Dickinson College | Sustainability Courses | Spring 2015

Listed here are Sustainability designated courses offered Spring 2015 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 2015, 24 unique Sustainability Connections courses and 21 unique Sustainability Investigation courses are offered by 25 different departments. Many of these courses offer multiple sections. Total sections: Sustainability Connections = 26 and Sustainability Investigations = 29.

DEPT	COURSE #	TITLE	DESIGNATION	DESCRIPTION	INSTRUCTOR
AFST	220	**Sex and the City: Gender, Politics, and Culture in 20th Century Urban America**	SCON	In this class, we will consider the ways in which gender and sexuality have been created, contested, defined, and performed in the urban environment. We will examine several United States cities to illuminate how gender has been inscribed on the urban environment and the ways in which "the gendered city" reflects "complex intersections of race, class, and sexual orientation." The course might include a day trip to Philadelphia; Washington, DC; or New York City. Cross-listed as HIST 211.	Moten, Crystal
AFST	320	**Ecological History of Africa**	SCON	This course provides an introduction to the ecological history of Africa. We will focus in some detail on demography, the domestication of crops and animals, climate, the spread of New World crops (maize, cassava, cocoa), and disease environments from the earliest times to the present. Central to our study will be the idea that Africa's landscapes are the product of human action. Therefore, we will examine case studies of how people have interacted with their environments. African ecology has long been affected indirectly by decisions made at a global scale. Thus we will explore Africa's engagement with imperialism and colonization and the global economy in the twentieth century. The course ends with an examination of contemporary tensions between conservation and economic development. Cross-listed as HIST 373.	Ball, Jeremy
ANTH	222	**Contemporary Peoples of Latin America**	SCON	An examination of the life of present-day primitive and peasant peoples of Middle and South America. These societies are seen holistically, and as they relate to urban and state centers. Cross-listed as LALC 222.	Enge, Kjell
ANTH	241	**Measurement and Quantification in the Social Sciences**	SCON	This course focuses on quantitative data analysis. Students learn how to design, code, and analyze interviews and surveys. Selected databases and statistical programs are used to analyze current social issues and compare samples.	Enge, Kjell
ANTH	245	**Climate Change, Rivers, and Chinese Society**	SCON	This course is an interdisciplinary, globally integrated course that begins with a two-week field trip to North China in January 2015. Sites visited on the field trip introduce students to the geography of the Yellow River basin and sites of human habitation long the river's course, as well as some sites that help students understand China's history more broadly. During the field trip portion of the course, students will create blogs and podcasts to post on a website based on their experiences in China. The course integrates climate change in East Asia and its geography with the history of populations that are identified with the Chinese state. The course focuses equally on 1) the impact of long term changes in the climate and land forms of the region, especially its large river systems, and 2) the consequences of human activity for environmental change as populations exploit natural environments, especially rivers, for livelihood, state revenues, and the market. Although the course is broadly historical, it includes case studies to illustrate in concrete detail critical aspects of longer-term trends, such as course shifts in the Yellow River, the role of irrigation in the formation of Chinese civilization, deforestation in North China, the Three Gorges Dam project, agricultural sustainability, and other important topics. Cross-listed as ERSC 311, ENST 311 and EASN 206.	Hill, Ann, Zhuang, Kelin
ANTH	260	**Environmental Archaeology**	SINV	The study of the human past requires knowledge of the biological and geophysical systems in which cultures developed and changed. This course explores past environments and the methods and evidence used to reconstruct them. Emphasis is on the integration of geological, botanical, zoological, and bioarchaeological data used to reconstruct Quaternary climates and environments.Cross-listed as ENST 211 and ARCH 260.	Bruno, Maria
ANTH	290	**Archaeological Methods**	SINV	This course focuses on archaeological field and laboratory methods through readings, lectures, and hands-on experiences and the data these practices generate. It will cover the essential field methods employed in archaeological survey (pedestrian, aerial, and geophysical) and excavation. This will include the fundamentals of documentation including note-taking, drawing, photography, and map-making. It will also introduce how archaeologists organize and analyze the large quantities and wide range of data recovered in these processes with particular attention to the use of computer databases, especially Geographic Information Systems (GIS). It will provide a general overview of different types of laboratory analysis including lithics, ceramics, metals, plant and animal remains, and discuss the available dating methods. Students will have the opportunity to practice many of the field and lab methods in the Simulated Excavation Field (SEF), and, when available, archaeological sites in the Cumberland Valley. Through these experiences and interactions with a range of archaeological datasets, students will learn how the archaeological record is formed and what its patterns can teach us about ancient human livelihoods. Finally, students will learn to synthesize and present the results of field and laboratory research in reports, a critical genre of writing in the discipline. Cross-listed as ARCH 290.	Bruno, Maria
ARCH	218	**Geographic Information Systems**	SINV	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 ERSC 218 and ENST 218.	Kennedy, Robyn
ARCH	260	**Environmental Archaeology**	SINV	The study of the human past requires knowledge of the biological and geophysical systems in which cultures developed and changed. This course explores past environments and the methods and evidence used to reconstruct them. Emphasis is on the integration of geological, botanical, zoological, and bioarchaeological data used to reconstruct Quaternary climates and environments. Cross-listed as ENST 311 and ANTH 260.	Bruno, Maria

