

Anthropology

<http://www.ucsd.edu/catalog/0506/courses/ANTH.html>

ANBI 132. Conservation and the Human Predicament (4) (Same as BIEB 176.) Interdisciplinary discussion of the human predicament, biodiversity crisis, and importance of biological conservation. Examines issues from biological, cultural, historical, economic, social, political, and ethical perspectives emphasizing new approaches and new techniques for safeguarding the future of humans and other biosphere inhabitants. *Prerequisite: upper-division standing, ANLD 2 or consent of instructor.*

ANGN 108. Archaeology of the UCSD Campus (4) Our campus houses some of the earliest human settlements in North America. This course reviews the archaeology, climate, and environment of the sites and outlines research aimed at understanding the lives of these early peoples. *Prerequisite: upper-division standing. Permission of instructors.*

ANGN 160. Nature, Culture, and Environmentalism (4) Course examines theories concerning the relation of nature and culture. Particular attention is paid to explanations of differing ways cultures conceptualize nature. Along with examples from non-western societies, the course examines the western environmental ideas embedded in contemporary environmentalism.

ANGN 182. Origins of Agriculture and Sedentism (4) Varying theoretical models and available archaeological evidence are examined to illuminate the socio- evolutionary transition from nomadic hunter-gathering groups to fully sedentary agricultural societies in the Old and New World. (Archaeology core sequence course.) *Prerequisite: ANLD 3 is recommended.*

Biology

<http://www.ucsd.edu/catalog/0506/courses/BIOL.html>

BILD 3. Organismic and Evolutionary Biology (4) The first principles of evolutionary theory, classification, ecology, and behavior; a phylogenetic synopsis of the major groups of organisms from viruses to primates. Three hours of lecture and one hour of lab. *Prerequisite: none. Note: E.B.E. majors should complete this course during their first year at UCSD. (F,W,S)*

BIEB 121. Ecology Laboratory (6) A laboratory course to familiarize students with ecological problem solving and methods. Sections will use the Macintosh computer and also perform outdoor field work. Two hours of lecture and eight hours of laboratory each week. In addition to the formal lab hours, there will be at least nine hours in which students will be required to work in the class laboratory to complete experiments and prepare for presentations. *Prerequisites: BIEB 100.*

BIEB 130. Introductory Marine Ecology (4) An introduction to the marine environment—its physics and chemistry, the organisms which live there, and the ecological processes affecting the distributions and abundances of these organisms. *Prerequisites: BILD 3, high school physics, and chemistry.*

BIEB 131. Marine Invertebrate Ecology Laboratory (6) A laboratory course introducing students to marine ecology. Students will participate in outdoor fieldwork and work in the laboratory gathering and analyzing ecological data. We will focus on ecological communities in estuary, sandy beach, and rocky intertidal habitats. Two hours of lecture and eight hours of laboratory each week. In addition to the formal lab hours, there will be at least nine hours in which students will be required to work in the class laboratory to complete experiments and prepare for presentations. *Prerequisite: BILD 3; BIEB 100.* (W)

BIEB 132. Introduction to Marine Biology (4) Overview of marine organisms and their adaptations to sea life. Selected examples of physiological, behavioral, and evolutionary adaptations in response to the unique challenges of a maritime environment. *Prerequisite: BILD 3.* (F)

BIEB 134. Introduction to Biological Oceanography (4) Basis for understanding the ecology of marine communities. The approach is process-oriented, focusing on major functional groups of organisms, their food-web interactions and community responses to environmental forcing, and contemporary issues in human and climate influences. *Prerequisite: upper-division standing; BILD 3 is recommended.* (W)

BIEB 140. Biodiversity (4) An introduction to the patterns of geographic distribution and natural history of plants and animals living in terrestrial and marine ecosystems. We will explore: ecological and evolutionary processes responsible for generating and maintaining biological diversity; and the nature of extinction both in past and present ecosystem. *Prerequisite: BILD 3.* (S)

