Sewanee: The University of the South

2014-2014

Sustainability Curriculum

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College of Arts and Sciences

Departments

Anthropology

Anthropology 298. Ecological Anthropology
This course examines human-environmental relationships from the anthropological perspective. Consideration of theoretical approaches and practical applications are supplemented by archaeological, ethnographical and ethnohistorical case studies. The class considers various ecosystems and landscapes as palimpsests that reveal cultural "footprints" to the archaeologist and human choices to the ethnographer. The course explores how an understanding of both can greatly inform ecological studies and further new thinking about environmental policy. (Credit, full course.) Ray

Art and Art History

Art and Art History 242. The Lens and the Landscape: Documentary Studies and the Environment
This course studies the human, ecological, and environmental histories of the region through the lens and practice of documentary production. In collaboration with historians, archaeologists, and biologists, students develop individual and group projects to create short documentaries about a diverse range of topics focused on the past and present environ- mental conditions of the Domain and its surroundings. (Credit, full course.) Pond, Malde

Art and Art History 282. Sustainable Structures
Through the study and application of sustainable materials as media for sculpture, design, and architecture, this course examines relationships among landscape, physical culture, and the built environment. With the benefit of various locally grown and recycled materials used to build a series of projects, the course employs new technologies and discusses issues related to the practical integration of ecologically sound aesthetics into contemporary culture. (Credit, full course.) Pond

Biology

BIOL 107. People and the Environment.
An exploration of how human activities such as food and energy production, resource extraction and waste disposal affect our natural environment and other organisms living in it. Students learn about earth systems, human activities stressing these systems and strategies for dealing with environmental challenges. Topics include biodiversity loss and conservation, agriculture, air and water pollution, and climate change. Not open for credit to students who have completed Biol 130. Non-laboratory course. (Credit, full course.) McGrath

BIOL 109. Food and Hunger: Contemplation and Action
A study of food and hunger from a biological perspective. The interactions among scientific, ethical, and cultural aspects of hunger are also examined. The readings, lectures, and discussions in the course are supplemented with work with local aid organizations and exploration of the contemplative practices that motivate and sustain many of those who work with the hungry. This course cannot be used in fulfillment of any general distribution requirement. (Credit, full course.) Staff

BIOL 130 Field Investigations in Biology
A study of ecology, evolution and biological diversity, with an emphasis on scientific investigations in the natural areas in and around the University. The course, which is scheduled for one afternoon each week, meets the distribution requirement for a natural science course but does not fulfill the requirement for a laboratory science course. (Credit, full course.) Staff

BIOL 209. Advanced Conservation Biology.
A study of the scientific basis for conservation of biological diversity. A case-study approach is used to address problems relating to species decline, habitat loss, and ecosystem degradation at local, regional, and global scales. Course emphasizes population modeling and GIS applications. Non-laboratory course. Prerequisite: Biology 130. (Credit, full course.) Evans

BIOL 210. Ecology.
A survey of the principles and applications of ecological science. Lecture covers the ecology of individuals, populations, communities, and ecosystems. Lab emphasizes field experimentation in the local environment. Prerequisite: Biology 130. Laboratory course. (Credit, full course.) Evans, McGrath, Cecala

BIOL 211. Biodiversity: Pattern and Process
A study of the diversity of life forms. The course examines major events in the evolution of life, the shape of the evolutionary tree of life, and the processes that underlie the origins of biological diversity. Laboratory, field, and statistical methods of biodiversity analysis are emphasized. Laboratory course. Prerequisite: Biol 130. (Credit, full course.) Zigler

BIOL 222. Advanced Conservation Biology (writing-intensive)
An examination of the negative impact of human activity on biological diversity and an exploration of how conservation science can be used to ameliorate that impact. Case studies are used to investigate such issues as deforestation, exotic species invasions, habitat fragmentation, endangered species protection, natural area management, and habitat restoration. Students examine critically the role of science in public policy decision-making as it relates to the protection of biodiversity in the United States. The course involves student-led discussions, guest speakers, field trips, and independent research. Laboratory exercises explore the use of field techniques, GIS analysis, and population modeling as problem-solving tools in conservation biology. Not open for credit to students who have completed Biol 209. Laboratory course. Prerequisite: Biol 130. (Credit, full course.) Evans

BIOL 232. Human Health and the Environment
A course integrating concepts in ecology and public health through the study of environmental threats to human health. Topics include population growth and food security, toxicity and toxins, food borne illness, emerging disease, waste and wastewater, air pollution and climate change. Students explore the interaction of poverty, environmental degradation, and disease through projects examining local environmental health issues. Laboratory course. Prerequisite: one course in biology. (Credit, full course.) McGrath

BIOL 235. Freshwater Conservation
A survey of existing and emerging threats to wetland ecosystems and the consequences for animal and human populations. This course discusses causes, consequences, and solutions for issues of international and local concern based on an understanding of freshwater ecology and function. Also considers multiple perspectives on water use and attempts to reconcile these differences so as to identify and publicize potential conservation solutions. Prerequisite: Biol 130 or Fors 121. (Credit, full course.) Cecala