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BIOL	128	**Field Natural History**	SINV	This course will explore local natural history of the Cumberland Valley around Carlisle, Pennsylvania. Students will learn the various groups of prominent organism, both plant and animal, that comprise the natural environment of Cumberland and surrounding counties. Students will become familiar with dichotomous keys to local flora and fauna and complete field investigations of local habitat areas. There are several evening field trips required during the course as well as at least one weekend day trip.	Wingert, Gene
BIOL	129	**Changing Ocean Ecosystem W/Lab**	SINV	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.	Potthoff, Michael Arnold, Thomas
BIOL	332	**Natural History of Vertebrates**	SCON	An exploration into the lifestyles of vertebrates heavily focused on field biology. Natural history is strongly dependent on descriptive anatomy and systematics and therefore this course will cover the evolutionary relationships among vertebrates highlighting unique features that facilitated the success of the major groups. In field labs, students will develop observational skills such as how to identify a bird by its song, a frog by its call, a mammal by the color of its pelage, and a snake by its shed skin. Indoor labs will focus on identifying species from preserved specimens as well as providing students with the skills necessary to preserve vertebrates for future study. Preservation methods could include preparing museum-quality mammal and bird skins, formalin fixation of fish, and skeletal preparations. Cross-listed as ENST 332.	Boback, Scott
BIOL	401	**March to Extinction: The Impact of Climate Change on Biodiversity**	SINV	In this course, students and faculty will examine ecological and evolutionary principles as they pertain to biological conservation, historical patterns of natural extinction, and the current status and nature of the Holocene/Anthropocene extinction. We will focus on the nature of the evidence concerning the impact of recent climate change on biodiversity, including the contribution of citizen science. The impact on human communities and livelihoods will be discussed within the larger context of why it matters. Proposed designs for enhancing mitigation and adaptation strategies and for protecting and restoring ecosystem resilience will be studied. In addition to reading the literature and hosting guest speakers, students will each choose a case study to explore in depth through literature and primary research. Students will be responsible for sharing the results of their research in extended presentations which will include their own customized reading assignments and enhancement exercises. This course may count as a theme course in both the Environmental Science and Environmental Studies majors. Cross-listed as ENST 311.	Wilderman, Candie
BIOL	401	**Ornithology**	SCON	The classroom component of 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 ENST 310.	Van Fleet, Pamela
EASN	206	**Climate Change, Rivers, and Chinese Society**	SCON	This course is an interdisciplinary, globally integrated course that begins with a two-week field trip to North China in January 2015. Sites visited on the field trip introduce students to the geography of the Yellow River basin and sites of human habitation long the river's course, as well as some sites that help students understand China's history more broadly. During the field trip portion of the course, students will create blogs and podcasts to post on a website based on their experiences in China. The course integrates climate change in East Asia and its geography with the history of populations that are identified with the Chinese state. The course focuses equally on 1) the impact of long term changes in the climate and land forms of the region, especially its large river systems, and 2) the consequences of human activity for environmental change as populations exploit natural environments, especially rivers, for livelihood, state revenues, and the market. Although the course is broadly historical, it includes case studies to illustrate in concrete detail critical aspects of longer-term trends, such as course shifts in the Yellow River, the role of irrigation in the formation of Chinese civilization, deforestation in North China, the Three Gorges Dam project, agricultural sustainability, and other important topics. Cross-listed as ANTH 245, ERSC 311 and ENST 311.	Hill, Ann, Zhuang, Kelin
EASN	306	**The Politics of Environmental Protection in Asia**	SINV	This seminar takes a close look at the political, social, and legal issues that affect environmental protection in Asia. Focusing attention on China, Taiwan, Japan, and India, and by drawing upon scholarly literature in political science, sociology, law, and history, the course aims to provide students with a multidisciplinary understanding of the myriad factors which shape the content of environmental legislation and policies and how these are implemented in society. Does China's authoritarian system give environmental law more "bite"? What roles do NGO play in Asia? Does Confucianism or Hinduism make people more or less inclined to protect the environment? How do Asians deal with the impact of rapid economic growth? In short, we will try to understand the complex interaction between political, legal, and social dimensions of environmental protection in a region that is home to half of the world's population and three of the world's current and future economic powerhouses. Cross-listed as POSC 390 and ENST 311.	Diamant, Neil
ECON	222	**Environmental Economics**	SCON	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.	Tynan, Nicola

ECON	314	**Limits to Growth and the Macroeconomics of Climate Change**	SINV	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.	Cogliano, Jonathan
