	Marcus Key Jeff Niemitz	3
ERSC	202	<b>Energy Resources</b>	<i>SCON</i>	The study of the origin, geologic occurrence, and distribution of petroleum, natural gas, coal, and uranium. Discussions include the evaluation and exploitation, economics, law, and the environmental impact of these resources and their alternatives, including geothermal, wind, solar, tidal, and ocean thermal power. Cross-listed as ENST 202 and ERSC 202.	Marcus Key	3
ERSC	204	<b>Global Climate Change</b>	<i>SINV</i>	An overview of our present understanding of atmospheric processes and their interaction with the land, oceans and biosphere leading to an in-depth study of ancient climates and climate change in earth history. Topics include the tools used to decipher ancient climate change on various time scales, major climate events such as the ice ages, and the causes of climate change. Past and present knowledge will be used to explore the potential for future climate change and its socioeconomic and political implications. The laboratory component will use climate data and field experiences to interpret climate change over the past 3 billion years in the context of earth materials and plate tectonics.	Jeff Niemitz	3
ERSC	218	<b>Geographic Information Systems</b>	<i>SINV</i>	Geographic Information Systems (GIS) is a powerful technology for managing, analyzing, and visualizing spatial data and geographically-referenced information. It is used in a wide variety of fields including archaeology, agriculture, business, defense and intelligence, education, government, health care, natural resource management, public safety, transportation, and utility management. This course provides a fundamental foundation of theoretical and applied skills in GIS technology that will enable students to investigate and make reasoned decisions regarding spatial issues. Utilizing GIS software applications from Environmental Systems Research Institute (ESRI), students work on a progression of tasks and assignments focused on GIS data collection, manipulation, analysis, output and presentation. The course will culminate in a final, independent project in which the students design and prepare a GIS analysis application of their own choosing. Cross-listed as ARCH 218, ENST 218 and ERSC 218.	Jim Ciarrocca	3
ERSC	305	<b>Earth Materials</b>	<i>SCON</i>	This gives students a basic understanding of the tools and techniques used in modern science to identify and characterize solid earth materials at the macroscopic (hand samples), microscopic (polarized light), and sub-microscopic (X-ray diffraction, Scanning Electron Microscopy) levels. Emphasis in the first part of the course will be on minerals, while the second part of the course will introduce students to characterization techniques of other solid earth materials (soils and rocks) and their conditions of formation. This course is required for the Earth Science major, and will be useful to students interested in agricultural science, archeology, environmental science, forensic science, planetary science, and solid state chemistry and physics.	Ben Edwards	3

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ERSC	311	<b>Environmental Degradation of the Yellow River, China</b>	SCON	<p>Yellow River, central of the rise of Chinese civilization, is the most turbid river in the modern world; however, its water was clear 1000 years ago. What has happened to this river? This interdisciplinary introductory-level course focuses on the environmental degradation in the Yellow River beginning 5000 years ago. The course is aimed at both science and non-science students alike. There are no prerequisites. Topics covered will include 1) Climate change in the Yellow River drainage basin since the Holocene, including a brief temperature and drought history since the Neolithic Age;</p> <p>2) The impacts of deforestation and human reclamation on Yellow River and its significance to fluvial and sediment discharge;</p> <p>3) Frequent river course shifts and their relationship to environmental degradation and human activities;</p> <p>4) Fluvial and sediment budget and sedimentation in the lower reaches and offshore area; and 5) The socio-economic impacts of the historical river course shifts and their significance to regional sustainability development. Cross-listed as EASN 206, ENST 311 and ERSC 311.</p>	Kelin Zhuang	Interdisciplinary
ERSC	318	<b>Advanced Applications in GIS</b>	SINV	<p>The course is intended as a continuation of the introductory course on Geographic Information Systems, 218, and will concentrate on more advanced discussions and techniques related to spatial analysis and GIS project design. The main focus of the course will be on using higher-level GIS methods to investigate and analyze spatial problems of varying complexity; however, the specific project and topical applications will vary depending on student interests. Students will be required to develop and complete an individual spatial analysis project that incorporates advanced GIS techniques. Cross-listed as ARCH 318, ENST 318 and ERSC 318.</p>	Jim Ciarrocca	3