BIOL 251. Field Studies in Belize
An interdisciplinary field immersion into two of the most biologically diverse ecosystems on earth: coral reefs and tropical rainforests. Students live in remote field stations in Belize, examining the natural history of these two systems, and exploring how they have changed over time as a result of human interactions. Biology 241 and 251 taken together count as one full laboratory course. Prerequisite: Biol 241. (Credit, half course.) Evans

BIOL 313. Ecosystems and Global Change
A study of how the cycling of elements among the atmosphere, soil, water and living organisms sustains ecosystems, and how disruptions in these cycles, both natural and human-induced, bring about environmental change. In the field, students evaluate the sustainability of land use by quantifying elemental cycles in natural and human-altered ecosystems. Laboratory course. Prerequisites: one course in Chemistry and one course in Biology. (Credit, full course.) McGrath

BIOL 315. Advanced Ecology and Biodiversity (writing-intensive)
A study of advanced topics in ecology and biodiversity, with an emphasis on integrating study of the scientific literature with field research in the natural areas of the Cumberland Plateau. Prerequisite: Biol 210 or Biol 211. Laboratory course. (Credit, full course.) Staff

Chemistry

CHEM 102. Earth, Air, Water and Fire: An Introduction to Environmental Chemistry
Both the natural environment and modern society run on innumerable chemical processes. This course examines the natural chemistry responsible for our environment and some of the anthropomorphic processes that have the potential to disrupt it. The course also examines how understanding this chemistry does or does not inform public perception and policy. Lecture, three hours; laboratory, three hours. Prerequisite: Chem 101 or permission of instructor. (Credit, full course.) Bachman

CHEM 211. Environmental Chemistry
This course examines the interactions among chemical, physical, geological, and biological processes that define the natural world. Fundamental chemical processes occurring within natural waters, soils, and the atmosphere are emphasized with consideration of anthropogenic activities. Specific topics include the origin and evolution of Earth, atmospheric chemistry, organic and inorganic components of soil and water, chemical weathering, and chemical fate and transport. Environmental problems such as acid deposition, climate change, loss of atmospheric ozone, pollution, and water treatment are also discussed. Laboratory course. Prerequisite: Chem 102, 111, or 120. (Credit, full course.) White

CHEM 412. Advanced Environmental Geochemistry
An examination of the chemical principles that determine how natural systems work and how anthropogenic activities can have an impact on the function of these systems. Topics include both fundamental chemical principles and case studies of particular environmental systems. Prerequisite: Chem 102 or permission of instructor. Lecture, three hours. (Credit, full course.) Bachman

Economics

ECON 310. Economic Development
The course examines the principles and concepts of development and focuses on major development problems and policies, both domestic and international. Topics of analysis include theories of economic growth and development, poverty and income distribution, population, human capital, agricultural and rural development, and international trade. Prerequisite: Econ 101. (Credit, full course.) Mohiuddin

ECON 311. Health and Development
This course provides students with an understanding of issues regarding the delivery of health care services in the context of developing countries. Topics include the measurement of health status; the relation between health and economic development; the demand for health services; cost-benefit and cost-effectiveness analysis; and methods for financing health care in developing, resource-constrained nations. Prerequisite: Econ 101. (Credit, full course.) Theyson

ECON 335. Environmental Economics
A study of the causes of and solutions for pollution and environmental degradation weighs the value of ecosystems and their role in sustaining economic activity. Applies cost/benefit analysis to environmental issues and provides an introduction to economics of nonrenewable and renewable resources such as mines, forests, and fish. Prerequisite: Econ 101. (Credit, full course.) Staff

ECON 381. The Political Economy of Sustainable Development (Also POLS 381)
This course examines the different configurations of market, state, and cultural forces presented by societies as they respond to the challenges associated with attempting to meet present needs and demands without compromising their natural and social base for meeting the needs of the future. Theoretical discussions are combined with case studies. Course is identical to Econ 461 with the exception that special attention is given to research in 461. Students taking this course may not take Pols 461. Prerequisite: Econ 101. (Credit, full course.) Staff

English

ENGL 220. Poetry, Nature, and Contemplation (also ENST)
This course approaches the reading and writing of poems as contemplative practices through a diverse selection of American poetry of the earth, from the nineteenth century to the present day, combined with daily meditation in and outside of class, and assigned journals and other writing. In doing so, it explores the relationship of the self to its surroundings and the role of the written word in defining that relationship. Prerequisite: G1 credit earned from AP/IB or from Sewanee coursework. (Credit, full course.) Michael