ECON	496	**Urban Issues in Carlisle PA**	SCON	This course will cover a series of urban economic issues with an emphasis on local problems and local government policy. The main focus of this course will be a community research project we will conduct in partnership with the Borough of Carlisle. The project will include a survey of Carlisle citizens regarding their views of government services and other local issues. We will augment our findings by collecting local data and learning about local policy. The results of our study will be presented in a public forum such as a Borough Council meeting or other public forum. This combination of urban economics, local politics and policy, and contact with the Carlisle community should provide a useful and memorable capstone experience for senior economics majors.	Bellinger, William
ENGL	101	**Literature and Food**	SCON	In recent years, food has become a major topic of scholarly and creative inquiry. Its popularity has accompanied the rise of locavore eating, efforts to reform Big Food, and the vast market for cookbooks, cooking shows, and food memoirs. But literary characters have, for the most part, always had to eat and drink, and good literature knows no trends. This course will focus on the close reading of literary fiction, creative nonfiction, and poetry with a focus on food. Among the likely authors: Margaret Atwood, Laurie Colwin, Isak Dinesen, M.F.K. Fisher, Robert Hass, Seamus Heaney, Jhumpa Lahiri, Yiyun Li, Upton Sinclair, Tracy K. Smith, Kevin Young. Students will write both analytical essays and creative responses.	Su, Adrienne
ENGL	212	**Writing About Nature**	SINV	This course is designed to improve your skills as a writer of expository prose by emphasizing the genre of nature writing. We will concentrate on a variety of writing problems and techniques, emphasizing specific skills necessary to a wide range of writing tasks: description, summary, narration, argumentation, analysis, and interpretation. In all cases, our focus will be on the natural world and human connections to that world. Discussions of essay reading assignments will be supplemented by workshop sessions and individual tutorials. Students will have the opportunity to critique work by their classmates and to compare their own essays to works by nature writers of the past two centuries. The course aims to concentrate your attention on the precise stylistic details that lead to effective writing.	Nichols, B Ashton
ENST	130	**Introduction to Environmental Science: Energy, Waste, and Human Health**	SINV	An integrated, interdisciplinary study of environmental disruption and management where the application of natural science principles informs an 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.	Beevers, Michael
ENST	132	**Foundations of Environmental Science**	SINV	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.	Pedersen, Brian
ENST	218	**Geographic Information Systems**	SINV	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 ERSC 218.	Kennedy, Robyn
ENST	310	**Ornithology**	SCON	The classroom component of 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.	Van Fleet, Pamela
ENST	311	**Climate Change, Rivers, and Chinese Society**	SCON	This course is an interdisciplinary, globally integrated course that begins with a two-week field trip to North China in January 2015. Sites visited on the field trip introduce students to the geography of the Yellow River basin and sites of human habitation long the river's course, as well as some sites that help students understand China's history more broadly. During the field trip portion of the course, students will create blogs and podcasts to post on a website based on their experiences in China. The course integrates climate change in East Asia and its geography with the history of populations that are identified with the Chinese state. The course focuses equally on 1) the impact of long term changes in the climate and land forms of the region, especially its large river systems, and 2) the consequences of human activity for environmental change as populations exploit natural environments, especially rivers, for livelihood, state revenues, and the market. Although the course is broadly historical, it includes case studies to illustrate in concrete detail critical aspects of longer-term trends, such as course shifts in the Yellow River, the role of irrigation in the formation of Chinese civilization, deforestation in North China, the Three Gorges Dam project, agricultural sustainability, and other important topics. Cross-listed as ANTH 245, ERSC 311, and EASN 206.	Hill, Ann, Zhuang, Kelin

ENST	311	**Energy Justice: People, Politics, and the Environment**	SCON	This class surveys the energy landscape of our carbon-centered civilization. From the local to the global, we question the social, political, and environmental implications of non-renewable energy resource extraction, transportation, and use. We will examine how energy associated risks and benefits are managed across people and places. The contemporary social and political landscape for global energy demand and extraction provides the foundation for the class. Analysis of individual and university-wide energy consumption will allow for localized reflection on course themes. Drawing from examples in India and the United States, we will explore development and justice considerations associated with natural resource extraction for energy purposes. A review of the social, economic, and health impacts for people directly impacted by energy procurement and transport will provide further lenses to explore justice concerns. Political and scientific efforts to improve the sustainability of energy extraction will also be analyzed. The class is structured to be accessible to students across disciplines. Cross-listed as INST 290.	Bedi, Heather
ENST	311	**Environmental and Social Justice**	SCON	This course reviews social inequities in relation to environmental issues. We examine the social construction of notions of equity and justice, and apply this learning to understand how societies frame environmental risk. Drawing from domestic and international case studies, we will explore how marginalized communities disproportionately experience environmental externalities. The social and environmental consequences of uneven development across place exemplify justice and capitalism contradictions. Examples of community agency to re-appropriate or reframe their environment will allow us to understand collective action to social and environmental injustices. Upon completion, students should have a deep understanding of efforts to ensure equitable distribution of environmental benefits and risks. Cross-listed as ENST 311 and SOCI 230.	Bedi, Heather