GERM	210	<b>Exploring German Cultures</b>	SCON	<p>In this course, students learn about key periods and topics of German-speaking cultures in their historical contexts. The course exposes students to various cultural forms such as music, literature, art, and patterns of daily life. It provides students with a basic level of understanding of German cultures and allows them to reflect on German cultures in English. As the country in which the concept of sustainability was first described in early 19th century forestry, Germany is today one of the places more advanced in sustainable developments. This course will take a look at both the history and the current situation.</p>	Antje Pfannkuchen	1
HIST	206	<b>American Environmental History</b>	SCON	<p>Examines the interaction between humans and the natural environment in the history of North America. Explores the problem of sustainable human uses of the North America environment from the pre-colonial period to the present. Also serves as an introduction to the subfield of environmental history, which integrates evidence from various scientific disciplines with traditional documentary and oral sources. Topics include: American Indian uses of the environment, colonial frontiers, agricultural change, industrialization, urbanization, westward expansion, the Progressive-Era conservation movement, changes in lifestyle and consumption including their increasingly global impact, shifts in environmental policy, and the rise of the post-World War II environmental movement. Cross-listed as ENST 206 and HIST 206.</p>	Emily Pawley	2
HIST	377	<b>Consumerism, Nationalism and Gender</b>	SCON	<p>This reading seminar examines the development of consumerism and nationalism in Europe and America beginning in the late 18th century and continuing on into the post-WWII era, from American Revolutionary boycotts to French fast food establishments. We will look for overlaps or polarities between the movements and the way gender interacted with both of them. Students may be surprised at the gendered aspects of both movements. We will consider, for example, the historical development of the image of women loving to shop, and we will study propaganda from the two world wars with men in uniform and women on the "home front." Our readings will include both promoters and critics of each movement. Cross-listed as HIST 337 and WGST 377.</p>	Regina Sweeney	2
INBM	100	<b>Fundamentals of Business</b>	SCON	<p>This course features an introductory focus on a wide range of business subjects including the following: business in a global environment; forms of business ownership including small businesses, partnerships, multinational and domestic corporations, joint ventures, and franchises; management decision making; ethics; marketing; accounting; management information systems; human resources; finance; business law; taxation; uses of the internet in business; and how all of the above are integrated into running a successful business. You will learn how a company gets ideas, develops products, raises money, makes its products, sells them and accounts for the money earned and spent. This course will not fulfill a distribution requirement.</p>	Won Yong Kim Helen Takacs	Interdisciplinary
INBM	200	<b>Global Economy</b>	SCON	<p>Concentration upon strategies pursued by nation states in their interaction with international business enterprises and nongovernmental organizations. Students will work from an interdisciplinary perspective, with case studies of episodes in U.S. economic history and of selected countries from Africa, Asia, Europe and Latin America. To facilitate their analysis, students will study concepts drawn from trade theory, commercial and industrial policy, balance of payments accounting, exchange rate determination, and open-economy macroeconomics. As such, the course will draw heavily from the introductory economics courses. This approach will help develop an appreciation for the complex environment in which both political leaders and corporate managers operate. Cross-listed as INBM 200 and INST 200.</p>	Michael Fratantuono	Interdisciplinary
INBM	240	<b>Marketing in the Global Context</b>	SCON	<p>The primary objective of this course is to identify how companies identify and satisfy their customers' needs. Not only are the "4p's of marketing" covered (product, price, promotional programs like advertising and public relations, and place or distribution), but working with a specific semester-long case, you will learn how to manage an integrated marketing program. We will also examine other important aspects of marketing: market research, new product development, consumer behavior, ethics, competitive analysis and strategic planning, and marketing internationally and on the Internet. Field trips and videos are used to reinforce the ideas presented in the classroom.</p>	Michael Poulton	Interdisciplinary
