ENVIRONMENTAL SCIENCE, BACHELOR OF SCIENCE WITH A CONCENTRATION IN ANALYTICAL SCIENCES

Environmental Science, Bachelor of Science with a Concentration in Analytical Sciences Requirements

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS - 46 Hours Required		
Minimum of "C-"required		
Fundamental Academic Skills		**15**
ENGL 1150	ENGLISH COMPOSITION I	
ENGL 1160	ENGLISH COMPOSITION II	
CMST 1110	PUBLIC SPEAKING FUNDS	
or CMST 2120	ARGUMENTATION AND DEBATE	
ENGL 3980	TECHNICAL WRITING ACROSS THE DISCIPLINES (or another advisor-approved course - Writing in the Discipline Course)	
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING	
or MATH 1100	DATA LITERACY AND VISUALIZATION	
or MATH 1130	QUANTITATIVE LITERACY	
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS	
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT	
or STAT 1100	DATA LITERACY AND VISUALIZATION	
or STAT 1530	ELEMENTARY STATISTICS	
Distribution Requirements		**31**
Natural Science - From two disciplines and at least one lab - 7 hrs		
Social Science - From two disciplines - 9 hrs		
Humanities and Fine Arts - From two disciplines- 9 hrs		
Global Diversity - 3 hrs		
US Diversity - 3 hrs		
MAJOR REQUIREMENTS		
**Course will satisfy UNO's General Education requirement		
^Course requires pre-requisite(s)		
Environmental Science Major with a Concentration in Analytical Sciences - 82-91 Hours Required		
Required coursework		**16-18**
(Note that in the case of cross-listed courses, Environmental Science majors must enroll in the ENVN section)		
ENVN 2010	ENVIRONMENTAL PROBLEMS AND SOLUTIONS (^)	
GEOL 1010	ENVIRONMENTAL GEOLOGY (**)	
GEOG 1050	HUMAN-ENVIRONMENT GEOGRAPHY (**)	
ENVN/GEOL/BIOL 4610	ENVIRONMENTAL MONITORING AND ASSESSMENT (^)	
ENVN/BIOL 4800	INTERNSHIP IN ENVIRONMENTAL MANAGEMENT AND PLANNING (^)	
ENVN/GEOG 4820	INTRODUCTION TO ENVIRONMENTAL LAW & REGULATIONS (^)	
Select one of the following Statistics courses -		**3-4**
BIOL 4110	STATISTICS FOR BIOLOGICAL SCIENCES (^)	
ENVN 2020	STATISTICS FOR LIFE AND ENVIRONMENTAL SCIENCE (^)	
STAT 1530	ELEMENTARY STATISTICS (** ^)	
STAT 3000	STATISTICAL METHODS I (^)	
PSYC 3130	STATISTICS FOR THE BEHAVIORAL SCIENCES (^)	
SOC 2130	SOCIAL STATISTICS (^)	
Select one of the following GIS courses		**1-4**
ENVN 4600	GIS APPLICATIONS FOR ENVIRONMENTAL SCIENCE (^)	
GEOG 1090	INTRODUCTION TO GEOSPATIAL SCIENCES (** ^)	
GEOG 3530	CARTOGRAPHY AND DATA VISUALIZATION (^)	
GEOG 4050	GEOGRAPHIC INFORMATION SYSTEMS I (^)	
Select one of the following courses on the human dimensions of Environmental Studies		**3**
ANTH 4250	ENVIRONMENTAL ANTHROPOLOGY AND NATIVE PEOPLES OF THE GREAT PLAINS (^)	
ECON 3320	ENVIRONMENTAL ECONOMICS AND SUSTAINABILITY (^)	
ENVN/PHIL 3180	ENVIRONMENTAL ETHICS (^)	
ENVN 3310	SUSTAINABILITY AND THE ENVIRONMENT IN THE SPANISH-SPEAKING WORLD (^)	
ENVN/PSCI 4270	GLOBAL ENVIRONMENTAL POLITICS (^)	
ENVN 4390	THE NATURE OF THE PAST: AMERICAN ENVIRONMENTAL HISTORY, PRE-HISTORY TO THE PRESENT (^)	
SOC 4760	ENVIRONMENTAL SOCIOLOGY (^)	
Analytical Sciences Concentration requirements		**8**
CHEM 1180	GENERAL CHEMISTRY I (** ^)	
CHEM 1184	GENERAL CHEMISTRY I LABORATORY (** ^)	
CHEM 1190	GENERAL CHEMISTRY II (^)	
CHEM 1194	GENERAL CHEMISTRY II LABORATORY (^)	
Select one of the following Organic Chemistry sequences		**5-8**
CHEM 2210 & CHEM 2214	FUNDAMENTALS OF ORGANIC CHEMISTRY and FUNDAMENTALS OF ORGANIC CHEMISTRY LABORATORY (^)	
OR		
CHEM 2250	ORGANIC CHEMISTRY I (^)	
CHEM 2260 & CHEM 2274	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY LABORATORY (^)	
Other required Chemistry courses		**18**
CHEM 2400	QUANTITATIVE ANALYSIS (^)	
CHEM 2404	QUANTITATIVE ANALYSIS LAB (^)	