ENST	311	**Environmental Archaeology**	SINV	The study of the human past requires knowledge of the biological and geophysical systems in which cultures developed and changed. This course explores past environments and the methods and evidence used to reconstruct them. Emphasis is on the integration of geological, botanical, zoological, and bioarchaeological data used to reconstruct Quaternary climates and environments. Cross-listed as ANTH 260 and ARCH 260.	Bruno, Maria
ENST	311	**March to Extinction: The Impact of Climate Change on Biodiversity**	SINV	In this course, students and faculty will examine ecological and evolutionary principles as they pertain to biological conservation, historical patterns of natural extinction, and the current status and nature of the Holocene/Anthropocene extinction. We will focus on the nature of the evidence concerning the impact of recent climate change on biodiversity, including the contribution of citizen science. The impact on human communities and livelihoods will be discussed within the larger context of why it matters. Proposed designs for enhancing mitigation and adaptation strategies and for protecting and restoring ecosystem resilience will be studied. In addition to reading the literature and hosting guest speakers, students will each choose a case study to explore in depth through literature and primary research. Students will be responsible for sharing the results of their research in extended presentations which will include their own customized reading assignments and enhancement exercises. This course may count as a theme course in both the Environmental Science and Environmental Studies majors. Cross-listed as BIOL 401.	Wilderman, Candie
ENST	311	**Spatial Literacy Across the Curriculum**	SINV	Understanding how to think about problems and concepts in a spatial context is a fundamental skill that is not well taught in the current Dickinson College curriculum. Alternatively referred to as “Spatial Literacy” or “Spatial Reasoning”, this type of thinking generally focuses on understanding the importance of geographic space and the relationships formed by this space. Spatial literacy, like writing and quantitative analysis, is not a stand-alone subject, but rather it is a way of thinking that is applicable to many fields of studies, and is becoming increasingly important as a valuable competency for liberal arts students throughout all divisions. This course will examine the importance of geographic space as a learning construct and explore the value of spatial literacy for problem solving, creative expression, and communication across the humanities, social science and scientific disciplines. In doing so, students will have the opportunity to consider topics within their specific areas of study, and to discover how the application of spatial thinking can enable and facilitate the problem solving process across the curriculum. Students will be introduced to an assortment of easy-to-use mapping tools that include both quantitative and qualitative techniques, and will learn how to use these tools to investigate issues and questions from a spatial perspective, incorporate spatial analysis techniques into their problem solving methodologies, and to effectively visualize their data in ways that promote a more comprehensive understanding of the problem statement. Cross-listed as PMGT 290 and LAWP 290.	Ciarrocca, James
ENST	311	**Sustainability: Social Justice and Human Rights**	SINV	History "is a crab scuttling sideways, a drip of soft water wearing away stone, an earthquake breaking centuries of tension." (Solnit, Rebecca, Hope in the Dark, 2004). This course will examine the importance of the environmental movement and broader definitions of sustainability. We will explore examples of direct action, of serendipitous change, and of world-changing events that have moved us more clearly toward an understanding of "our" shared future on this planet. We will survey the issues connected to sustainable systems and will focus more specifically on issues related to food, water and energy. Through readings, film, and experiential activities the course will challenge us to analyze the impact of various actors and assess our own responsibility. Cross-listed as SOCI 230.	Bylander, Joyce
ENST	311	**The Politics of Environmental Protection in Asia**	SINV	This seminar takes a close look at the political, social, and legal issues that affect environmental protection in Asia. Focusing attention on China, Taiwan, Japan, and India, and by drawing upon scholarly literature in political science, sociology, law, and history, the course aims to provide students with a multidisciplinary understanding of the myriad factors which shape the content of environmental legislation and policies and how these are implemented in society. Does China's authoritarian system give environmental law more "bite"? What roles do NGO play in Asia? Does Confucianism or Hinduism make people more or less inclined to protect the environment? How do Asians deal with the impact of rapid economic growth? In short, we will try to understand the complex interaction between political, legal, and social dimensions of environmental protection in a region that is home to half of the world's population and three of the world's current and future economic powerhouses. Cross-listed as EASN 306 and POSC 390.	Diamant, Neil
ENST	330	**Environmental Policy**	SINV	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, and field trips will be used.	Howard, Gregory
ENST	332	**Natural History of Vertebrates**	SCON	An exploration into the lifestyles of vertebrates heavily focused on field biology. Natural history is strongly dependent on descriptive anatomy and systematics and therefore this course will cover the evolutionary relationships among vertebrates highlighting unique features that facilitated the success of the major groups. In field labs, students will develop observational skills such as how to identify a bird by its song, a frog by its call, a mammal by the color of its pelage, and a snake by its shed skin. Indoor labs will focus on identifying species from preserved specimens as well as providing students with the skills necessary to preserve vertebrates for future study. Preservation methods could include preparing museum-quality mammal and bird skins, formalin fixation of fish, and skeletal preparations. Cross-listed as BIOL 332.	Boback, Scott

