



### Energy, Environment and Society

AGEC 300	HIST 435	POLI 448
AGEN 216	MATH 111	SOCI 200
BIOL 100	MATH 112	SOCI 300
BUAD 361	PHIL 266	UNST 205
CHEM 100/110	PHYS 105	UNST 211
EASC 201	POLI 250	UNST 212
GEOG 200	POLI 410	UNST 221
GEOG 322	POLI 415	UNST 229

Courses in this cluster will examine the role of energy in both local and world economies—how energy issues often intersect and collide with political power, social relationships, and economic development. In addition, this cluster will explore how decisions surrounding energy and environmental issues affect social justice within communities, across the country, and around the world.

### COURSES

#### **UNST 205. The Impact of Energy and the Environment on Development in Non-Industrialized Countries**

This course examines issues and challenges that result from the formation of energy and environmental practices

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and policies of non-industrialized countries. Students use historical perspective to explore why non-industrialized nations are energy dependent.

**UNST 211. Case Studies in Environmental Issues**

This course utilizes case studies to gain an understanding of the roles environmental law, journalism/communications, economics, and science/engineering play in environmental issues.

**UNST 212. Contemporary Issues in Energy Uses and Sources**

This course is designed to provide integrative experiences to students using contemporary energy issues as an underlying theme. It will cover the economic importance of the energy sector, the production and use of different types of energy, and their impact on the environment and health.

**UNST 221. Thematic Writing and Speaking: Technology and Society**

This course is designed to improve students' abilities to write, speak, and think critically about important issues in the contemporary world by focusing on the rhetoric of science, technology and progress. Students examine rhetoric as represented in fiction and nonfiction: essays, short stories, drama, poetry, novels, film, popular culture (including popular science writing and journalism), and speeches.

**UNST 229. Contemporary Issues in Nuclear Energy**

This course is designed to present a current understanding of nuclear energy. Different reactor designs, economics of nuclear energy, and management of nuclear energy will be reviewed. Nuclear power will be compared to other alternative energy sources. Emphasis will be placed upon regulations, environmental issues, health issues, and security and safety concerns. Nuclear power and options for the future will be examined.

**AGEC 300. Principles of Rural Sociology**

Social systems, cultural patterns, and institutional arrangements of people in rural environments will be examined. An interpretation of the structure, functioning and change in rural social systems will also be covered.

**AGEN 216. Geographic Information Systems in Engineering and Natural Resources**

This course will introduce the student to a Geographic Information System (GIS) for database analysis using ARC/INFO software. Management and techniques for data input, storage, retrieval, analysis, and display of spatial and tabular data would be covered in a computerized laboratory setting. Global Positioning Systems (GPS) will also be introduced.

**BIO 100. Biological Science**

This is a general education course that stresses the objectives presented under the general education program of the University. This course stresses central concepts in biology including; basic chemical and physical phenomena, biochemistry, cell form and function, genetics, evolution, and multicellular organization. The laboratory will examine major biological concepts. Biological Science is not open to Biology majors. (F:S:SS)

**BUAD 361. Legal Environment of Business**

An introduction to the legal system and the environment in which business and government operate. An examination of the creation of rights, liabilities, and regulations under the law as expressions of social and economic forces. Substantive coverage includes constitutional law, contracts, agency, corporations, partnerships, product liability, regulation of trade practices and credit, administrative law, antitrust, labor law, and selected social responsibility issues.

**CHEM 100/110. Physical Science/Physical Science Laboratory**

This is a one semester introductory course designed to make clear the nature of science as an enterprise and illustrate by numerous examples really proceeds. Learning experiences are constructed so that they closely approximate real life situations where one has to search for clues a variety of sources. This course is not open to students who have received credit for CHEM 101, 102, 104, 105, 106, or 107. **Physical Science Laboratory**  
 This is a laboratory course designed to bring students into working contact with the essential aspects of scientific experiences. In this course the student develops concrete ideas about the operational meaning of the scientific method and problem solving. Corequisite: CHEM 100. This course is not open to students who have received credit for CHEM 114, 115, 116, or 117.

**EASC 201. The Earth: Man's Environment**

This course is a study of the earth's system as related to atmosphere, biosphere, hydrosphere and lithosphere. The interrelationship of humans with the earth's environment as revealed in the modification of natural processes will also be examined.

