

ENVIRONMENTAL STUDIES

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PROGRAMS AVAILABLE

BACHELOR OF SCIENCE IN ENVIRONMENTAL STUDIES

ENVIRONMENTAL STUDIES MINOR

EARTH SCIENCE MINOR

ENVIRONMENTAL STUDIES MAJOR PROGRAM

The environmental studies major at MCLA is a multidisciplinary program. Environmental studies majors study human activities and their effects on natural systems through coursework, fieldwork, research and internships. The complexity and interdisciplinary nature of environmental problems requires that students be provided with a solid foundation in the natural sciences, as well as the social sciences. Environmental studies students therefore take courses in departments and disciplines including biology, chemistry, geology, economics, and sociology. Partnerships with local environmental organizations and agencies provide students with opportunities to gain experience investigating and developing solutions to environmental problems of regional significance. Students graduating with a degree in Environmental Studies will be able to:

- Use classical skills such as critical thinking, research, speaking and writing as they apply to contemporary environmental issues;
- Use particular technologies necessary for modern professionals in the sciences, social sciences, and humanities;
- Quickly assess environmental problems and work effectively in a team to suggest realistic solutions;

- Enter either the professional world or graduate school with broad understanding, specific skills and significant experience in environmental studies.

Foundation Courses

BIOL	150	Introduction to Biology	4 cr
CHEM	150	Introduction to Chemistry I	4 cr
CHEM	152	Introduction to Chemistry II	4 cr
ENVI	150-H	Honors Environmental Systems: Science & Management	4 cr
ENVI	152-H	Honors Environmental Resources: Science & Management	4 cr
ENVI	260	Green Living Seminar	2 cr
ENVI	310	Politics & Environmental Policy	3 cr
ENVI	320	Methods in Environmental Research	4 cr
ENVI	325	Geographic Information Systems	4 cr
ENVI	340	Environmental Law	3 cr
ENVI	401	Independent Research	3 cr
OR ENVI	540	Internship	3 cr
ERTH	151	Introduction to Physical Geography	4 cr
OR EARTH	152	Introduction to Physical Geology	
OR EARTH	245	Natural Hazards	

TOTAL FOUNDATION COURSES **43 cr**

Choose two courses from each of the following categories:

Biology **6-8 cr**

BIOL	235	Botany
BIOL	245	Zoology
BIOL	320	Microbiology
BIOL	324	Marine Biology

BIOL	341	Conservation Biology
BIOL/ENVI	351	Ornithology
BIOL	371	Forest Environment
BIOL	460	Ecology
ENVI	225	Nature of New England
ENVI	375	Aquatic Ecology

Physical Science

6-8 cr

CCST	230	Energy & the Environment
ENVI	425	Advanced Geographic Information Systems
Any EARTH course other than 151, 152, or 245		

Society

6 cr

BIOL	327	Plants & Society
CCCA	202	The Good Earth: The Theme of Agrarianism
CCSS	210	Landscapes of Human Activities
ENGL	371	The American Renaissance
ENGL	374	Literature & the Environment
ENVI	315	Environmental Economics
HONR	301	Ethics & Animals
PHIL	325	Environmental Ethics
POSC	201	U.S. Government & Public Policy
POSC	202	Comparative Government & Public Policy
SOCI	322	Population

**TOTAL ENVIRONMENTAL STUDIES MAJOR
REQUIREMENTS**

61-65 cr

ENVIRONMENTAL STUDIES MINOR PROGRAM

Requirements

BIOL	150	Introduction to Biology	4 cr
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OR CHEM150 Introduction to Chemistry I
OR EARTH 151 Introduction to Physical Geography
OR EARTH 152 Introduction to Physical Geology
OR EARTH 245 Natural Hazards

ENVI	150-H Honors Environmental Systems: Science & Management	4 cr
ENVI	152-H Honors Environmental Resources: Science & Management	4 cr
ENVI	260 Green Living Seminar	2 cr
ENVI	320 Methods in Environmental Research	4 cr
ENVI	340 Environmental Law	3 cr
OR ENVI	310 Politics & Environmental Policy	