ENST	335	**Analysis and Management of the Aquatic Environment**	SINV	An interdisciplinary study of the aquatic environment, with a focus on the groundwater and surface waters of the Chesapeake Bay drainage basin. This course provides a scientific introduction to the dynamics of rivers, lakes, wetlands, and estuarine systems as well as an appreciation of the complexity of the political and social issues involved in the sustainable use of these aquatic resources. Students conduct an original, cooperative, field-based research project on a local aquatic system that will involve extensive use of analytical laboratory and field equipment. Extended field trips to sample freshwater and estuarine systems and to observe existing resource management practices are conducted.	Strock, Kristin
ENST	406	**The Global Supply Chain**	SINV	This senior seminar will explore the complexities of the interlocked set of actors and policies that together convey products and services around the world. We will examine the science of globalized products from phones to clothing, and their impacts on human health and the environment; relevant policies on the local, national, and international scale; the role of diverse actors ranging from international corporations to individual consumers; life cycle analysis and other sustainability tools used to assess the global impacts of this trade; and the environmental justice aspects of global trade at home and abroad. As a capstone in the Environmental Studies and Science majors, this course will use case studies of global trade and its impacts to highlight the complexity of modern environmental concerns and to develop critical skills for understanding and addressing these difficult problems. Interested nonmajors from other departments (with adequate environmental preparation) are welcome.	Howard, Gregory
ERSC	141	**Planet Earth**	SINV	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.	Edwards, Benjamin
ERSC	142	**Earth History**	SINV	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.	Niemitz, Jeffrey
ERSC	218	**Geographic Information Systems**	SINV	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 and ENST 218.	Kennedy, Robyn
ERSC	307	**Paleontology**	SCON	A systematic study of the invertebrate and vertebrate fossil groups, plants, and their evolution and relationships to living forms.	Key, Marcus
ERSC	311	**Climate Change, Rivers, and Chinese Society**	SCON	This course is an interdisciplinary, globally integrated course that begins with a two-week field trip to North China in January 2015. Sites visited on the field trip introduce students to the geography of the Yellow River basin and sites of human habitation long the river's course, as well as some sites that help students understand China's history more broadly. During the field trip portion of the course, students will create blogs and podcasts to post on a website based on their experiences in China. The course integrates climate change in East Asia and its geography with the history of populations that are identified with the Chinese state. The course focuses equally on 1) the impact of long term changes in the climate and land forms of the region, especially its large river systems, and 2) the consequences of human activity for environmental change as populations exploit natural environments, especially rivers, for livelihood, state revenues, and the market. Although the course is broadly historical, it includes case studies to illustrate in concrete detail critical aspects of longer-term trends, such as course shifts in the Yellow River, the role of irrigation in the formation of Chinese civilization, deforestation in North China, the Three Gorges Dam project, agricultural sustainability, and other important topics. Cross-listed as ANTH 245, ENST 311, EASN 206.	Hill, Ann, Zhuang, Kelin
ERSC	311	**Physical Climate Modeling**	SCON	In-depth studies in special geological topics to be offered on the basis of need and demand. Recent topics have included Geology of PA, Origin of Life, Quaternary Geology, and Instrumental Analysis in Geology. Cross-listed as PHYS 361.	Reed, David
GRMN	210	**Exploring German Cultures**	SCON	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.	McGaughey, Sarah
GRMN	400	**Mountains in the German Cultural Imagination**	SCON	In this course, we will examine how mountains are transformed from places of terror in the pre-modern period to places of pleasure and leisure today. We will consider how the presence of mountains informs German, Austria and Swiss self-identity and will talk about the ecological, economic and touristic challenges facing mountains in general and the Alps in particular. Topics will also include: how the Nazis appropriate the mountains for their propaganda purposes, how and why a Himalayan mountain has come to be known as "Der Schicksalberg der Deutschen," and the discovery of the iceman "Ötzi" in the Alps. We will look not only at non-fiction texts, but the mountains in fiction, film, music and visual art, as well.	Haque, Kamaal
HIST	131	**Modern Latin American History since 1800**	SCON	Introduction to Latin American history since independence and the consolidation of national states to the recent past. Students explore social, economic, and political developments from a regional perspective as well as specific national examples.Cross-listed as LALC 231.	Borges, Marcelo
HIST	211	**Sex and the City: Gender, Politics, and Culture in 20th Century Urban America**	SCON	In this class, we will consider the ways in which gender and sexuality have been created, contested, defined, and performed in the urban environment. We will examine several United States cities to illuminate how gender has been inscribed on the urban environment and the ways in which "the gendered city" reflects "complex intersections of race, class, and sexual orientation." The course might include a day trip to Philadelphia; Washington, DC; or New York City. Cross-listed as AFST 220.	Moten, Crystal