**GEOG-200. Principles of Geography**

This course surveys the physical characteristics of the earth's surface including landforms, climates, vegetation and soils. The emphasis is on global variations and interactions among these physical characteristics.

**GEOG-322. Economic Geography**

This course is a geographical survey of major economic activity with emphasis on global patterns of production and exchange of commodities that are strategic in sustaining the world's population and modern economic development.

**HIST-435. Global History Since 1945**

At the end of World War II, the world political order was fundamentally restructured. The old European empires soon came to an end and the world was divided into two dominant blocks. This course explores the coming into being of the bipolar world order of the postwar period and its eventual demise. Special attention will be given to such issues as global vs. local cultures and social formations, development vs. underdevelopment, economic inequalities between the northern and southern hemispheres of the globe, wars of national liberation, ethnicity and nationalism, technological change and the environmental impact of technology, nation states vs. multi-national corporations, and the transformation of global capitalism. The final section of the course will deal with the definitions of postmodernity and their relevance for analyzing the developments in the postwar world. Prerequisite: HIST 101 or permission of the instructor.

**MATH 111. College Algebra and Trigonometry**

This course is a review of basic algebra; first and second degree equations; polynomial and rational functions-systems of equations-inequalities, right triangle trigonometry; and trigonometric identities and equations. Prerequisites: Mathematics 099 or two units of high school algebra, one unit of high school geometry and a satisfactory score on the mathematical portion of the Scholastic Aptitude Test.

**MATH 112. Calculus for Non-Mathematics Majors**

This course includes a brief treatment of basic concepts of differential and integral calculus with applications to business, economics, social and behavioral sciences; polynomial, rational, exponential and logarithmic functions. Prerequisite: MATH 102, 110, or 111.

**PHIL 266. Contemporary Moral Problems**

This course begins with an examination of various ethical theories and then applies these theories to address moral challenges faced by today's society. Topics include the environment, abortion, treatment of animals, drug use, pornography, hate speech, euthanasia, famine relief, affirmative action, and the death penalty.

**PHYS 105. Physics for Non-Scientists**

This course is intended for non-science students. It is a qualitative introduction to topics at the forefront of modern physics, with an emphasis on conceptual understanding. Mathematics use is reduced to a minimum. The course stresses the major role physics plays in our everyday life and aims at helping students evaluate the importance of the new scientific developments and their technological and socio-economical implications. It covers a wide variety of topics such as the building blocks of matter, the evolution of our universe, superconductivity and superfluidity, MRI and medical imaging techniques, the physics of lasers, the physics of semiconductors and transistors, nanoscience and nanotechnology, modern and future energy sources and their effects on the environment.

**POLI 250. Introduction to Public Policy**

This course is designed to provide the student with basic knowledge of public policy. Students will survey the approaches and methods of policy studies, contemporary policy issues, and future considerations of public policies.

**POLI 410. Public Policy and Technology**

This course is designed primarily for students in sciences and engineering; however, it does not exclude students in other disciplines, especially business and economics. Students will study the social, economic, human, and environmental impact of technological development. The role of scientists and technologists in selected policy choices will be examined.

**POLI 415. Environmental Policy**

This course examines major environmental policies dealing with air pollution, water pollution, and solid wastes. Attention will be given to controversies in policy formulation, institutional arrangements for policy implementation, and the socio-economic and ecological impacts of these policies.

**POLI 448. Politics of Transportation**

This course includes an analysis of the political roots of various transportation problems, such as highway location issues, mass transit issues, and the interest group struggle of transportation innovation. The working mechanisms of federal, state and local transportation related units will also be considered. Case studies of local, regional and national issues will be included. Prerequisite: Junior standing.

**SOCI 200. Introduction to Anthropology**

This course includes an analysis and comparison of primitive cultures and further comparisons with modern cultures.

**SOCI 300. Topics in Cultural Anthropology**

Selected topics in language, culture, mythology, and religion designed to acquaint students with analyzing cultural patterning in this and other cultures will be studied.

*\*Use of these courses as theme-cluster electives in subsequent semesters is not guaranteed.*

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