GEOLOGY, ENVIRONMENTAL SCIENCE, BA

Bachelor of Arts in Environmental Science (337004BA)

More on the Environmental Science major (https://www.uakron.edu/geology/academics/undergraduate/environmental-science-program.dot)

Environmental Science Fundamentals

Environmental science is the study of society's relationship with the physical and biological world. This knowledge may be applied to understanding natural hazards such as earthquakes, volcanoes and landslides; addressing problems associated with environmental contamination; and investigating earth's history to understand the global climate change. Environmental scientists are employed by environmental consulting firms, government agencies, nonprofit organizations and universities.

Core courses provide the fundamentals in:

- physical geology
- biology
- chemistry

Degree program can be tailored to a major field of interest by taking additional courses in the supporting sciences and mathematics.

Requirements for Admission

Admission to the College of Arts and Sciences. The student must maintain a minimum 2.00 grade point average.

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Three year accelerated option: for first time students who have earned credits for at least the first year of courses. Credits can be earned through qualifying scores on appropriate Advanced Placement (AP) exams or through College Credit Plus Program (CCP) courses. Credits for qualifying AP scores or CCP courses are determined by the appropriate academic department. Departments may assign varied course credit, depending on the student's score on an AP exam or grade in a CCP course. Students may also receive credit by examination or via placement tests, where appropriate.

Requirements Summary

Code	Title	Hours
General Education Requirements (https://bulletin.uakron.edu/undergraduate/general-education/) *		35-34
College of Arts and Sciences Requirements		14
Core Geology-Environmental Science Requirements		18
Environmental Science Field Study Requirement I		3
Environmental Science Field Study Requirement II		3
Environmental Science Electives		22
Environmental Science Non-Geology Requirements I		12
Environmental Science Non-Geology Requirements II		7-8
Environmental Science Non-Geology Elective Requirements		7
Total Hours		**121**

* Several courses required for the major also satisfy General Education requirements. The University minimum of 36 credits are required for General Education and credit for these courses will apply to multiple requirements.

Recommended General Education Courses

Code	Title	Hours
Students pursuing a bachelor's degree must complete the following General Education coursework. Diversity courses may also fulfill major or Breadth of Knowledge requirements. Integrated and Applied Learning courses may also fulfill requirements in the major.		
Students are not required to enroll in the specific courses listed below. However, to facilitate successful degree completion, the academic department strongly encourages completion of the following recommendations.		
Academic Foundations		**12**
Mathematics, Statistics and Logic: 3 credit hours		
MATH 149	Precalculus Mathematics	
or MATH 221	Analytic Geometry-Calculus I	
MATH 222	Analytic Geometry-Calculus II	
STAT 250	Statistics for Everyday Life	
STAT 261	Introductory Statistics I	
or STAT 262	Introductory Statistics II	
STAT 260	Basic Statistics	
Speaking: 3 credit hours		
Writing: 6 credit hours		
Breadth of Knowledge		**22**
Arts/Humanities: 9 credit hours		
Natural Sciences: 7 credit hours		
GEOL 101	Introductory Physical Geology	
GEOL 102	Introductory Historical Geology	
GEOL 230	Mineral Science	
CHEM 151	Principles of Chemistry I	
CHEM 152	Principles of Chemistry I Laboratory	
CHEM 153	Principles of Chemistry II	
BIOL 111	Principles of Biology I	
BIOL 112	Principles of Biology II	

PHYS 261	College Physics I	
PHYS 262	College Physics II	
Social Sciences: 6 credit hours		
Diversity		
Domestic Diversity		
Global Diversity		
Integrated and Applied Learning		**2**
Select one class from one of the following subcategories:		
Complex Issues Facing Society		
GEOL 421	Coastal Geology	
GEOL 443	Rivers	
GEOL 452	Geology and Environmental Science Service Learning	
PHIL 365	Environmental Ethics	
ECON 385	Economics of Natural Resources & the Environment	
Capstone		
Review the General Education Requirements page for detailed course listings.		
Total Hours		**36**

College of Arts & Sciences Requirements

Code	Title	Hours
Degree requirements in Arts & Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language.		
2 Year Language Proficiency		*14*
101 Beginning I		
102 Beginning II		
201 Intermediate I		
202 Intermediate II		
SLPA 222	Survey of Deaf Culture in America (American Sign Language option only)	
Students must also complete a minimum of 40 credits (excluding workshops) consisting of either:		
Upper-level (300/400) courses both in and outside of the student's major;		
or other courses outside the major department approved by the student's major department chair (permission should be obtained prior to enrollment); these may not include workshops		