ENGL 396. American Environmental Literature (also ENST)
A study of writings from the colonial era to our own day reflecting the diverse ways of imagining humanity's relation to the natural environment. Readings include both traditional literary texts by authors such as Thoreau, Cather, and Frost and seminal nonfiction by figures such as Aldo Leopold, John Muir, Rachel Carson, and Wendell Berry. Prerequisite: any GFWI English department course. (Credit, full course.) Gatta

Forestry/ Geology

FORS 121. Introduction to Forestry
This introduction to the science and study of forestry includes tree structure and function, forest types of North America, forest biology and ecology, silviculture, forest management, forest products, wood properties, and U.S. forest policy. Lecture, three hours, laboratory and weekend field trips. (Credit, full course)

FORS 201. Natural Resource Issues and Policies
An overview of the contemporary use of renewable and nonrenewable natural resources; physical, economic, social, and environmental factors, policies and legislation affecting their use. (Credit, full course)

FORS 204. Forest Wildlife Management
A survey and analysis of how vertebrate animals affect forest processes, with particular emphasis on forest regeneration on the Cumberland Plateau. This discussion-oriented class will also address the history and current status of U.S. and international wildlife management, and the effects of forest management on game and non-game species. Students will interact with wildlife management professionals in Tennessee and will design and implement a field study to quantify the effects of vertebrate animals on forest growth and development. Fall of even-numbered years. (Credit, full course)

FORS 211. Dendrology
Explores the biology and morphology of trees, with emphasis on the major forest species of North America and selected forest types elsewhere in the world. Primary focus is on the ecophysiological characteristics of species and their roles in forest succession, distribution across the landscape, and response to disturbance and environmental stress. Includes field identification of native trees and shrubs of the Southeast. Lecture, three hours; laboratory and weekend field trips. (Credit, full course)

FORS 212. Forestry in the Developing World
An introduction to the use and management of trees in the developing world. Social and technical aspects of forestry will be considered. Topics will include the role of forestry in development, land and tree tenure, the role of women in forestry projects, agroforestry, trees in traditional systems, the forest as habitat, and the role

of western technology as applied to forestry in the developing world. (Credit, full course)

FORS 230. Urban Forest Management
Study of establishing and maintaining trees in urban environments. Emphasis on the theory and practice of individual tree care, selection, pruning and assessment, as well as urban forest inventory and planning. Prerequisites: Forestry 121, or Biology 106, or permission of instructor. Lecture and field trips. Spring 1996 and alternate years. (Credit, full course)

FORS 303. Soils
A study of soils as they relate to land use, bedrock and geomorphology, site quality, and vegetation processes. Emphasizes field interpretation of soils as one component of terrestrial ecosystems. Prerequisites: Chemistry 100 or 101, or permission of the instructor. Lecture, three hours; laboratory and field trips, full course. (Credit, full course)

FORS 305. Forest Ecology
Explores the interrelationships between structure and function of forested ecosystems, approaching the forest community from a physiological perspective. Emphasizes the influence of microclimate, nutrient cycling, and disturbance on community productivity and composition. Prerequisites: Forestry 111 or 121, and Biology 106 or 305, or permission of the instructor. Spring 1996 and alternate years. Lecture, three hours; laboratory and field trips. (Credit, full course)

FORS 307. Biometrics
Presents principles and methods employed in estimating forest and other natural resource parameters. Introduction to the uses of statistical models in drawing inferences about biological populations with an emphasis on sampling theory and field methods. Topics include: significance testing, regression, correlation and analysis of variance with multiple classification. Elements of experimental design with an emphasis on biological applications. Prerequisites: either Mathematics 204 and Forestry 121 or by permission. Lecture, three hours; laboratory, three hours. (Credit, full course)

FORS 312. Silviculture
Theories and techniques of applying ecological knowledge to control the establishment, composition, and growth of forests. Prerequisite: Forestry 111 and 121 or permission of the instructor. Lecture, three hours; laboratory and field trips. (Credit, full course)

FORS 314. Hydrology
Occurrence, movement, quality and behavior of water in the hydrologic cycle with emphasis on surface and underground water. Includes techniques and problems of measurement and utilization. Prerequisite: Geology 121. Lectures, three hours; laboratory and field trips, three hours. (Credit, full course)

FORS 316. Tropical and Boreal Forest Ecosystems
A detailed examination of important components and processes in tropical and boreal forest ecosystems. Topics will include: climate, forests, and soils that characterize these two biomes, carbon and nutrient dynamics in undisturbed forests, and the effects of land use change on properties of these forested systems. Prerequisites: Forestry 121 or Biology 114 or Biology 131 (with permission from instructor). (Credit, full course)

FORS 319. Natural Resource Management and Decisions
A survey of the methods used in managing natural resources with emphasis on forests, wildlife, and other renewable resources. Use of modeling and decision-making software. Topics include: 1) evaluating the effects of forest stand characteristics, tax policy, risk, and interest rates on management practices; 2) choosing among policy alternatives proposed by competing groups; and 3) employing optimization procedures and economic analysis. Prerequisites: Forestry 121 or equivalent, Forestry 312 or taken concurrently, or by permission. (Credit, full course)