Choose one course from either of the following categories: 3-4 cr

Biology

BIOL	235	Botany	
BIOL	245	Zoology	
BIOL	320	Microbiology	
BIOL	324	Marine Biology	
BIOL	341	Conservation Biology	
BIOL/ENVI	351	Ornithology	
BIOL	371	Forest Environment	
BIOL	460	Ecology	
ENVI	225	Nature of New England	
ENVI	375	Aquatic Ecology	

Physical Science

CCST	230	Energy & the Environment	
ENVI	325	Geographic Information Systems	

Any EARTH course other than 151, 152, or 245

Society

BIOL	327	Plants & Society
CCCA	202	The Good Earth: The Theme of Agrarianism
CCSS	210	Landscapes of Human Activities
ENGL	371	The American Renaissance
ENGL	374	Literature & the Environment
ENVI	315	Environmental Economics
HONR	301	Ethics & Animals
PHIL	325	Environmental Ethics
POSC	201	U.S. Government & Public Policy
POSC	202	Comparative Government & Public Policy
SOCI	322	Population

TOTAL ENVIRONMENTAL STUDIES MINOR PROGRAM REQUIREMENTS

24-25 cr

EARTH SCIENCE MINOR PROGRAM

The earth science minor complements any major and provides students with knowledge and skills in the geosciences. Students learn how to work with spatial data, explore how earth's surface has been shaped over time, investigate geological processes that lead to natural hazards for people, and study earth's changing climate, among other topics in the geosciences. Flexibility in choosing elective courses in the minor allow students the opportunity to pursue both broad and specific interests in the field.

EARTH SCIENCE MINOR

Requirements

ENVI	325	Geographic Information Systems	4 cr
ERTH	270	Weather and Climate	3 cr
ERTH	271	Landforms	3 cr

Choose one of the following:

ERTH	151	Introduction to Physical Geography	4 cr
ERTH	152	Introduction to Physical Geology	4 cr
ERTH	245	Natural Hazards	4 cr

Choose two upper level EARTH courses 6 cr

TOTAL EARTH SCIENCE MINOR REQUIREMENTS 20 cr

TEACHING LICENSURE

Students majoring in environmental studies may opt to pursue initial teacher licensure as an early childhood teacher or elementary teacher. Students seeking any of these licenses must complete an environmental studies major, education major and a licensure program in education.

COURSE DESCRIPTIONS

ENVI 150 Introduction to Environmental Systems 4 cr

Provides a foundation in the physical, chemical and biological principles of environmental science in order to explore Earth's terrestrial, aquatic and atmospheric systems. Directly investigates freshwater and forest environments of the northeast in the context of the scientific method.

Required laboratory. Course attributes: CSTL, ENVI.

Prerequisite: None

ENVI 150H Honors: Introduction to Environmental Systems 4 cr

Provides an interdisciplinary foundation in the physical, chemical and biological principles of environmental science in order to explore earth's

terrestrial, aquatic and atmospheric systems. Historical case studies illustrate political and ethical dimensions of environmental issues. Lab exercises familiarize you with the forest and freshwater environments of the northeast and how the scientific method is used to analyze and understand the relation between humans and the natural environment. Required laboratory. Course attributes: CSTL, ENVI, HONR.

Prerequisite: None

ENVI 152 Environmental Resources: Science and Management 4 cr

Provides a foundation in the nature and properties of natural resources in the context of sustainable environmental management. Students directly investigate and assess alternative energy options, watershed water-quality management and wastewater management using the scientific method. Required laboratory. Course attributes: CSTL, ENVI.

Prerequisite: None

ENVI 152H Honors: Environmental Resources: Science and Management 4 cr

Provides a foundation in the nature and properties of natural resources in the context of sustainable environmental management. Students directly investigate and assess alternative energy options, watershed water-quality management and wastewater management using the scientific method. Required laboratory. Course attributes: CSTL, ENVI, HONR.

