

# ENVIRONMENTAL STUDIES (ENST)

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## **ENST 100. Introduction to Environmental Studies. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

A survey of environmental issues intended for non-majors. Students will understand the cultural, political, historical, economic and ethical complexities of environmental problems and their responses. Intended for first-year students and sophomores. Does not count toward either the Environmental Studies or Environmental Science major.

## **ENST 113. Human Impact on Environment. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

Causes and effects of major environmental changes induced by humans, challenges to our future well-being, and opportunities for future sustainability. Prerequisite: open to first-year students only. Crosslisted as GEOG 113.

## **ENST 160. Introduction to Environmental Chemistry. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3,Other:4**

One semester terminal course in chemistry. Introduction to the basic chemistry principles that govern natural processes and anthropogenic effects on the environment. Satisfies laboratory science requirement for Bachelor of Arts students not majoring in science or engineering. Not open to students who have taken CHEM 105 or any 200-level CHEM. Crosslisted as CHEM 160.

## **ENST 201. Environmental Problems-Sustainable Futures. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3**

Develops a working understanding of the core concepts linked to ENST introduces skills such as posing researchable questions, gathering data, presenting oral arguments, applying these skills in group projects. For 1st 2nd yr. students majoring/intending to major in ENST or ENSC. Jr Sr by permission.

## **ENST 204. Global Political Ecology of Food. 1 Credit.**

**Offered Occasionally; Lecture hours:3**

This course examines the political-economic and ecological dimensions of contemporary transformations in the global food system.

## **ENST 205. Green Utopias. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3**

Introduction to literary utopias and to the cultural writings of various ecological movements offering alternative concepts to the increasing destruction of nature.

## **ENST 206. Environmentalism and Its Discontents. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3**

A survey of historical and contemporary efforts to protect nature and the backlash they have provoked.

## **ENST 207. American Environmental History. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3**

This course examines how nature (soil, disease, water, climate, etc.) shaped American history and how Americans transformed the environment, from the colonial period to today.

## **ENST 208. Environmental Biology. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3,Lab:3**

Introduction to ecology and evolutionary biology, organism interactions with environment, biodiversity, energy flow, and nutrient cycling, with emphasis on human influences on living systems and applications of evolutionary biology and ecology to solving environmental problems. This course is intended primarily for students majoring in environmental studies.

## **ENST 209. Ecopolitics in Latin America. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3**

This course examines climate policy debates and recent shifts in global environmentalism, with a focus on a wide range of Latin American territories. Crosslisted as ANTH 202 and LAMS 202.

## **ENST 211. Environmental Pollution and Control. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:Varies,Lab:2**

Introduction for non-engineering students to the major areas of environmental engineering. Topics include environmental chemistry, biology and ecology, water and air pollution and treatment, solid and hazardous wastes, sustainability, and global climate issues. Not open to students who have taken CEEG 340.

## **ENST 213. North American Environmental History. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

This class introduces the practices and purposes of studying our past relationships with nature, to better understand the origins of North America's landscapes today. Crosslisted as HIST 213.

**ENST 215. Environmental Planning. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3**

Explores the main approaches to planning theory and their environmental applications. Considers how environmental planning can promote the socio-ecological health and sustainability of democratic communities. Crosslisted as GEOG 215.

**ENST 216. Preindustrial Environment. 1 Credit.**

**Offered Alternate Fall or Spring; Lecture hours:3**

An introduction to global environmental history of the preindustrial world through three thematic lenses: how the natural environment shaped patterns of human life, how ideologies toward nature shifted over time, and how human activities and ideologies reshaped the ancient landscape. Crosslisted as CLAS 220.

**ENST 221. Hazardous Waste and Society. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3,Lab:3**

Hazardous waste regulation, risk assessment and toxicology, overview of treatment technologies and site investigation, environmental audits, facilities siting and public participation, pollution prevention. Not open to engineering students, and also not open to students who have taken CEEG 444.

**ENST 222. Concepts in Sustainability. 1 Credit.**

**Offered Alternating Fall Semester; Lecture hours:3,Other:2**

This course explores the definitions and concepts of economic, social and environmental sustainability and utilizes the tools to evaluate sustainability metrics including life cycle assessment, systems thinking, and economic analysis. Not open to engineering students.

**ENST 224. Visions of the Susquehanna. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

This course examines literature of the Susquehanna Valley. Crosslisted as ENLS 224. Prerequisite: permission of the instructor.

**ENST 225. Susquehanna Country. 1 Credit.**

**Offered Alternate Fall or Spring; Lecture hours:2,Other:3**

Interdisciplinary studies in environment, philosophy, literature and communities of the Susquehanna region. Crosslisted as ENLS 225 and HUMN 290 and UNIV 241.

**ENST 226. Water Politics and Policies. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3**

Examines the evolution and philosophical foundations of water use as well as the politics surrounding current issues in water use.

**ENST 227. Eco-poetics. 1 Credit.**

**Offered Spring Semester Only; Lecture hours:3**

An exploration of poetry as site-specific ecological practice. Intended for students interested in both Creative Writing and Environmental Studies. Prerequisite: permission of the instructor. Crosslisted as ENCW 240.