FORS 328. Geology and Forest Ecology of the Yellowstone Country
A study of the geologic framework, hydrology, and forest ecology of Yellowstone National Park of the Northern Rocky Mountain region. Focuses on the interrelationships between geology and forest ecology, and on the influence of fire. An additional half course may be earned with successful completion of a field trip to the Yellowstone area. Prerequisites: Geology 121, permission of the instructors, and one of the following: Forestry 111, Forestry 121, Biology 106 or Biology 131. Spring 1995 and alternate years. (Credit, full course)

GEOL 121. Physical Geology
Introduction to rocks and minerals, the composition and structure of the earth, and the dynamic processes operating within and upon the earth. Lecture, three hours; laboratory and field trips (including an overnight trip to the Great Smoky Mountains), three hours. (Credit, full course)

GEOL 215. Geological Resources
A study of economically valuable minerals and rocks (including metals, nonmetals, industrial minerals, and hydrocarbons) in terms of their origin, tectonic settings, extraction and use. Topics include global distribution and genesis of deposits in relation to plate tectonic theory, prospecting techniques, mining methods, mining laws, economics of the mineral and petroleum industries, and environmental problems associated with exploration and development. Prerequisite: Geology 121. Lecture, three hours; laboratory and field trips. (Credit, full course)

GEOL 222. Historical Geology
History of the earth; physical environments, history of life, and tectonic development throughout geologic time as recorded in the rock record. Emphasis on North America. Prerequisite: Geology 121. Lecture, three hours; laboratory and field trips. Fall 1995 and alternate years. (Credit, full course)

GEOL 225. Sedimentology
A study of sedimentary rocks and the processes that form them. Field and class studies stress the link between modern sedimentary environments and their ancient counterparts. Discussion of the occurrence of oil and coal. Emphasis on rocks of the Cumberland Plateau and other nearby areas. Prerequisite: Geology 121. Lecture, three hours; laboratory and field trips, full course. Fall 1994 and alternate years. (Credit, full course)

GEOL 235. Earth Systems and Climate Change
A study of climate change, its causes, and the impact of such on sea level, glacial regimes, and the development of life through geologic time. Special emphasis on evidence for past and recent climate change. (Credit, full course.)

History

HIST 386. African Environmental History
A survey of African environmental and agrarian history, focusing on the historical interrelation- ship between Africans and their environment. Topics include colonial misconceptions of Africans and their environment; key environmental factors in the development of African societies and the slave trade; agrarian history with its focus on agricultural production; colonial-era developments leading to food insecurity; the failure of large-scale "development" and modernization projects and ideologies; the creation of nature reserves; the denial of African hunting traditions, and the promotion of the "great white hunter" and safari culture. This seminar class emphasizes historiography, primary sources, and discussion. Prerequisite: One history course with attribute G4, including AP or IB credit. (Credit, full course.) Levine

Philosophy

PHIL 230. Environmental Ethics (also ENST 230)
Examines a wide range of controversial issues concerning the moral responsibilities of human beings toward the natural environment with special attention to competing philosophical theories on the moral status of non-human species and natural ecosystems. (Credit, full course.) Peters

Physics

PHYS 105. Energy and the Environment
This course examines energy sources currently being used in our society and those proposed for future use. The fundamental physical principles underlying production, transmission, and use of these sources are studied. Particular application is made to the analysis of local energy production and usage. This course satisfies the non-laboratory science distribution requirement. (Credit, full course.) Staff

PHYS 106. Foundations of Global Warming
A study of the physical principles and mechanisms underlying global warming. Influences of the sun, earth surface, atmosphere, and oceans are considered. Observational records that describe surface temperatures and changes in the gaseous atmosphere are examined. Also discussed are effects of global warming and possible future scenarios. (Credit, full course.) Staff

Politics

POLS 150. World Politics
An introduction to the study of international relations concentrating on perspectives and policies of major countries, principal institutions, international law and international organization, and selected topics — for example, arms races and arms control, economic and political integration, disparities of income, problems of food and population, and human rights. Course requirements may include simulation. (Credit, full course.) Manacsa

POLS 260. Political Theory of the Environment
An applied course in the theoretical literature that underlies understandings of the natural environment, human interaction with the environment, and the rights both of humans and of elements of the natural order. Readings and discussion emphasize the theoretical underpinning of environmental justice, both domestic and international, as well as the intersection of environmental theory with international political economy. (Credit, full course.) Staff

POLS 382. International Environmental Policy
Growing human impact on the natural environment, together with the broadening linkages among states, international organizations, multinational corporations, and border migration, provide the context for this course. Among the central concepts and debates it addresses are the history of international environmental thought, relevant actors, the intersection of environ- mental policy and international trade, finance and investment, and the creation of international environmental law. Students also discuss issues of sustainable development, global governance, and global environmental justice. (Credit, full course.) Ehresman

Psychology

PSYC 215. Behavior Modification for Sustainability
Research and theory to encourage sustainable practices. Attention is given to empirical studies on modifying behavior (recycling, wearing seat-belts), affect (food preferences, stress), and cognitions (self-regulation, external locus of control). Includes consideration of well-established theories in areas such as attitude change and leadership. Examines the impact of environmental context - e.g., availability of cars and roads - and the disconnect between pro-environmental attitudes and environmentally-destructive behaviors. Prerequisite: Psyc 100 or 101, or junior standing. (Credit, full course.)