Core Geology-Environmental Science Track Requirements

Code	Title	Hours
GEOL 101	Introductory Physical Geology	4
GEOL 102	Introductory Historical Geology	4
GEOL 230	Mineral Science	4
GEOL 310	Geomorphology	3
GEOL 470	Geochemistry	3
Total Hours		**18**

Environmental Science Track Field Study Requirement I

Code	Title	Hours
Complete one of the following:		**3**
GEOL 421	Coastal Geology [1]	
GEOL 443	Rivers [1]	
GEOL 451	Field/Lab Studies in Environmental Science	
Total Hours		**3**

[1] If GEOL 443 or GEOL 421 are taken, these courses cannot also count towards Environmental Science Track Electives.

Environmental Science Track Field Study Requirement II

Code	Title	Hours
Complete one of the following:		**3**
GEOL 452	Geology and Environmental Science Service Learning	
GEOL 453	Geology Field Camp I	
Total Hours		**3**

Environmental Science Track Electives

Code	Title	Hours
Students must select 22 credits from the courses listed below.		**22**
19 of the 22 credits must be from upper level (3xx/4xx) courses.		
GEOL 231	Silicate Mineralogy and Petrology	
GEOL 301	Engineering Geology	
GEOL 324	Sedimentation & Stratigraphy	
GEOL 350	Structural Geology	
GEOL 355	Contemporary Issues in Environmental Science	
GEOL 360	Paleobiology	
GEOL 371	Oceanography	
GEOL 411	Glacial Geology	
GEOL 421	Coastal Geology [1]	
GEOL 435	Petroleum Geology	
GEOL 441	Fundamentals of Geophysics	
GEOL 443	Rivers [1]	
GEOL 444	Environmental Magnetism	
GEOL 445	Environmental and Engineering Geophysics	
GEOL 446	Exploration Geophysics	
GEOL 450	Advanced Structural Geology	
GEOL 453	Geology Field Camp I	
GEOL 454	Geology Field Camp II	
GEOL 455	Field Studies in Geology	
GEOL 465	Geomicrobiology	
GEOL 474	Groundwater Hydrology	
GEOL 480	Seminar in Environmental Studies	
GEOL 484	Geoscience Research & Consulting Methods	
GEOL 481	Analytical Methods in Geology	
GEOL 485	Individual Readings in Geology and Environmental Science	

GEOL 491	Internship in Geology and Environmental Science
GEOL 497	Honors Project in Geology
GEOL 499	Research Problems in Geology
GEOG 405	Geographic Information Systems
GEOG 407	Advanced Geographic Information Systems
GEOG 445	GIS Database Design
GEOG 447	Remote Sensing
GEOG 495	Soil & Water Field Studies
HIST 471	American Environmental History
PHIL 365	Environmental Ethics
POLIT 417	Environmental Security and Climate Politics
BIOL 342	Flora & Taxonomy
BIOL 418	Field Ecology
BIOL 421	Tropical Field Biology
BIOL 422	Conservation Biology
BIOL 426	Wetland Ecology
BIOL 427	Freshwater Ecology
BIOL 430	Community/Ecosystem Ecology
BIOL 451	General Entomology
BIOL 455	Ichthyology
BIOL 456	Ornithology
BIOL 457	Herpetology
CIVE 321	Introduction to Environmental Engineering
CIVE 323	Water Supply & Pollution Control
CIVE 426	Environmental Engineering Design
CIVE 427	Water Quality Modeling & Management
CIVE 428	Hazardous & Solid Wastes
ECON 385	Economics of Natural Resources & the Environment
Total Hours	**22**

[1] If GEOL 421 or GEOL 443 was used to satisfy the Environmental Science Track Filed Study Requirement I, it cannot be used as a part of this requirement.

Environmental Science Track Non-Geology Requirements I

Code	Title	Hours
BIOL 111	Principles of Biology I	4
BIOL 112	Principles of Biology II	4
CHEM 151	Principles of Chemistry I	3
CHEM 152	Principles of Chemistry I Laboratory	1
Total Hours		**12**

Environmental Science Track Non-Geology Requirements II

Code	Title	Hours
MATH 149	Precalculus Mathematics	4
or MATH 221	Analytic Geometry-Calculus I	
Students must take one of the three introductory statistics options below.		*3-4*
STAT 250	Statistics for Everyday Life	
STAT 261 & STAT 262	Introductory Statistics I and Introductory Statistics II	
STAT 260	Basic Statistics	
Total Hours		**7-8**