**ENST 230. Introduction to Sustainable Design. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3**

The application of basic sustainability principles to multiple design scales, including consumer products, buildings, communities, and landscapes. Emphasis is placed on the campus and its surrounding community as a living laboratory for design experimentation. Open to first year, sophomore, and junior students. Seniors by permission only.

**ENST 234. Human Ecology. 1 Credit.**

**Offered Alternating Spring Semester; Lecture hours:3**

A general science course in human ecology, to demonstrate the ways humans continue to adapt to their environment through biological, cultural, scientific, symbolic, political, and technical means. Crosslisted as GEOG 234.

**ENST 235. Marine Environment. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

Understanding the ecological and physical systems of the ocean, understanding the processes of scientific discovery in the ocean, and exploring the many interactions of humans with ocean systems. Crosslisted as GEOG 235.

**ENST 236. Environmental Ethics. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

A survey of the major theories of environmental ethics, with particular attention to the challenge of developing an ethic commensurate with increasing human power. Crosslisted as RELI 226.

**ENST 240. Sustainable Resource Management. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3**

Focuses on problem-oriented policy analysis of domestic and international environmental issues including ecosystem management, endangered species, protected areas, and community-based conservation.

**ENST 243. Global Environmental History. 1 Credit.**

**Offered Occasionally; Lecture hours:3**

Explores how global forces, including population growth, commercialization, and fossil fuel revolutions, transformed nature and culture across the planet in the 20th century.

**ENST 244. History of Ecology. 1 Credit.****Offered Occasionally; Lecture hours:3**

Explores the development of ecology as a science, with attention to the political ramifications of ecological ideas and their enrollment in environmental management.

**ENST 245. Environmental Policy and Politics. 1 Credit.****Offered Fall Semester Only; Lecture hours:3**

An introduction to understanding the role of political institutions, stakeholders and policy processes (in the U.S. and internationally) in addressing environmental problems. Crosslisted as POLS 291.

**ENST 246. Environmental Activism. 1 Credit.****Offered Spring Semester Only; Lecture hours:3**

This course explores the geographies and practice of environmental activism. Drawing from national and international examples, we examine diverse means and methods of environmental protest.

**ENST 254. Environmental Humanities. 1 Credit.****Offered Either Fall or Spring; Lecture hours:3**

Explores humanistic perspectives on the environment—from history, ethics, literature, religion, and the arts—including how these perspectives complement or unsettle knowledge about nature from the sciences.

**ENST 255. Environmental Injustice. 1 Credit.****Offered Alternating Spring Semester; Lecture hours:3**

Explores environmental injustice in United States and internationally. Includes discussion of: structural racism, class issues, ecological justice, morality and environmental policy, and the environmental justice movement.

**ENST 256. Political Ecology of Mining. 1 Credit.****Offered Spring Semester Only; Lecture hours:3**

Using a political ecology framework, we explore development contradictions associated with mining in India and the United States to meet global energy and mineral demand.

**ENST 261. Culture and Environmental Change in Africa. 1 Credit.****Offered Either Fall or Spring; Lecture hours:3**

This course introduces environmental anthropology as it applies to cultural beliefs and practices in various parts of the world, including Ghana. Cultural anthropology is the study of human diversity, and environmental anthropology is a subdiscipline of cultural anthropology that considers how humans and nature are interwoven. Crosslisted as ANTH 261.

**ENST 262. Introduction to Energy Resources. 1 Credit.****Offered Alternate Fall or Spring; Lecture hours:4**

Introduction for non-engineers to energy concepts including: energy balance; energy demand; technologies to meet demand; and, effects on the environment. Not open to students who have taken ENGR 200, MECH 213, CHEG 200, PHYS 147, PHYS 211. Crosslisted as ENGR 262.

**ENST 286. Imagining Sustainability. 1 Credit.****Offered Either Fall or Spring; Lecture hours:3**

An Integrated Perspectives course covering critical understandings and applications of sustainability across the humanities, the social sciences, and the natural sciences as integrative of environmental, social, economic, and cultural perspectives. Crosslisted as UNIV 286 and RELI 286.

**ENST 291. Bucknell on the Susquehanna Watershed SCI/Natural History. 1 Credit.****Offered Fall Semester Only; Lecture hours:4,Other:4**

The study of watershed processes and regional natural history of the Susquehanna River. Prerequisite: permission of the instructor.

**ENST 292. Bucknell on the Susquehanna Land Use Planning and Social Processes. 1 Credit.****Offered Fall Semester Only; Lecture hours:4,Other:4**

The study of land use planning and social processes involved with watershed management of the Susquehanna River valley region. Prerequisite: permission of the instructor.

**ENST 293. Bucknell on the Susquehanna Human Dimensions and Environmental History. 1 Credit.****Offered Fall Semester Only; Lecture hours:4**

The history of human settlement and culture in the Susquehanna River valley and its relationship to resources and the environment. Prerequisite: permission of the instructor.

**ENST 295. Topics in Environmental Studies. 1 Credit.****Offered Either Fall or Spring; Lecture hours:3; Repeatable**

Selected issues in environmental studies.

