

The Bachelor of Science degree with a mathematics requirement and primary majors in natural sciences and history is designed to provide students with substantive academic content in the discipline of their choice. The program prepares students for teaching opportunities in elementary and secondary education after completion of additional methodology courses required for teacher certification in all states. The degree also provides an academic foundation for students interested in pursuing further graduate education necessary for postsecondary teaching positions in natural science or history at most colleges and universities. Focused studies are designed to provide an interdisciplinary component that will increase the student's breadth of learning. The program will provide workers in business and government, as well as education, with learning that promotes critical thinking, information utilization, collaboration, communication, and analytical skills essential to effective and efficient work productivity. The major in Environmental Science is designed to provide students with a comprehensive understanding of the relationship between scientific principles and the environment. Topics will include biological and ecological fundamentals, the environment and society, environmental management and law, global health, risk assessment, ethics, and technology.

Lower Division Requirements

The Bachelor of Science in Environmental Science requires a minimum of 120 credits, which may come from a combination of required and elective courses.

BIO101 Principles Of Biology

This course is designed to introduce biology at an entry level by examining the hierarchy that ranges from the fundamentals of cell biology to the physiology of organisms, and the interactions among those organisms in their environment. The topics in this course include cell biology, genetics, molecular biology, evolution, physiology, and ecology. (3 credits)

BIO280 Conservation Biology

This course will examine the concepts and issues related to the conservation of biodiversity. Topics will include the impact of society on plants and animals, aquatic and terrestrial ecosystems, extinction, and genetic diversity. (3 credits)

CHM150 General Chemistry I

This course provides students with an in-depth knowledge of the principles and applications of chemistry. Topics include chemical nomenclature, atomic theory, stoichiometry, periodicity, chemical bonding, thermochemistry, gas laws, and properties of solids and liquids. Students may apply these concepts using practical examples, facilitated discussions, and the experiments conducted through hands-on labs. This course is the first half of the general chemistry sequence, which is completed in CHM/151: General Chemistry II. (4 credits)

CHM151 General Chemistry II

This course continues the examination of principles and applications of chemistry that was begun in CHM/150: General Chemistry I. Topics include properties of solutions, acids and bases, kinetics, equilibrium, thermodynamics, oxidation–reduction, ionic and redox equations, and electrochemistry. Students apply these concepts using practical examples, facilitated discussions, and experiments conducted through hands-on labs. (4 credits)

ENV100 Principles Of Environmental Science

This course will provide students with the scientific principles, concepts, and methodologies that are required to identify and analyze risks associated with environmental problems, and examine alternative solutions for resolving or preventing these problems. (3 credits)

GLG220 Physical Geology

This course will introduce the key concepts of geology by examining the Earth and the processes that take place within it. Topics will include historical geology, rocks and minerals, plate tectonics, igneous activity, mass wasting, weathering and erosion systems. (3 credits)

SCI256 People, Science And The Environment

This in-depth environmental science course examines how people use science to understand how they relate to the environment. The course explores relationships between people and ecosystems and the science behind how ecosystems work. It reviews the historical development of the environmental movement, interactions between humans and natural ecosystems, and more specifically, the role of a growing population and associated pressures on natural resources. This course further examines how economics, natural systems, and conservation are interrelated. The many forms of pollution as well as types of energy resources are addressed. This course challenges students to consider the impact of lifestyle choices on environmental sustainability. (3 credits)

This program leads to a baccalaureate degree in liberal arts. It is eligible for federal financial aid but not subject to the gainful employment requirements.

BIO204 Plant Physiology

This course will examine the key concepts of plant physiology. Topics will include the structure and function of plants, growth and development, water transport, mineral nutrition, photosynthesis, and plant metabolism. (3 credits)

BIO240 General Biology

This course will provide an in-depth look into the principles of biology. Topics will include molecular biology, cellular structure and function, genetics, evolution, organisms, and populations. (3 credits)

GEO180 Physical Geography

This course introduces students to the principles of physical geography. Students examine the processes of Earth's physical environment as well as the human-environment interaction. Topics include plate tectonics, the rock cycle, landscape building, water resources, the relationship between the Earth and Sun, the elements of weather and climate, vegetation and soils, types and uses of maps, and human interaction with the environment. (3 credits)

GLG240 Environmental Geology

This course introduces students to the study of environmental geology. Students examine the connection between geological processes and resource management. Topics include Earth's internal structure and processes, hydrological and geological resources, geomorphology, natural hazards, waste management, policies and regulations, and the impact of human activity on natural resources. (3 credits)

SCI209 Oceanography

This course examines the linkages between the evolution of earth and water masses. Students will focus on the physical, chemical, biological and geological aspects of the ocean processes (3 credits)

Upper Division Requirements

The Bachelor of Science in Environmental Science requires a minimum of 120 credits, which may come from a combination of required and elective courses.