Religion

RELG 162. Introduction to Asian Religion
An introduction to the major religious traditions of Asia: Hinduism, Buddhism, Confucianism, Daoism, and Shintoism and their views of reality and humanity. (credit, full course.) Brown

RELG 307. Religious Environmentalism
An exploration of the religious aspects of contemporary environmentalism and religious critiques of the emphasis by Americans on the values of consumerism and convenience. A service-learning component requires students to participate in a local environmental project and to reflect on both their own ethical commitments and those of the University. (Credit, full course.) Brown

RELG 341. Religion and Ecology
Considers the relationship between the natural and the sacred in selected traditions such as Amerindian religions, Hinduism, Buddhism, Daoism, Judaeo-Christian tradition, and con- temporary "eco-religion." Emphasizes analysis of latent ecological/environmental resources or conflicts in each tradition studied. Offered alternate years. Community engagement. (Credit, full course.) Smith

RELG 350. Field Methods in Religious Studies
A field-based seminar to examine the effects of religious belief and doctrine upon landscape and material culture in the upland South, including Appalachia. Core topics for different years vary and include Shaping the Land, Cemeteries, Log and Stone, Churches, and Village and Town. Field seminar. Prerequisite: one course in religion, philosophy, or anthropology. Community engagement. (Credit, full course.) Smith

RELG 353. Buddhism and the Environment
An investigation of Buddhist images, symbols, stories, doctrines, ethics, and practices as they relate to understanding the environment and humanity's

relationship with it. Classical texts as well as modern commentaries by Buddhist teachers, writers, and activists are examined. (Credit, full course.) Brown

RELG 393. Rural Religion
A study of the religious forms of rural society with special emphasis upon the rural church in the southeastern U.S. Attention to historical, social, cultural, and demographic transformations of rural institutions from 1800 to the present. Fieldwork required. Lectures Monday and Wednesday, fieldwork Thursday afternoons. Community engagement. (Credit, full course.) Smith

Russian

Russian 363. Environmentalism and Ecocide in Russian Literature and Culture
A study of representations of the natural world in selected Russian and Soviet texts and images. Students examine the development of 19th-century pastoralism and nature writing, emergent environmentalism, Stalinist industrialization, and the threat of environmental decimation (exemplified by the Chernobyl disaster) in the 20th century and beyond. Topics explored in- clude the political appropriation of natural motifs; ecology, nationalism, and national identity; totalitarian culture and the environment; health, food, and ethics; “hero projects” glorifying technological achievement and the mastery of nature; and demographic crisis. This course is taught in English and does not satisfy the language requirement. (Credit, full course.) Skomp

Programs

Computer Science

CSCI 120. Introduction to Environmental Computing
The course includes an introduction to common software programs used in geographic information systems (GIS) and provides an overview of GIS-related technologies. It also introduces students to a deeper understanding of the Internet as a computing technology and how it can be used best to share environmentally-oriented research and information with the public. The class covers hypertext markup language, basic design, layout, construction, setup and maintenance of a web site as the support structure for online publication of environmental content. Existing environmental web sites provide valuable case studies for analysis and improvement. (Credit, full course.) Dale

Education

EDUC 205. Introduction to Environmental Education (also ENST)
An introduction to the philosophy, goals, theory, and practice of environmental education. The history of environmental education, as it pertains to environmental literacy, implementation, and professional responsibility, is explored through hands-on learning activities as well as use of texts. Educational models which promote ecologically sustainable behaviors are considered as well. This course includes some field trips. This course has the attribute of Environmental Studies. (Credit, full course.) Staff, Carter

Environmental Studies

ENST 100. Walking the Land
A field-oriented geology and writing course conducted on the Cumberland Plateau and surrounding provinces. The emphasis is on observation of geological features, particularly geomorphology, and how these relate to other natural parts of the landscape. Historical aspects of human use of the land are also be emphasized. Extensive walking and hiking. Field journals are part of the writing-intensive approach. Four hours (one afternoon) a week. (Credit, full course.) Potter

ENST 101. Introduction to Environmental Studies
An interdisciplinary introduction to Environmental Studies through the examination of the scientific and social aspects of environmental issues. Field components of the course focus on the University Domain and the surrounding area. This course is required for all students who major or minor in Environmental Studies and should be taken before the junior year. (Credit, full course.) Staff Fielding