**ENST 298. Stream Restoration. 1 Credit.****Offered Alternate Fall or Spring; Lecture hours:3,Lab:4; Repeatable**

Scientific principles to integrate physical and biological approaches to stream restoration in watershed management. Team-taught field course highlights developing restoration plan for Bucknell's Miller Run. Crosslisted as GEOL 298.

**ENST 299. Watershed Systems Science. 1 Credit.**

**Offered Alternate Fall or Spring; Lecture hours:3,Lab:4; Repeatable**

Watersheds regulate water flow and ecosystem health on our landscape. Team-taught field course integrating physical, chemical, and biological processes in watersheds, using the Susquehanna and tributaries. Crosslisted as GEOL 299.

**ENST 2NT. ENST Non-traditional Study. 1-3 Credits.**

**Offered Fall, Spring, Summer; Lecture hours:Varies**

Non-traditional study in Environmental Science. Prerequisite: permission of the instructor.

**ENST 301. Seminar in Environmental History. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3; Repeatable**

A seminar exploration of aspects of human interactions with the natural world over time. Not open to first-year students. Crosslisted as HIST 301.

**ENST 302. Community-Based Research Design. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3,Other:1**

Students will learn quantitative and qualitative research methods related to environmental studies including research design, data collection, and analysis. Prerequisite: junior or senior status. Preference to Environmental Studies majors, others by permission of the instructor.

**ENST 315. Cold Places. 1 Credit.**

**Offered Occasionally; Lecture hours:3**

A seminar exploring the nature and culture of cold places – glaciers, mountain tops, Antarctica, and the Arctic – through art, film, literature, science, and popular media. Crosslisted as ENST 615.

**ENST 319. Directed Research. .5-1 Credits.**

**Offered Both Fall and Spring; Lecture hours:Varies; Repeatable**

Supervised research or thesis work on environmental issues. Prerequisite: permission of the instructor.

**ENST 325. Nature, Wealth and Power. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

A seminar in political ecology that explores the historical, social political and economic dimensions of environmental change in developing regions. First-year students and sophomores by permission only. Prerequisite: permission of the instructor. Crosslisted as GEOG 325.

**ENST 341. The Hidden God of Nature: Christian Eco-poetics from Chaucer to Dostoevsky. 1 Credit.**

**Offered Alternate Fall or Spring; Lecture hours:3**

Explores how great works of European literature related nature and culture in Christian traditions from the 14th to the 19th century. Analyzes their legacy for environmental ethics and cultural creativity as part of sustainability today. Includes non-Christian and secular critiques in considering poetic, rhetorical, symbolic, and spiritual approaches to ecology. Crosslisted as ENLS 341 and ENLS 641.

**ENST 345. Food and the Environment. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3,Other:3.5**

Nothing from the environment is more important than food production, nothing affects the environment more; we'll study both environmental and social circumstances. Laboratory science course. Crosslisted as GEOG 345.

**ENST 347. Sustainable Cities. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3,Other:2**

This team-taught course introduces students to the core concepts of sustainability and how they have been applied to promote sustainability in London, the UK, and Europe. This course is part of the Bucknell in London core course. Prerequisite: permission of the instructor. Crosslisted as CEEG 447.

**ENST 349. Senior Thesis. .5-1 Credits.**

**Offered Both Fall and Spring; Lecture hours:Varies; Repeatable**

Independent thesis work under adviser's supervision. Prerequisite: permission of the instructor.

**ENST 350. Senior Thesis. .5-1 Credits.**

**Offered Both Fall and Spring; Lecture hours:Varies; Repeatable**

Independent thesis work under adviser's supervision. Prerequisite: permission of the instructor.

**ENST 353. Ecosystem Ecology. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3,Recitation:1**

Interactions between organisms and the physical and chemical environment including nutrient cycling and energy flow, biogeochemistry, and temporal and spatial dynamics of ecosystems. Prerequisites: BIOL 208, junior or senior status, and permission of the instructor. Crosslisted as BIOL 353 and BIOL 653.

**ENST 355. Advanced Topics in Environmental Policy. 1 Credit.**

**Offered Fall Semester Only; Lecture hours:3**

Advanced seminar on environmental policy. Focus varies by semester. Consult class schedule for current topic. Prerequisite: permission of the instructor. Crosslisted as POLS 393.

**ENST 393. International Environmental Aid. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

This advanced seminar focuses on an applied and critical examination of international aid for solving environmental problems. It explores topics including: theories of international relations, environmental politics, and development; how international organizations, states, and non-governmental actors relate, and problem-solving case studies. Prerequisite: permission of the instructor. Crosslisted as POLS 393.

**ENST 3NT. ENST Non-traditional Study. 1-3 Credits.**

**Offered Fall, Spring, Summer; Lecture hours:Varies**

Non-traditional study in Environmental Science. Prerequisite: permission of the instructor.

**ENST 411. Environmental Community Projects. 1 Credit.**

**Offered Either Fall or Spring; Lecture hours:3**

Community-based "clinic" course on environmental problems or projects for local stakeholders, based on integrative, interdisciplinary research and design. Preference to senior ENST, ENSC, and GEOG majors.