HIST	373	**Ecological History of Africa**	SCON	This course provides an introduction to the ecological history of Africa. We will focus in some detail on demography, the domestication of crops and animals, climate, the spread of New World crops (maize, cassava, cocoa), and disease environments from the earliest times to the present. Central to our study will be the idea that Africa's landscapes are the product of human action. Therefore, we will examine case studies of how people have interacted with their environments. African ecology has long been affected indirectly by decisions made at a global scale. Thus we will explore Africa's engagement with imperialism and colonization and the global economy in the twentieth century. The course ends with an examination of contemporary tensions between conservation and economic development. Cross-listed as AFST 320.	Ball, Jeremy

INBM	100	**Fundamentals of Business**	SCON	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.	Takacs, C Helen
INBM	240	**Marketing in a Global Context**	SCON	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.	Poulton, Michael
INBM	300	**Business & Climate Change**	SCON	Our climate has changed dramatically since manufacturing activity powered by coal increased rapidly during the industrial revolution. Where are we now? The IPCC report, "Climate Change 2014: Impacts, Adaptation, and Vulnerability" assesses the risks and opportunities associated with climate change. We will study these risks and opportunities in the context of business activity and strategy. Further, we will explore the innovative products and services that some companies are developing to simultaneously grow their business and mitigate climate change forces.	Takacs, C Helen
INBM	300	**Comparative Business Ethics**	SCON	A course for IB&M majors dealing with the ethical interface of business and its international stakeholders in a variety of cultural environments. The course will focus on the contemporary realities of business people who must work in culturally diverse arenas when resolving personal and social ethical questions. As future employees and managers, students must be aware of the possible results of their actions and understand the sometimes fine ethical balance needed in reconciling the needs of the enterprise, the demands of foreign business practice, and their own principles. The course will be conducted primarily through case work as well as discussion and mock "courts of public opinion."	Poulton, Michael
INST	277	**International Politics of the Middle East**	SCON	This course examines key factors and events in the formation of the modern Middle East state system and evolving patterns of conflict and cooperation in the region. Students will apply a range of analytical approaches to issues such as the conflicts between Arabs and Israelis, Iraq's wars since 1980, and the changing place of the region in global politics and economics. Cross-listed as POSC 277 and MEST 266.	Webb, Edward
INST	290	**Energy Justice: People, Politics, and the Environment**	SCON	This class surveys the energy landscape of our carbon-centered civilization. From the local to the global, we question the social, political, and environmental implications of non-renewable energy resource extraction, transportation, and use. We will examine how energy associated risks and benefits are managed across people and places. The contemporary social and political landscape for global energy demand and extraction provides the foundation for the class. Analysis of individual and university-wide energy consumption will allow for localized reflection on course themes. Drawing from examples in India and the United States, we will explore development and justice considerations associated with natural resource extraction for energy purposes. A review of the social, economic, and health impacts for people directly impacted by energy procurement and transport will provide further lenses to explore justice concerns. Political and scientific efforts to improve the sustainability of energy extraction will also be analyzed. The class is structured to be accessible to students across disciplines. Cross-listed as ENST 311.	Bedi, Heather
JDST	215	**Jewish Environmental Ethics**	SINV	Since the 1960's many writers on environmental issues have blamed our contemporary enviornmental crises in part on a so-called "Judeo-Christian" worldview, rooted in the Hebrew Bible. Such writers assert that the biblical heritage shared by these two religious traditions, advocates an unhealthy relationship between humanity and nature, one in which human beings are destined to conquer the earth and master it. In this course we will explore Jewish perspectives on nature and the natural world through close readings of biblical and other classical Jewish theology, history and ritual practice, we will also examine the ways in which this motif is re-conceptualized in modern secular contexts (ie, Zionism, and the kibbutz movement). We will conclude by studying contemporary varieties of Jewish environmental advocacy. In addition to texts focused specifically on Judeo-Christian traditions, the syllabus will include other classic works of Environmental ethics foundational to the field of Environmentla studies. Cross-listed as RELG 215.	Lieber, Andrea
LALC	222	**Contemporary Peoples of Latin America**	SCON	An examination of the life of present-day primitive and peasant peoples of Middle and South America. These societies are seen holistically, and as they relate to urban and state centers. Cross-listed as ANTH 222.	Enge, Kjell
LALC	231	**Modern Latin American History since 1800**	SCON	Introduction to Latin American history since independence and the consolidation of national states to the recent past. Students explore social, economic, and political developments from a regional perspective as well as specific national examples. Cross-listed as HIST 131.	Borges, Marcelo