BIEB 165. Behavioral Ecology Laboratory (6) This course will deal with quantitative methods for the study of animal social behaviors. Topics include spatial patterns, mating systems, and cooperation. The course includes both lab exercises and field trips. Two hours of lecture and eight hours of laboratory each week. In addition to the formal lab hours, there will be at least nine hours in which students will be required to work in the class laboratory to complete experiments and prepare for presentations. *Prerequisites: BIEB 100 and BIEB 164. (BIEB 164 may be taken concurrently.)* (S)

BIEB 166. Animal Behavior and Communication (4) An integrated approach to animal behavior focusing on mechanisms of acoustic, visual, and olfactory communication. Course covers ethology and the genetics and neurobiology of behavior; orientation and navigation; and signal origins, properties, design, and evolution. *Prerequisite: BILD 3 recommended, but not required; Physics 1A or 2A, or equivalent recommended, but not required.* (S)

BIEB 176. Conservation and the Human Predicament (4) (Cross-listed with ANTH/BIO 132; however, biology majors must take the course as Biology 176.) An interdisciplinary discussion of the human predicament, the biodiversity crisis, and the importance of biological and environmental conservation in sustaining future societies. We explore the consequences of habitat destruction and species extinctions on the biosphere and human welfare. Three hours of lecture and one hour of discussion. *Prerequisite: upper-division standing and BILD 3 or consent of instructor.*

BIEB 178. Principles of Conservation Ecology (4) Biodiversity will ultimately be preserved in “islands” of natural habitat. The principles of community ecology, island biogeography, and metropopulation dynamics will underlay the management decisions regarding the number, size, and locations of such reserves. Case studies are emphasized. *Prerequisite: BIEB 100.*

BIEB 179. Conservation Biology Laboratory (6) Students will utilize, modify, and create computer software to solve conservation biology management problems. Topics included are pedigree analysis, stochastic population dynamics, community structure, and island biogeography. Two hours of lecture and eight hours of laboratory each week. In addition to the formal lab hours, there will be at least seven hours in which students will be required to work in the class laboratory to complete experiments and prepare for presentations. *Prerequisite: BIEB 178 or BIEB 180 (may be taken concurrently).*

Chemistry

<http://www.ucsd.edu/catalog/0506/courses/CHEM.html>

15. Chemistry of the Universe (4) This is a one-quarter, nonmathematical chemistry course for nonscience majors covering the origin of the universe, the elements, and the formation of the solar system. The evolution of the Earth’s atmosphere, hydrosphere, geosphere, and biosphere will be covered, as well as contemporary problems in environmental chemistry. Cannot be taken for credit after any other chemistry course.

149A. Environmental Chemistry (4) The chemical basis of air and water pollution, chlorofluorocarbons and the ozone hole, the environmental impact of radioactive waste disposal, mineral resource usage, and nuclear energy. *Prerequisites: Chem. 6C or 6CH or equivalent. (F)*

149B. Environmental Chemistry (4) Agricultural productivity, biological impact on the environment, deforestation, environmental disasters (fires, nuclear winter, and volcanoes), and organic waste handling. *Prerequisite: Chem. 149A. (W)*

173. Atmospheric Chemistry (4) Chemical principles applied to the study of atmospheres. Atmospheric photochemistry, radical reactions, chemical lifetime determinations, acid rain, greenhouse effects, ozone cycle, and evolution are discussed. *Prerequisites: Chem. 6A-6C or 6AH, 6BH, and 6 CH, or equivalent. (S)*

Communication

<http://www.ucsd.edu/catalog/0506/courses/COMM.html>

COCU 148. Communication and the Environment (4) Survey of the communication practices found in environment controversies. The sociological aspects of environmental issues will provide background for the investigation of environmental disputes in particular contested areas, such as scientific institutions, communities, work-places, governments, popular culture, and the media. *Prerequisite: COCU 100 or consent of instructor.*