ENST 140. Readings in Island Ecology
Supervised readings in geology, coastal marine biology, botany, and animal behavior as preparation for the interdisciplinary summer program in island ecology. No prerequisite. Normally not open to seniors. (Credit, half course.) Potter, Smith

ENST 201. Foundations of Food and Agriculture
Integrating local, regional, and global perspectives, this course outlines the history of agriculture, introduces the development of food systems and policy, and reviews the environmental impact of food production. Among topics addressed are the history of agricultural expansion in the US, the development of agriculture and food policies, interaction among agricultural markets at home as well as abroad, and sustainable agriculture. Classroom activities emphasize the involvement of multiple constituencies in identifying and articulating agricultural issues. Field opportunities include garden activities and local trips aimed at relating broader issues to how livelihoods are pursued on the Cumberland Plateau. (Credit, full course.) Staff Carter

ENST 217. Fundamentals of GIS
An introduction to the basic concepts and applications of geographic information systems (GIS). Topics include geographic data acquisition, data management, cartography, and methods of geospatial analysis. Laboratory exercises and projects focus on applications of GIS in understanding and managing the environment. Laboratory course. Prerequisite: Environmental Studies major or permission of instructor. (Credit, full course.) Van de Ven

ENST 220. Reading the Landscape
A study of how patterns in the current biological and physical landscape of the Cumberland Plateau can be explained by historical human land use and natural disturbances. Landscape change is examined through field investigation of specific places on the Domain conducted in combination with the analysis of aerial imagery and other geospatial data resources. The course also addresses how disturbance history can influence one's aesthetic valuation of the landscape and guide landscape-level conservation efforts. This course may count as a non-laboratory science course in partial fulfillment of the college's natural science distribution requirement. (Credit, full course.)

ENST 240. Island Ecology
An interdisciplinary field course combining the study of geology, hydrology, marine biology, invertebrate zoology, marine plant communities, and wildlife ecology in a single coastal island ecosystem. Prerequisite: completion of Environmental Studies 140 and acceptance into the Island Ecology Program. Satisfies the science and laboratory science requirements and one writing-intensive credit. Offered each summer. (Credit, two full courses.) Potter, Smith

ENST 285. The Development of Aldo Leopold's "Land Ethic"
This course traces the development of Aldo Leopold's famous essay "The Land Ethic" through his 40-year career at the beginning of the ecology and conservation movements. Early writings by this noted conservationist are analyzed from the perspectives of environmental history and natural resource management and policy. Leopold essays from a broad spectrum of time (1915-1949) are discussed. Topics include ecosystem management, wildlife conservation and utilization; outdoor recreation, public lands, and wilderness; and agriculture as a land use. To contextualize Leopold's historical voice, perspectives on modern issues are contrasted with perspectives contemporary to Leopold. (Credit, full course.)

ENST 300. Seminar in Ecology and Ethics
Students analyze and evaluate scientific and ethical arguments from selected environmental issues. Emphasis is on exploring the relationship between science and ethics. A research project is required. Fulfills the capstone experience of the Environmental Studies concentration. Prerequisite: one course from each of the two groups of Environmental Studies courses (science and humanities/social science) or permission. This course counts as hours outside the major field for all majors unless it is accepted in fulfillment of a requirement for a specific major. (Credit, full course.) Peters

ENST 301. Introduction to Spatial Information Systems and Field Mapping
An introduction to the ArcView Geographic Information System and the concepts and uses of Spatial Information Systems, the analytic side of GIS. The course focuses on the use of GIS in natural systems but has modules and exercises in the social science aspects including crime mapping and human demographics. The course contains three modules on field mapping. No prerequisites but knowledge of trigonometry is very useful, and students should know the basics of Windows and Excel. Not open for credit to students who have completed Forestry/Geology 410. (Credit, full course.) Staff

ENST 302. Ecology, Evolution, and Agriculture
An investigation of the reciprocal interaction between humans and the organisms that nourish us. The class examines the origins and subsequent evolution of domesticated plants, animals, and agricultural pests, and the ways in which these organisms have shaped our bodies and communities. The class also focuses on the relationship between food production and hunger. Class involves reading, writing, and discussions, invited speakers, field trips, and the study of ecological processes and natural history in and around an organic garden. (Credit, full course.) Staff

ENST 305. Ecological Integrity in Agriculture
This course develops a critique of problems and solutions relating to agricultural technology, policy, and practice with a specific focus on ecology and ecological integrity. The course begins with a brief survey of agricultural history, through the era of modern food systems, with emphasis on the development of industrial agriculture. After evaluating the environmental impact of modern agriculture, the course addresses the foundations of sustainability, with specific reference to the ecology of sustainable agriculture. Field opportunities are provided for students to interact with local producers on their farms and to engage directly the ecological processes involved in food production on the Domain. Prerequisite: Biol 130. (Credit, full course.)