Environmental Science Track Non-Geology Electives

Code	Title	Hours
Students must choose seven credits from the following courses.		**7**
BIOL 217	General Ecology	
CHEM 153	Principles of Chemistry II	
CHEM 154	Qualitative Analysis	
MATH 221	Analytic Geometry-Calculus I	
MATH 222	Analytic Geometry-Calculus II	
PHYS 261	College Physics I	
PHYS 262	College Physics II	
Total Hours		**7**

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1st Year		
Fall Semester		**Hours**
GEOL 101	Introductory Physical Geology [1]	4
MATH 149	Precalculus Mathematics [2]	4
	Writing I Requirement [3]	3
	Beginning Language I [4]	4
	Hours	**15**
Spring Semester		
GEOL 102	Introductory Historical Geology	4

CHEM 151	Principles of Chemistry I	3
CHEM 152	Principles of Chemistry I Laboratory	1
	Writing II Requirement [3]	3
	Beginning Language II	4
	Hours	**15**
2nd Year		
Fall Semester		
GEOL 230	Mineral Science	4
BIOL 111	Principles of Biology I	4
	Intermediate Language I	3
	Speech Requirement	3
	Hours	**14**
Spring Semester		
GEOL 3/4xx	Upper level Geology elective [5]	3
BIOL 112	Principles of Biology II	4
	Arts Requirement [6]	3
	Domestic Diversity Requirement [6]	3
	Intermediate Language II	3
	Hours	**16**
3rd Year		
Fall Semester		
GEOL 310	Geomorphology	3
GEOL 3/4xx	Upper level Geology elective [5]	3
BIOL 217	General Ecology	3
STAT 250	Statistics for Everyday Life	4
	Arts/Humanities Requirement [6]	3
	Hours	**16**
Spring Semester		
GEOL 452	Geology and Environmental Science Service Learning	3
GEOL 3/4xx	Upper level Geology electives [5]	7
PHYS 261	College Physics I	4
	Hours	**14**
Summer Semester		
GEOL 451	Field/Lab Studies in Environmental Science	3
	Hours	**3**
4th Year		
Fall Semester		
GEOL 470	Geochemistry	3
GEOL 3/4xx	Upper level Geology elective [5]	3
	Global Diversity Requirement [6]	3
	Social Sciences Requirement [6]	3
	Complex Issues Requirement [7]	3
	Hours	**15**
Spring Semester		
GEOL 3/4xx	Upper level Geology electives [5]	7
	Social Sciences Requirement [6]	3
	Humanities Requirement	3
	Hours	**13**
	Total Hours	**121**

1. GEOL 101 Introductory Physical Geology Strongly Preferred, **or** GEOL 100 Earth Science, **or** GEOL 200 Environmental Geology **or** (by permission only) GEOL 211 Introduction to Environmental Science **and** GEOL 104 Exercises in Physical Geology.
2. All Geology majors should take the Math Placement Test. The B.A. requirement is MATH 149 Precalculus Mathematics.
3. For English Composition I, ENGL 111 English Composition I or ENGL 113 African American Language and Culture I: College Composition are the recommended classes to the meet the General Education English requirement. For English Composition II, ENGL 112 English Composition II or ENGL 114 African American Language and Culture II: College Composition are the recommended classes to meet the General Education English requirement. ENGL 222 Technical Report Writing fulfills the English Composition II requirement.
4. Demonstration of ability to use another language by completion of the second year of a foreign language or sign language is required. See your advisor for placement. Please note that all four semesters must be completed in the **same** language and it's recommended you begin your first language class as soon as possible.
5. Environmental Science Track electives: at least 22 credits with a minimum of 19 credits at the 300/400 level. Up to 8 credits may be selected from the Environmental Studies Certificate electives list (non-Geology courses). Please contact a Department of Geology & Environmental Science advisor to discuss alternatives.
6. We strongly recommend selecting Humanities and/or Social Science courses that fulfill both a Breadth of Knowledge requirement *and* Domestic or Global Diversity requirement. Please consult the General Education requirements (https://bulletin.uakron.edu/undergraduate/general-education/#associatedegreerequirementstext) to see which courses fulfill both requirements.
7. We strongly recommend taking GEOL 421 Coastal Geology or GEOL 443 Rivers to fulfill this requirement. These courses both count towards this requirement and the Environmental Science Electives requirement.

Alert

1. By the end of your first 48 credit hours attempted, you must have completed your General Education English, Mathematics, Statistics, and Logic, and Communications (Speech) requirements;
2. By the end of your first 48 credit hours attempted, you must have declared a major and transferred to (been accepted by) a degree granting college at The University of Akron.