Earth Sciences

<http://www.ucsd.edu/catalog/0506/courses/ERTH.html>

ERTH 10. The Earth (4) A basic introduction to geology for students with little previous science background. The course stresses understanding of the concepts of the structure of the Earth and the processes which have formed it and continue to modify it. The course emphasizes material which every educated citizen should know for appreciation and enjoyment of the world around us, for understanding geological events as reported in the news, and for participating in making intelligent decisions regarding the future of our environment. Three-hour lecture plus optional local field trips. *Prerequisite: none.* (W)

ERTH 12. History of the Earth and Evolution (4) Evolution of the Earth from its origin in the early solar system to formation of continents and ocean basins, and how the planet became habitable. It examines the geologic record of evolution, extinction, plate tectonics, and climate changes through time. Three-hour lecture. *Prerequisite: none.* (S)

ERTH 15. Natural Disasters An introduction to environmental perils and their impact on everyday life. Geological and meteorological processes are explored, including earthquakes, volcanic activity, large storms, global climate change, mass extinctions throughout Earth's history, and human activity that causes and prevents natural disasters. *Prerequisite: none.* (F)

ERTH 20. The Atmosphere (4) Descriptive introduction to meteorology and climate studies. Topics include global and continental wind and precipitation patterns, weather forecasting, present climate and past climate changes (including droughts, El Niño events), man-made modification of climate, including CO₂ and other "greenhouse" gases effects, ozone destruction, "little ice ages," acid rain. Three-hour lecture. *Prerequisites: some high school physics and chemistry background recommended.* (W)

ERTH 30. The Oceans (4) Presents modern ideas and descriptions of the physical, chemical, biological, and geological aspects of oceanography, and considers the interactions between these aspects. Intended for students interested in the oceans, but who do not necessarily intend to become professional scientists. Three-hour lecture, one-hour discussion. *Prerequisite: some background in high school chemistry recommended.* (F)

ERTH 35. Water (4) This course will examine the properties of water that make it unique and vital to living things. Origin of water on Earth and neighboring planets will be explored. Socially relevant issues concerning water use and contamination will be covered. *Prerequisite: none.* (S)

ERTH 110. Introduction to GIS for Earth and Environmental Scientists (4) A hands-on introduction to geological and environmental applications of geographic information systems (GIS). Students acquire data through field surveys and digitization, design and construct GIS using ESRI's ArcGIS software, analyze spatial data, and present the finished products as maps. *Prerequisites: EARTH 50 or ESYS 102 or the equivalent, or consent of instructor.* (S)

ERTH 150. Environmental Perils (4) An advanced field-oriented course for engineering and science students stressing the geologic basis for environmental perils such as earthquakes, erosion flooding, and waste disposal. Two one-hour lectures and a two-hour lab/field trip each week. One Saturday field trip. *Prerequisites: Math. 20A-B-C-D, sequence and Physics 2A-B-C sequence or equivalent.* Not offered 2005–2006. (S)

Department of Economics

<http://www.ucsd.edu/catalog/0506/courses/ECON.html>

I31. Economics of the Environment (4) Environmental issues from an economic perspective. Relation of the environment to economic growth. Management of natural resources, such as forest and fresh water. Policies on air, water, and toxic waste pollution. International issues such as ozone depletion and sustainable development. *Prerequisites: Economics 1A-B or 1-2.*

I32. Energy Economics (4) Energy from an economic perspective. Fuel cycles for coal, hydro, nuclear, oil, and solar energy. Emphasis on efficiency and control of pollution. Comparison of energy use across sectors and across countries. Global warming. Role of energy in the international economy. *Prerequisites: Economics 1A-B or 1-2.*

I45. Economics of Ocean Resources (4) Economic issues associated with oceans. Economics of managing renewable resources in the oceans, with an emphasis on fisheries, economics of conservation and biodiversity preservation for living marine resources, with an emphasis on whales, dolphins, sea-turtles, and coral reefs. *Prerequisites: Economics 1A-B or 1-2-3.*