Prerequisite: None

ENVI 225 Nature of New England 4 cr

Surveys the nature of New England and focuses on the natural history and identification of representative vertebrate animals of the region. It will introduce the physical setting of New England, investigate various communities and ecosystems of the region, and discuss nature in winter and how animals cope with the extremes of winter. The class format includes

lecture, student presentations, and class discussions of assigned readings. Required lab component that includes field based activities. Course attributes: CSTL, ENVI.

Prerequisite: None

ENVI 226 Nature of New England 3 cr

Surveys the nature of New England and focuses on the natural history and identification of representative vertebrate animals of the region. The first part of the course will introduce the physical setting of New England. Subsequently, it will cover various communities and ecosystems of the region, identify the distinguishing vegetation for selected ecosystems, describe the natural history of those ecosystems, and emphasize the identity, biology, and ecology of representative vertebrate animals. Course attributes: CST, ENVI.

Prerequisite: None

ENVI 250 Special Topics in Environmental Studies 3 cr

Focuses attention on a special environmental topic or issue at an introductory level of investigation. Course attributes: ENVI.

Prerequisite: Sophomore status or instructor approval

ENVI 260 Green Living Seminars 2 cr

Utilizes the format of individual reports and/or group discussions of current papers, topics or problems in environmental studies. May also be organized around a seminar series with invited speakers. This course will be graded on a pass/fail basis. Course attributes: ENVI.

Prerequisite: None

ENVI 299 Environmental Studies Practicum 1 to 2 cr

Offers environmental studies students an opportunity to gain practical experience in an appropriate professional situation. The student will work with a faculty sponsor and an off-campus supervisor in gaining experience

ENVI 325 Geographic Information Systems 4 cr

Geographic Information Systems/Science is rapidly becoming the optimum approach for displaying and analyzing both spatial and temporal data in virtually every field. Through a series of "on the job" projects, students will learn the concepts, terminology and computer skills necessary to apply these skills to a variety of subject and occupational areas. Students will complete a final project, report and presentation using GIS in their area of interest. Required laboratory. Course attributes: ENVI.

Prerequisite: None

ENVI 340 Environmental Law 3 cr

Studies the development of an American consciousness toward the environment throughout our nation's history, emphasizing the political, economic and social forces at work in the consequent creation of United States environmental law. This law will then be considered in detail through the examination of federal, state and local environmental protection legislation, regulations and related court decisions. Course attributes: ENVI.

Prerequisite: Junior status

ENVI 340H Honors: Environmental Law 3 cr

Studies the development of American consciousness toward the environment throughout our nation's history, emphasizing the political, economic and social forces at work in the consequent creation of United States environmental law. This law will then be considered in detail through the examination of federal, state and local environmental protection legislation, regulations and related court decisions. Course attributes: ENVI, HONR.

Prerequisite: Junior status

ENVI 350 Advanced Special Topics in Environmental Studies **1 to 4 cr**

Focuses attention on a special environmental topic or issue at an advanced level of study. Course attributes: ENVI.

Prerequisite: Junior status or instructor approval

ENVI 351 Ornithology **4 cr**

Provides an overview of the fundamental principles of avian biology with emphasis on ecological and behavioral aspects of ornithology. Students will learn to identify about 100 regional species by sight and/or sound. A semester-long project will encourage students to investigate and read the ornithological peer-reviewed scientific literature. Lab activities will include field trips to practice identifying birds and collecting avian field data.

Required laboratory. Course attributes: ENVI.

Prerequisite: BIOL 100 or BIOL 150 or ENVI 150 or ENVI 150H or instructor permission

ENVI 375 Aquatic Ecology **4 cr**

Focuses on the physical, chemical, and biological environment of freshwater systems, as well as on common methods used in the study of these systems. Concepts will be applied to addressing current challenges in conserving freshwater resources. Required laboratory. Course attributes: ENVI.