ENST 310. Comparative Watershed Studies
The course compares watersheds of the Cumberland Plateau with those of the Kraichgau region of southwestern Germany. Emphasis is on the hydrology, geology, forest cover, and history of human use of select watersheds and how these factors have defined the present natural and cultural landscapes. Prerequisite: GEOL 121. (Credit, half course.) Knoll

ENST 311. Comparative Watershed Studies Field Course
A two-week field course in the Kraichgau region of southwestern Germany. The course is hiking-based and requires students to keep a detailed notebook. Prerequisite: EnSt 310 and permission of instructor. Early summer of odd-numbered years. (Credit, half course.) Knoll

ENST 317. Advanced Applications of GIS
Spatial analysis methods for environmental analysis and management. Topics include remote sensing and image analysis, surface analysis, spatial statistics, internet mapping, visualization of geographic data, and other advanced GIS methods. Laboratory course. Prerequisite: ENST 217. (Credit, full course.) Van de Ven

ENST 320. Environment and Sustainability Colloquium
This required course for junior E&S majors addresses some topical theme from an interdisciplinary perspective and with focus on the connections between science and policy. Colloquium themes vary from year to year, and students present relevant research articles and lead discussions with emphasis on developing skill in public speaking. Students also work with course instructors and faculty mentor(s) to propose a research project to be completed as part of their senior Environment and Sustainability capstone. Prerequisite: EnSt 101 and completion of foundational science requirement in major. (Credit, full course.) Staff

ENST 332. Archaeological Resource Management and Policy
This course explores international and national approaches to archaeological heritage management. It includes review of public policy that protect sites (much of it incorporated into environmental legislation) and of regulations that guide the process. The course centers around study of how the determination of such policies affects negotiation between the past and present as archaeologists, various governments, descendant communities, and others try to balance a concern for preservation with growing demand for development and sustainability. Interwoven into the course are topics such as how diverse cultures view the past, the growing commodification of archaeological sites in the tourist trade, the antiquities market, and careers in cultural resource management. (Credit, full course.)Sherwood

ENST 334. Environmental Policy and Law
This course combines the study of public policy with the study of major environmental problems. Students explore public policy concepts and the instruments used in environmental regulation. Topics include air and water quality issues, hazardous waste and risk management, natural resources and biological diversity. The course also discusses the impact of environmental groups and citizen activism on this highly complex area of public policy. Prerequisite: EnSt 101 or EnSt 200. (Credit, full course.) Staff Fielding

ENST 336. Environmental Land-Use Policy
This course examines the complex systems and values influencing land-use decision-making in both rural and urban settings throughout the U.S. and abroad. Students learn how government agencies and local citizens often conflict in their attitudes and values regarding the costs and benefits of growth and development. Particular attention is paid to forest conversion issues on the South Cumberland Plateau. Students attend local planning sessions and meetings with local officials. Prerequisite: EnSt 101 or EnSt 200. (Credit, full course.) Carter

ENST 340. Tools for Environmental Policy Analysis
This course introduces students to quantitative tools applicable to the analysis of environmental policy — including forecasting methods, simulation modeling, and mathematical programming. Probability distributions, risk modeling, and decision-making under uncertainty are also addressed. Students apply such tools to a range of policy analyses and also, where relevant, learn to work with large-scale models developed by others. (Credit, full course.)

ENST 341. Environmental Data Analysis
A survey of the principles of study design and data analysis in the field of environmental studies. Topics include study design, hypothesis testing, sampling methodology, exploratory data analysis, and the graphical presentation of results. These concepts and techniques are examined through discussion of the primary literature and problem sets. (Credit, full course.) Staff

ENST 400. Seminar in Environmental Studies
A capstone experience for the Environmental Studies concentration. An examination of selected environmental issues from a variety of perspectives in the natural and social sciences and humanities. Special emphasis is on student research on the Domain and in the region. (Credit, full course.) Staff Carter

ENST 431. Practicum in Religion and Environment
This course, which calls for involvement in some faith-based or otherwise engaged form of appropriate activity or service, offers students a capstone opportunity to examine their spiritual experiences and religious beliefs in the context of active engagement with environmental issues in a variety of ways. Reflection on the engagement experience - expressed both in written form and through oral presentation - is required. (Pass/fail only, half course.)

ESCI 430. Watershed Science Capstone
Capstone course for students pursuing the Watershed Science Certificate. A multidisciplinary, project-oriented course in which students address issues related to two or more of the following topic areas: the interaction of biological processes and watershed function, chemical processes in streams and watershed, the relation between forested landscapes and hydrologic systems, or geological processes in terrestrial aquatic systems. Prerequisites: Geol/Fors 314 and instructor's permission. (Credit, full course.) Staff