Environmental Studies Program

<http://www.ucsd.edu/catalog/0506/courses/ENVR.html>

30. Environmental Issues: Natural Sciences (4) Examines global and regional environmental issues. The approach is to consider the scientific basis for policy options. Simple principles of chemistry and biology are introduced. The scope of problems include: air and water pollution, climate modification, solid-waste disposal, hazardous-waste treatment, and environmental impact assessment. *Prerequisite: none.*

I02. Selected Topics in Environmental Studies (4) An interdisciplinary course focusing on one of a variety of topics related to environmental studies such as environmental policy and politics, foreign study in environmental problems, environmental history, nature writers, ethics and the environment. May be repeated for credit as topics vary. *Prerequisite: upper-division standing or consent of instructor.*

I10. Environmental Law (4) Explores environmental policy in the United States and the ways in which it is reflected in law. The social and political issues addressed include environmental justice and environmental racism, as well as the role of government in implementing environmental law. *Prerequisite: upper-division standing or consent of instructor.*

Environmental Systems Program

<http://www.ucsd.edu/catalog/0506/courses/ESYS.html>

ESYS 101. The Living Earth (4) This course will survey the basic biochemical and physiological processes governing the relationship between organisms and their environments. Fundamentals of molecular biology, enzyme reactions, photosynthesis, and central metabolic processes, mechanisms underlying homeostasis at cellular and organismal levels will be discussed with a view toward understanding the adaptations and sensitivity of biological systems to environmental perturbations. *Prerequisite: none.*

ESYS 103. The Human Earth (4) This course explores the impacts of human, social, economic, and industrial activity on the environment. It highlights the central roles in ensuring sustainable development played by market forces, technological innovation, and governmental regulation on local, national, and global scales. *Prerequisites: grade of C- or better in Math. 20B or Math. 10A-C; Physics 2B or Physics A-C; Chemistry 6B or by consent of instructor. In addition, Esys majors, must take Esys 101 and 102 or permission of instructor.* (S)

ESYS 120. Science and Environmental Writing (4) Course designed to improve the written communication of science majors through frequent writing assignments that develop the practical skills needed to communicate science to lay audiences. Topics include news writing, news releases, grant writing, broadcast script writing, and editorial writing. *Prerequisites: upper-division standing in science or mathematics major and completion of college composition requirement (or consent of instructor).* (W)

ESYS 150. Environmental Perils (4) An advanced field-oriented course for engineering and science students stressing the geologic basis for environmental perils such as earthquakes, erosion, flooding, and waste disposal. Two one-hour lectures, and a two-hour lab/field trip each week. *Prerequisites: Math. 10 A-B-C sequence and Physics 1A,AL; 1B,BL; 1C, ICL sequence or equivalent.* (S)

Ethnic Studies

<http://www.ucsd.edu/catalog/0506/courses/ETHN.html>

I03. Environmental Racism (4) This course will examine the concept of environmental racism, the empirical evidence of its widespread existence, and the efforts by government, residents, workers, and activists to combat it. We will examine those forces that create environmental injustices in order to understand its causes as well as its consequences. Students are expected to learn and apply several concepts and social scientific theories to the course material.

Department of History

<http://www.ucsd.edu/catalog/0506/courses/HIST.html>

HISC 105. History of Environmentalism (4) History of human effects on the natural environment, and with environmentalist interpretations of the history of science.

HIUS 137. The Built Environment in the Twentieth Century An examination of urban and regional planning as well as piecemeal change in the built environment. Topics include urban and suburban housing, work environments, public spaces, transportation and utility infrastructures, utopianism. *Prerequisite: consent of instructor.*

HIUS 154. Western Environmental History (4) This course examines human interaction with the western American environment and explores the distinction between the objective environmental understanding of science and the subjective views of history and historians. The course will also analyze the most compelling environmental issues in the contemporary West.