LAWP	290	**Spatial Literacy Across the Curriculum**	SINV	Understanding how to think about problems and concepts in a spatial context is a fundamental skill that is not well taught in the current Dickinson College curriculum. Alternatively referred to as "Spatial Literacy" or "Spatial Reasoning", this type of thinking generally focuses on understanding the importance of geographic space and the relationships formed by this space. Spatial literacy, like writing and quantitative analysis, is not a stand-alone subject, but rather it is a way of thinking that is applicable to many fields of studies, and is becoming increasingly important as a valuable competency for liberal arts students throughout all divisions. This course will examine the importance of geographic space as a learning construct and explore the value of spatial literacy for problem solving, creative expression, and communication across the humanities, social science and scientific disciplines. In doing so, students will have the opportunity to consider topics within their specific areas of study, and to discover how the application of spatial thinking can enable and facilitate the problem solving process across the curriculum. Students will be introduced to an assortment of easy-to-use mapping tools that include both quantitative and qualitative techniques, and will learn how to use these tools to investigate issues and questions from a spatial perspective, incorporate spatial analysis techniques into their problem solving methodologies, and to effectively visualize their data in ways that promote a more comprehensive understanding of the problem statement. Cross-listed as ENST 311 and PMGT 290.	Ciarrocca, James
MEST	266	**International Politics of the Middle East**	SCON	This course examines key factors and events in the formation of the modern Middle East state system and evolving patterns of conflict and cooperation in the region. Students will apply a range of analytical approaches to issues such as the conflicts between Arabs and Israelis, Iraq's wars since 1980, and the changing place of the region in global politics and economics. Cross-listed as INST 277 and POSC 277.	Webb, Edward
PHYS	132	**Introductory Physics**	SCON	An introduction to basic physics topics using the workshop method. This method combines inquiry-based cooperative learning with the comprehensive use of computer tools for data acquisition, data analysis and mathematical modeling. Topics in thermodynamics, electricity, electronics and magnetism are covered. Additional topics in chaos or nuclear radiation are introduced. Basic calculus concepts are used throughout the course. Recommended for physical science, mathematics, and pre-engineering students and for biology majors preparing for graduate study.	Reed, David
PHYS	132	**Introductory Physics**	SCON	An introduction to basic physics topics using the workshop method. This method combines inquiry-based cooperative learning with the comprehensive use of computer tools for data acquisition, data analysis and mathematical modeling. Topics in thermodynamics, electricity, electronics and magnetism are covered. Additional topics in chaos or nuclear radiation are introduced. Basic calculus concepts are used throughout the course. Recommended for physical science, mathematics, and pre-engineering students and for biology majors preparing for graduate study.	English, Lars

PHYS	361	**Physical Climate Modeling**	SCON	In-depth studies in special geological topics to be offered on the basis of need and demand. Recent topics have included Geology of PA, Origin of Life, Quaternary Geology, and Instrumental Analysis in Geology. Cross-listed as ERSC 311.	Reed, David
PMGT	290	**Spatial Literacy Across the Curriculum**	SINV	Understanding how to think about problems and concepts in a spatial context is a fundamental skill that is not well taught in the current Dickinson College curriculum. Alternatively referred to as "Spatial Literacy" or "Spatial Reasoning", this type of thinking generally focuses on understanding the importance of geographic space and the relationships formed by this space. Spatial literacy, like writing and quantitative analysis, is not a stand-alone subject, but rather it is a way of thinking that is applicable to many fields of studies, and is becoming increasingly important as a valuable competency for liberal arts students throughout all divisions. This course will examine the importance of geographic space as a learning construct and explore the value of spatial literacy for problem solving, creative expression, and communication across the humanities, social science and scientific disciplines. In doing so, students will have the opportunity to consider topics within their specific areas of study, and to discover how the application of spatial thinking can enable and facilitate the problem solving process across the curriculum. Students will be introduced to an assortment of easy-to-use mapping tools that include both quantitative and qualitative techniques, and will learn how to use these tools to investigate issues and questions from a spatial perspective, incorporate spatial analysis techniques into their problem solving methodologies, and to effectively visualize their data in ways that promote a more comprehensive understanding of the problem statement. Cross-listed as ENST 311 and LAWP 290.	Ciarrocca, James
POSC	277	**International Politics of the Middle East**	SCON	This course examines key factors and events in the formation of the modern Middle East state system and evolving patterns of conflict and cooperation in the region. Students will apply a range of analytical approaches to issues such as the conflicts between Arabs and Israelis, Iraq's wars since 1980, and the changing place of the region in global politics and economics. Cross-listed as INST 277 and MEST 266.	Webb, Edward
POSC	390	**The Politics of Environmental Protection in Asia**	SINV	This seminar takes a close look at the political, social, and legal issues that affect environmental protection in Asia. Focusing attention on China, Taiwan, Japan, and India, and by drawing upon scholarly literature in political science, sociology, law, and history, the course aims to provide students with a multidisciplinary understanding of the myriad factors which shape the content of environmental legislation and policies and how these are implemented in society. Does China's authoritarian system give environmental law more "bite"? What roles do NGO play in Asia? Does Confucianism or Hinduism make people more or less inclined to protect the environment? How do Asians deal with the impact of rapid economic growth? In short, we will try to understand the complex interaction between political, legal, and social dimensions of environmental protection in a region that is home to half of the world's population and three of the world's current and future economic powerhouses. Cross-listed as EASN 306 and ENST 311.	Diamant, Neil