First Year Program

FYP 100. Discovering a Sense of Place - Upon and Beyond the Domain
This interdisciplinary course invites first-year students to reflect upon several dimensions of their new living environment, both within and beyond the University's extensive landbase of the Domain — and thereby to enlarge their intellectual and existential understanding of what a "sense of place" might mean in several diverse and ever-widening contexts. Touching eventually on global issues, the inquiry begins with study of the Domain's natural features in conjunction with its built environment — including its associations with surrounding communities, its stories of settlement past and present, and its agricultural and resource assets. Much though not all of this field and community-linked exploration takes place in concentrated form during a special curricular session, set aside for first-years only, scheduled for two weeks prior to the start of the regular academic term. Further class sessions within the regular term will conclude before Thanksgiving. Some instruction takes place in plenary group sessions, linked to a common core of reading assignments. There is also a variable thematic coloring to each small-group section of the course. Individual instructors define the angle of emphasis relevant to their section, and students have some option to enroll in a section whose subtitle accords with their interests. (Credit, full course.) Staff

International and Global Studies

INGS 200. Introduction to International and Global Studies
A course concerned with analyzing how international and global integration shape local development. After reflecting on this integration during the nineteenth and early twentieth centuries and its impact on nation-state formation and economic development, students analyze the construction of the post-World War II international system around the Bretton-Woods institutions. Attention is also given to how international norms pertaining to human rights and democracy apply to diverse countries during the current period of globalization, and to how transnational linkages shape economic and cultural transformations. The course concludes with discussion of living abroad — including topics such as language acquisition and personal transformation. Required core course for IGS majors. (Credit, full course.) Wilson

School of Letters:

English 596. American Environmental Literature and Ecocriticism
This course explores the "green theme" and the emerging cross-disciplinary character of "ecocriticism" as reflected in writings selected from the full span of American cultural history. Readings include both traditional literary texts and seminal nonfiction by figures such as William Bartram, John Muir, Aldo Leopold, Rachel Carson, Annie Dillard, Barry Lopez, and Wendell Berry. (Credit, full course.)

School of Theology:

BIBL 520. Bible and Sustainability
The Bible mandates care for the earth, but it has also been interpreted as offering humanity destructive mastery over the environment. Building on the work of Ellen Davis, Wendell Berry, and other agrarian readings of the Bible, this course will explore what the Old Testament says about creation, farming, food justice, climate change, and the local economy. The class will explore this idea in academic as well as practical ways. Treadway [3]

BIBL 562. Food and Food Sustainability in the Bible
Food is paramount to the survival of the Israelite people as well as indicative of their relationship with Yahweh. Similarly, food is central to our identity as Christians, as the Bible invites us to "taste and see that the LORD is good" (Psalm 34:8), and we gather around the Table to keep the Feast. But how should we read the Bible in our current ecological climate, when the very food we consume is often connected to the exploitation of the earth? This course will explore the biblical understanding(s) of food as it relates to faith, covenant, purity, ritual, justice, and humans' relationship to the land itself. While particular attention will be paid to the Old Testament texts, we will also examine relevant New Testament texts, particularly notion of Holy Communion (and its Passover roots). The course will be a continuation of Bible and Sustainability, yet that course is not a prerequisite for enrollment, as there will be minimal overlap and increased depth of subject matter. A Hebrew-reading section will be offered for those students who would like to hone Hebrew skills and examine the texts in their original language. Pre-requisite: One semester of Old Testament. 3.000 Credit hours. Treadway

CEMT 553. Many Sides of Sustainability
A course offered to undergraduates (mostly senior natural resource majors) and seminarians. This course has several goals, including helping people steeped in natural sciences and those in theology to begin to develop a common vocabulary. This includes biblical, theological, and practical congregational materials as well as economic and “hard” scientific matters with possible interaction with the University of Georgia’s River Basin Center. There are readings, lectures, seminars, and field trips. The major graded piece is a small team project. This course also has the attribute of MNST. Wright [3]

CEMT 560. Environmental Ethics

3.000 Credit hours
Thompson

CEMT 561. Climate Ethics
This seminar will examine the unprecedented ethical challenges raised by climate change. Readings will incorporate religious and non-religious ethical approaches and a variety of disciplinary lenses, including natural sciences, social sciences, and economic and policy perspectives. Students will engage these arguments through readings, discussions in class and online, and a final synthetic essay, in order to address questions of why and in what ways climate change matters morally, and how moral agents might respond.
3.000 Credit hours Thompson

THEO 552. God and Nature
The objective of this course is to examine ways in which Christians have understood God in relation to the created order. We will focus specifically on the last five hundred years: how our conception of nature has shifted and, with it, our ways of conceiving of God. We will juxtapose this with modern cosmological "stories" and the challenges they present theologically. A field component will be an aspect of this course: students should be prepared to explore the Domain both in and out of class time. Crysdale [3]

THEO 559. Readings in Contemporary Eco-Theology
This is a seminar on contemporary writings in theology concerned with environmental issues. The major focus for 2015 is on David Clough, On Animals, and the impact on Christian Systematic Theology from taking seriously ethical claims concerning the humane treatment of animals.
Prerequisite: an introductory course in systematic theology. Hughes [3]