Prerequisite: BIOL 100 or BIOL 150 or ENVI 150H or instructor approval

ENVI 401 Independent Research **1 to 3 cr**

For environmental studies majors who desire to conduct research on a specific topic in environmental studies. The research will be under the supervision and direction of the instructor and will require a scholarly report. Course attributes: ENVI.

Prerequisite: Department approval

ENVI 425 Advanced Geographic Information Systems (GIS) 4 cr

Builds on ENVI 325, providing opportunities for conceptualizing and solving spatial/temporal problems within the student's primary field of study.

Complex spatial analysis, quantitative methods, process model building and the substantial use of remotely sensed data will be key elements of this course.

Topics will also include geo-coding, mapping ethics and 3-D map visualization. Required laboratory. Course attributes: ENVI.

Prerequisite: ENVI 325 (grade of C or better)

ENVI 499 Teaching Assistantship in Environmental Studies 1 to 3 cr

Provides the opportunity for the student to assist in the preparation and implementation of an environmental studies course. This course will be graded on a pass/fail basis. Course attributes: ENVI.

Prerequisite: Department approval

ENVI 500 Independent Study in Environmental Studies 1 to 3 cr

Open to juniors and seniors who wish to study a topic in depth. Written reports and frequent conferences with the advisor are required. Course attributes: ENVI.

Prerequisite: Junior/senior status, department approval

ENVI 540 Internship in Environmental Studies 1 to 15 cr

Offers the environmental studies major an opportunity to practice in an appropriate professional situation. The student will work with a faculty sponsor and an off-campus supervisor in gaining experience significant to the major. Course attributes: ENVI.

Prerequisite: Junior/senior status, departmental approval

ERTH 151 Introduction to Physical Geography 4 cr

Studies the natural environment from a geographical perspective. Analyzes the distribution and character of environmental elements, including weather, climate, landforms, soils, and vegetation. Examines consequences of human intervention in natural systems. Required laboratory. Course attributes: CSTL, ENVI.

Prerequisite: None

ERTH 152 Introduction to Physical Geology 4 cr

Studies the earth, including the origin and types of earth materials, volcanism and crystal deformation, external earth processes and development of landscapes, geological resources, and geological processes as natural hazards. Required laboratory. Course attributes: CSTL, ENVI.

Prerequisite: None

ERTH 245 Natural Hazards 4 cr

Studies natural processes which are hazardous in the context of human activities, including relevant geologic, geomorphic, climatic, and meteorologic phenomena; examines the origin and significance of selected hazards from natural and human perspectives and explores how people underestimate or misjudge risk. Required laboratory. Course attributes: CSTL, ENVI.

Prerequisite: None

ERTH 270 Weather and Climate 3 cr

Examines general meteorological and climatic characteristics through space and time, especially as influenced by temperature, wind, and moisture. Explains atmospheric disturbances at planetary, regional, and local scales. Course attributes: CST, ENVI.

Prerequisite: None

ERTH 271 Landforms 3 cr

Examines the description, origin, classification, and interpretation of landforms. Analyzes geologic, climatic, and biologic factors as landform controls and shows that certain geomorphic processes are natural hazards. Course attributes: CST, ENVI.

Prerequisite: None

ERTH 300 Topics in Earth Science 3 cr

Analyzes and evaluates contemporary problems in Earth Science. Course attributes: ENVI.

Prerequisite: EARTH 151 or EARTH 152 or EARTH 245

ERTH 330 National Parks and Monuments 3 cr

Studies the topography, geology, climate, flora, fauna and scenic qualities of national parks and monuments by describing the history of the national park system and factors threatening its existence. Course attributes: ENVI.

Prerequisite: EARTH 151 or EARTH 152 or EARTH 245

ERTH 370 River Systems 3 cr

Studies streams as environmentally significant landscape features in the context of human activity; examines hydrology and flooding, channelization, flood plains and their land use patterns, water contamination and related ecology. Course attributes: ENVI.

Prerequisite: None

ERTH 500 Independent Study 1 to 3 cr

Independent effort directed to the in-depth study of some aspect of earth science. Course attributes: ENVI.

Prerequisite: Department approval