PSYC	340	**Research Methods in Social Psychology**	SINV	We conduct empirical studies in order to become familiar with techniques for measuring attitudes and social behavior in the field and the lab, for analyzing and evaluating data, and for reporting findings and conclusions. Students gain direct experience in the process of conducting research studies by working as experimenters and data analysts.	Skelton, James
RELG	215	**Jewish Environmental Ethics**	SINV	Since the 1960's many writers on environmental issues have blamed our contemporary enviornmental crises in part on a so-called "Judeo-Christian" worldview, rooted in the Hebrew Bible. Such writers assert that the biblical heritage shared by these two religious traditions, advocates an unhealthy relationship between humanity and nature, one in which human beings are destined to conquer the earth and master it. In this course we will explore Jewish perspectives on nature and the natural world through close readings of biblical and other classical Jewish theology, history and ritual practice, we will also examine the ways in which this motif is re-conceptualized in modern secular contexts (ie, Zionism, and the kibbutz movement). We will conclude by studying contemporary varieties of Jewish environmental advocacy. In addition to texts focused specifically on Judeo-Christian traditions, the syllabus will include other classic works of Environmental ethics foundational to the field of Environmentla studies. Cross-listed as JDST 215.	Lieber, Andrea
SOCI	230	**Environmental and Social Justice**	SCON	This course reviews social inequities in relation to environmental issues. We examine the social construction of notions of equity and justice, and apply this learning to understand how societies frame environmental risk. Drawing from domestic and international case studies, we will explore how marginalized communities disproportionately experience environmental externalities. The social and environmental consequences of uneven development across place exemplify justice and capitalism contradictions. Examples of community agency to re-appropriate or reframe their environment will allow us to understand collective action to social and environmental injustices. Upon completion, students should have a deep understanding of efforts to ensure equitable distribution of environmental benefits and risks. Cross-listed as ENST 311 and SOCI 230.	Bedi, Heather
SOCI	230	**Environmental Sociology**	SINV	Environmental Sociology examines relationships between society and the environment. As populations have grown and our technologies have advanced, so has our impact on the environment.Environmental Sociology explores the political economy, the distribution of goods and bads, and seeks to find solutions to achieving sustainability.This course will examine the causes and consequences of ever-greater consumption, environmental and industrial disasters and accidents, global climate change and environmental refugees, and environmental racism and classism.	Barnum, Anthony
SOCI	230	**Sustainability: Social Justice and Human Rights**	SINV	History "is a crab scuttling sideways, a drip of soft water wearing away stone, an earthquake breaking centuries of tension." (Solnit, Rebecca, Hope in the Dark, 2004). This course will examine the importance of the environmental movement and broader definitions of sustainability. We will explore examples of direct action, of serendipitous change, and of world-changing events that have moved us more clearly toward an understanding of "our" shared future on this planet. We will survey the issues connected to sustainable systems and will focus more specifically on issues related to food, water and energy. Through readings, film, and experiential activities the course will challenge us to analyze the impact of various actors and assess our own responsibility. Cross-listed as ENST 311.	Bylander, Joyce
SOCI	238	**Consumer Culture**	SCON	The sociology of consumerism is a major specialty in European sociology, and is only recently receiving attention by American sociologists. In this class, we will examine the increasing importance of consumerism in daily life and the degree to which culture has become commercialized. We will discuss the sign value of commodities, as well as the shift from a stratification system based on the relationship of the means of production to one based on styles and patterns of consumption. We will also concern ourselves with the relationships between consumption and more traditional sociological concerns such as gender, race, and social class.	Schubert, J Daniel
SUST	490	**Baird Honors Colloquium**	SINV	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.	Leary, Cornelius
WGST	200	**Introduction to Women's and Gender Studies**	SCON	This is an interdisciplinary course, integrating literature, economics, sociology, psychology, history, anthropology, and geography. This course will focus on historical and contemporary representations of women. It will also examine the varied experiences of women, with attention to the gendered dynamics of family, work, sexuality, race, religion, socioeconomic class, labor, and feminism.	Oliviero, Kathryn

WGST	300	**Gender, Migrations & Feminisms**	SCON	Why do global controversies over immigration so often center on migrant women's fertility and their children's access to education and medical care? Why do some countries accept LGBT migrants but forbid gay and lesbians from adopting children or using artificial insemination? How is marriage used in immigration procedures to shape racial and ethnic diversity? What are the gendered implications when nurses and careworkers are a country's central export? This course examines how intersecting gender, sexual and ethnic hierarchies shape and are shaped by immigration. Applying insights from feminist theories of migration, students will explore how the gendered processes surrounding immigration craft concepts of nation, borders and citizenship. Readings and films examine how sexual and ethnic norms are renegotiated through the selection and regulation of immigrants. Central to our investigation is how transnational and economic forces compel migration, reshaping understandings of national belonging, workplaces, and family in the process. We will particularly consider how migrants negotiate multiple marginalizations, and in turn refashion understandings of community, identities, culture, and politics. An interdisciplinary framework combines media, law, activist, film, literary and historical accounts.	Oliviero, Kathryn