INBM	300	<b>Best Practices in Sustainability</b>	SINV	<p>Increasingly, businesses are adopting a triple bottom line approach in which environmental and social outcomes are emphasized along with financial outcomes. Perhaps most significant is the shift from seeing environmental and social efforts as increasing business costs to viewing them as opportunities for increased efficiency and/or competitive advantage. This course will include readings to understand the theory, history, and scope of business sustainability, and case studies to consider how firms are incorporating sustainability into their strategies and operations. We will also focus on best practices by learning what constitutes a best practice, how to identify best practices, and how to apply best practices from one organization to another.</p>	Helen Takacs	Interdisciplinary

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INBM	300	<b>Education for Entrepreneurs</b>	SCON	The course presents a strategic framework with an emphasis on legal considerations for the establishment and management of start-ups and emerging growth companies. The entrepreneurial spirit is evident in all who envision opportunity where others see only challenges, develop innovative approaches for these opportunities, and marshal sufficient resources to successfully act on the opportunity. Topics in the course include formation considerations (legal, financial and tax), employment agreements, venture capital, private equity financing, business plan models, intellectual property, going public and going global. The course also includes a practicum in which students, working in teams, consult for sustainable entrepreneurs in our community and provide marketing, finance, and/or strategy support.	Anat Beck	Interdisciplinary
INST	200	<b>Global Economy</b>	SCON	Concentration upon strategies pursued by nation states in their interaction with international business enterprises and nongovernmental organizations. Students will work from an interdisciplinary perspective, with case studies of episodes in U.S. economic history and of selected countries from Africa, Asia, Europe and Latin America. To facilitate their analysis, students will study concepts drawn from trade theory, commercial and industrial policy, balance of payments accounting, exchange rate determination, and open-economy macroeconomics. As such, the course will draw heavily from the introductory economics courses. This approach will help develop an appreciation for the complex environment in which both political leaders and corporate managers operate. Cross-listed as INBM 200 and INST 200.	Michael Fratantuono	Interdisciplinary
ITAL	323	<b>Italian Food and Wine</b>	SCON	In this course, students will be initiated into the discipline of Food Studies. We will examine the role played by food in the shaping of Italian culture from the Risorgimento to Contemporary Italy. We will consider which ingredients are at the heart of the Italian diet. We will observe how they were described, produced, prepared, and consumed in different parts of the Italian Peninsula and the role cookery, cookbooks, and wine played in the process of unifying Italy and giving an identity to Italian immigrants in America. Some of the arguments covered will be the emergence of a national cuisine with Pellegrino Artusi, the consequences of the development of an agro-industrial complex in a predominantly agrarian society, the manipulation of food/drink imagery by early publicists, the political value assigned to food and wine by the Futurist movement and by the Fascist ideology. The last weeks of the course will focus on the new perspectives and choices offered by the Slow Food Movement. Students will learn how to use the research tools of the discipline. They will be trained to expand their analytical skills, to ask questions pertinent to the topic at hand, and to develop argumentative and rhetorical strategies, both orally and in writing.	Sylvie Davidson	1
PORT	380	<b>Afro-Brazilian Culture</b>	SCON	This course explores elements of Afro-Brazilian culture in multi-racial Brazil and how such elements impact and often define Brazilian society and culture as a whole. The contents are organized around topics that aim at showing the relationship between culture and politics and the intricate web woven in the interplay between Africa, Brazil and the world and the multifarious processes of hybridization.	Ramayana Lira	Interdisciplinary
POSC	120	<b>American Government</b>	SCON	A basic introductory course in American federal government which emphasizes its structure and operation. Special attention is given to the executive, legislative, and judicial processes.	Vanessa Tyson	2
POSC	202	<b>Recent Political Thought</b>	SCON	An introduction to the political thought of the 20th century focusing on the works of Rawls, Nozick, Okin, Walzer, and others.	Toby Reiner	2
POSC	290	<b>Marginalization &amp; Representation</b>	SCON	This course explores the political representation of groups that have historically been marginalized in American society and excluded from the democratic process either through statute or through common practices. In particular, issues of racism, sexism, classism, and homophobia will be addressed. Cross-listed as AFST 220 and POSC 290.	Vanessa Tyson	2