Graduate School of International Relations and Pacific Studies

<http://www.ucsd.edu/catalog/0506/courses/IRPS.html>

IRGN 455. Economic Theories of Regional Integration (4) The first part of the course covers the basic economics of trading blocs and proceeds to more complicated topics in the theory of preferential trading arrangements, customs unions, and currency unions. In the second part we use the formal theory to compare economic integration in different parts of the world. *Prerequisites: IRCO 401 and 403 or consent of instructor.*

IRGN 458. International Environmental Policy and Politics (4) This course analyzes multilateral environmental agreements and negotiating positions of key countries on climate change, biodiversity conservation, sustainable development, and other subjects. It explores the challenges countries face to balance economic development objectives with global environmental concerns.

Mechanical and Aerospace Engineering

<http://www.ucsd.edu/catalog/0506/courses/MAE.html>

MAE 118A. Energy: Non-Nuclear Energy Technologies (4) Oil recovery from tar sands and oil shale. Coal production, gasification, liquefaction. The hydrogen economy. Energy storage systems. Techniques for direct energy conversion. Solar energy utilization. Hydroelectric power generation. Hydrothermal energy. Geothermal energy from hot rocks. Electrical power production, transmission, and distribution. *Prerequisite: consent of instructor.*

Philosophy Department

<http://www.ucsd.edu/catalog/0506/courses/PHIL.html>

I48. Philosophy and the Environment (4) Investigation of ethical and epistemological questions concerning our relationship to the environment. Topics may include the value of nature, biodiversity, policy and science, and responsibility to future generations. *Prerequisite: upper-division standing or consent of instructor.*

I64. Technology and Human Values (4) Philosophical issues involved in the development of modern science, the growth of technology, and control of the natural environment. The interaction of science and technology with human nature and political and moral ideals. *Prerequisite: upper-division standing or consent of instructor.*

Physics

<http://www.ucsd.edu/catalog/0506/courses/PHYS.html>

I2. Energy and the Environment (4) A course covering energy fundamentals, energy use in an industrial society and the impact of large-scale energy consumption. It addresses topics on fossil fuel, heat engines, solar energy, nuclear energy, energy conservation, transportation, air pollution and global effects. Concepts and quantitative analysis. (S)

Political Science

<http://www.ucsd.edu/catalog/0506/courses/POLI.html>

I62. Environmental Policy (4) This course will explore contemporary environmental issues such as global warming, endangered species, and land use. Students will be asked to analyze various policy options and to write case analyses. Policies may be debated in class.

Science, Technology and Public Affairs

<http://www.ucsd.edu/catalog/0506/courses/STPA.html>

35. Society and the Sea (4) Introduction to the oceans and their relationship to humankind. Selected topics include ocean-related science, engineering, research, economics, and international relations (emphasizing countries of the Pacific Rim); living and nonliving resources; coastal zone management; military and social aspects; and the sea in weather and climate. *Prerequisite: none.* (F)

Urban Studies and Planning

<http://www.ucsd.edu/catalog/0506/courses/USP.html>

2. Urban World System (4) Examines cities and the environment in a global context. Emphasizes how the world's economy and the earth's ecology are increasingly interdependent. Focuses on biophysical and ethicosocial concerns rooted in the contemporary division of labor among cities, Third World industrialization, and the post-industrial transformation of U.S. cities.

I24. Land Use Planning (4) Introduction to land use planning in the United States: zoning and subdivision, regulation, growth management, farmland preservation, environmental protection, and comprehensive planning. *Prerequisite: upper-division standing or consent of instructor.*

I44. Environmental and Preventive Health Issues (4) This course will analyze needs of populations, highlighting current major public health problems such as chronic and communicable diseases, environmental hazards of diseases, psychiatric problems and additional diseases, new social mores affecting health maintenance, consumer health awareness and health practices, special needs of economically and socially disadvantaged populations. The focus is on selected areas of public and environmental health, namely: epidemiology, preventive services in family health, communicable and chronic disease control, and occupational health. *Prerequisite: upper-division standing or consent of instructor. (Offered fall quarter.)*