BIO315 Ecology And Evolution

This course provides the fundamental principles of ecology and evolution. Students will focus on populations and communities, adaptation, and other factors that affect organisms. (3 credits)

ECO370 Environmental Economics

This course applies the theoretical economics tools to environmental issues. Special emphasis will be devoted to analyzing the role of public policy regarding the economy and the environment. (3 credits)

ENV320 Environmental Law

This course explores the administrative regulations and policies that are requisite to environmental protection. Federal, state, and local policies will be examined. (3 credits)

ENV410 Environmental Toxicology

The purpose of this course is to provide the fundamental knowledge of the effects of environmental chemicals on living systems, and the toxic responses of the human and plant systems. Students will discuss risk, ethics, and social responsibility with regard to environmental toxicology. (3 credits)

ENV420 Environmental Risk Assessment

This course provides an overview of the basic concepts of human and ecological risk assessment. Students evaluate various components of risk assessment, including human health, environmental, occupational, ecological, and risk management. Significant case studies are used to illustrate the assessment process. (3 credits)

SCI362 Environmental Issues And Ethics

This course applies scientific, philosophical, economic, and ethical principles to current and future environmental issues. Students will analyze the cumulative impact of human activities on global ecosystems, as well as responsibilities to the natural world, in terms of the complex interrelationships humans have with their environment. (3 credits)

SUS300 Environmental Sustainability

Students will be presented with a broad treatment of the preservation and efficient use of resources as well as methods of reversing current resource consumption. Topics will include sustainable practices, population growth, hydrologic cycle, water treatment processes, waste management, alternative energies, and energy efficient home or building design. (3 credits)

BIO325 Economic Botany

This course focuses on the economic uses of plants from international, historical, environmental and contemporary perspectives. Economic uses include plant textiles, spices, herbs, perfumes, oils, waxes, beer, coffee, tea, wine, chocolate, marijuana, psychedelics, fuel algae, and fungi. (3 credits)

ENV310 Environmental Management

This course examines environmental problems from a local, national, and international perspective. Federal legislation will be reviewed on air pollution and water quality. Students will be introduced to control techniques for treating air and water, and the emerging environmental issues such as global climate changes, bioterrorism, organic pollutants, and industrial ecology. (3 credits)

ENV315 Global Change

This course will examine the impact of human activity on the environment. Students will examine a variety of environmental issues influenced by human activity, including the development and impact of global climate change on Earth. (3 credits)

ENV330 Global Environmental Health

This course explores the impact of industrialization and development on the global environment. Students will be provided an overview of scientific and policy issues of global environmental health. (3 credits)

ENV340 Energy And The Environment

This course will introduce topics covering a wide variety of alternative energy sources, the need for renewable energy, as well as the problems associated with them. Energy sources will include oil, coal, natural gas, hydroelectric, nuclear, wind, solar, geothermal, tidal, and biofuels. (3 credits)

ENV350 Water And Wastewater Treatment Technology

This course will introduce students to water and wastewater treatment technology. Topics will include drinking-water treatment and distribution, wastewater collection and treatment, and water reuse. (3 credits)

ENV400 Watershed Hydrology

This course will introduce students to the water cycle and freshwater management. Topics will include examination of bodies of water, geology and soil properties, the water cycle, groundwater flow, pollution effects, and government involvement. (3 credits)

ENV430 Environmental Technology

This course presents students with the current and emerging technologies that are available for the management of the environment. Environmental factors will be examined for the proper selection and application of these technologies. (3 credits)

ENV431 Public Policy Analysis

This course will examine the fundamentals of public policy analysis to the environment. Students will explore the management of public policy issues related to land use and urbanization, ecosystem preservation, global analysis, and policy making. (3 credits)