POSC	290	<b>Asian Urban Ecology</b>	SINV	Asian cities are among the most economically productive in the world, and also number some of the most polluted and environmentally challenged urban centers on the planet. Further complicating this picture is the fact that many Asian cities are also on the cutting edge of policies associated with "ecological modernization," the effort to balance and manage competing economic and environmental interests and values. This course will examine a range of Asian cities, including, for example, Beijing, Singapore, Tokyo, Hong Kong, Shanghai and Seoul, and a range of issues like resource management, urban sprawl and congestion, environmental protection, green space and urban design, biodiversity and environmental justice with a view to better understanding the evolving interdependence among political, economic, social and natural systems in urban Asia. Cross-listed as EASN 206 and POSC 290.	David Strand	Interdisciplinary
RELG	110	<b>Religion and Modern Culture</b>	SCON	Drawing upon popular examples from film, drama, and narrative, as well as critical essays, the course explores both the religious dimensions of modern culture myth, sacred space and time, nature spirituality and the cultural contexts of contemporary theologies gender, race, economics.	Mara Donaldson	1
SCIE	301	<b>Sustainability Science</b>	SINV	This course explores the role of science in environmental sustainability. Particular emphasis will be placed on population growth, biodiversity, renewable vs. nonrenewable natural resources (e.g., water, soil, energy, minerals), and temporal limits of nonrenewable natural resources (e.g., peak oil). Intercultural differences in perspective on sustainability issues will be examined between the UK, EU, and US.	Grant Braught	3
SPAN	380	<b>Revolutionaries in Latin America</b>	SCON	This class examines the representation of revolutionaries and guerrillas in terms of race, socioeconomic status, gender, and sexuality. The class focuses on the Mexican, Cuban, and Sandinista Revolutions, as well as on some revolutionary student movements in Latin America. Students will read a variety of texts, such as novels, testimonials, songs, films, and theoretical and historical articles.	Carolina Castellanos	1

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SUST	490	<b>Baird Honors Colloquium</b>	<i>SINV</i>	Students accepted into the Baird Sustainability Fellows program will explore questions about sustainability from a variety of disciplinary and interdisciplinary perspectives and build leadership and professional skills as agents of change. The specific assignments and content of the colloquium will be decided in concert with the admitted students. These may include conversations with invited scholars and practitioners, discussions of selected readings and public lectures, individual or collaborative projects, written essays, presentations of student research and service projects, student led class sessions, workshops, and field trips. Each student will create an electronic portfolio to document attainment of sustainability learning goals. The colloquium is a half-credit course that will meet for 90 minutes each week. Grading for the course will be credit/no credit.	Neil Leary	Interdisciplinary
WGST	202	<b>Transnational Feminisms</b>	<i>SCON</i>	This course is an interdisciplinary and intersectional examination of the effects of nation-building, border enforcement, the prison industrial complex, global capitalism, reproductive injustice, migration/dislocation and militarism on people's lives. The course centralizes the concepts of Intersectionality, Nation & Nation-Building, Empire-Building & Colonialism, Global Capitalism & Neoliberalism, Militarism, and Transnational Feminism. We pay particular attention to how these structures and ideologies affect gendered peoples and how local, as well as global, feminist activist strategies can help or hinder material conditions. Some questions posed by the material include, why do queer folks threaten the nation?, what is pinkwashing and homonationalism?, can you ever travel "just for fun"?, what does it mean to work in the global economy?, what is global surrogacy?, and what are some activist strategies and ethics associated with transnational feminism?	Jennifer Musial	Interdisciplinary
WGST	377	<b>Consumerism, Nationalism and Gender</b>	<i>SCON</i>	This reading seminar examines the development of consumerism and nationalism in Europe and America beginning in the late 18th century and continuing on into the post-WWII era, from American Revolutionary boycotts to French fast food establishments. We will look for overlaps or polarities between the movements and the way gender interacted with both of them. Students may be surprised at the gendered aspects of both movements. We will consider, for example, the historical development of the image of women loving to shop, and we will study propaganda from the two world wars with men in uniform and women on the "home front." Our readings will include both promoters and critics of each movement. Cross-listed as HIST 337 and WGST 377.	Regina Sweeney	Interdisciplinary