CHEM 2500	INTRODUCTION TO INORGANIC CHEMISTRY (^)	
CHEM 3030	ENVIRONMENTAL CHEMISTRY (^)	
CHEM 3650	FUNDAMENTALS OF BIOCHEMISTRY (^)	
CHEM 3654	FUNDAMENTALS OF BIOCHEMISTRY LABORATORY (^)	
CHEM 4400	INSTRUMENTAL ANALYSIS (^)	
CHEM 4404	INSTRUMENTAL ANALYSIS LABORATORY (^)	
Required Biology and Physics Courses		**17**
BIOL 1330	ENVIRONMENTAL BIOLOGY	
BIOL 2440	THE BIOLOGY OF MICROORGANISMS	
PHYS 1110	GENERAL PHYSICS I	
PHYS 1154	GENERAL PHYSICS LABORATORY I	
PHYS 1120	GENERAL PHYSICS II	
PHYS 1164	GENERAL PHYSICS LABORATORY II	
Select a minimum 11 hours from the following:		**11**
ENVN 3030	MICROBIAL ECOLOGY (^)	
ENVN 4320	ECOLOGICAL SUSTAINABILITY AND HUMAN HEALTH (^)	
GEOL 1170	INTRODUCTION TO PHYSICAL GEOLOGY (**)	
GEOL 2750 & GEOL 2754	MINERALOGY and MINERALOGY LABORATORY (^)	
GEOL 2760 & GEOL 2764	IGNEOUS AND METAMORPHIC PETROLOGY and IGNEOUS AND METAMORPHIC PETROLOGY LABORATORY (^)	
GEOL 3300 & GEOL 3310	STRUCTURAL GEOLOGY and STRUCTURAL GEOLOGY FIELD METHODS (^)	
GEOL 4200	WATER QUALITY (^)	
GEOL 4540	GEOCHEMISTRY (^)	
GEOL/GEOG 4640	CRITICAL ZONE SCIENCE (^)	
GEOG 3510	METEOROLOGY (**)	
GEOG 4010	CONSERVATION OF NATURAL RESOURCES (^)	
GEOG 4020	SPATIAL ANALYSIS IN GEOGRAPHY (^)	
GEOG 4030	COMPUTER MAPPING AND VISUALIZATION (^)	
GEOG 4050	GEOGRAPHIC INFORMATION SYSTEMS I (^)	
GEOG 4100	BIOGEOGRAPHY (^)	
GEOG 4260	PROCESS GEOMORPHOLOGY (^)	
GEOG 4320	CLIMATOLOGY (^)	
GEOG 4330	SOIL GENESIS, MORPHOLOGY AND CLASSIFICATION (^)	
GEOG 4340	WATER RESOURCES (^)	
GEOG 4630	ENVIRONMENTAL REMOTE SENSING (^)	
GEOG 4660	GEOGRAPHIC INFORMATION SYSTEMS II (^)	
BIOL 3020	MOLECULAR BIOLOGY OF THE CELL (^)	
BIOL 3340	ECOLOGY (^)	
BIOL 3530	FLORA OF THE GREAT PLAINS (^)	
BIOL 4120	CONSERVATION BIOLOGY (^)	
ENVN 4180	FRESHWATER ECOLOGY (^)	
ENVN 4350	GLOBAL CLIMATE CHANGE (^)	
ENVN 4410	WETLAND ECOLOGY AND MANAGEMENT (^)	
College Breadth		**0**
College of Arts and Sciences' breadth requirement satisfied by this major		
Bachelor of Science Cognate Requirement		**0**
See Major -		
ELECTIVES		
Elective hours as required to reach a total of 120 hours		

Environmental Science, Bachelor of Science with a Concentration in Analytical Sciences Four Year Plan

Freshman

Fall		**Credits**
ENGL 1150	ENGLISH COMPOSITION I	3
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY	4
PHYS 1110 & PHYS 1154	GENERAL PHYSICS I and GENERAL PHYSICS LABORATORY I	5
Humanities and Fine Arts/US Diversity		3
	Credits	**15**
Spring		
BIOL 1330	ENVIRONMENTAL BIOLOGY	3
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY	4
ENVN 2010	ENVIRONMENTAL PROBLEMS AND SOLUTIONS	2
PHYS 1120 & PHYS 1164	GENERAL PHYSICS II and GENERAL PHYSICS LABORATORY II	5
	Credits	**14**
Sophomore		
Fall		
CHEM 2250	ORGANIC CHEMISTRY I	3
CHEM 2400 & CHEM 2404	QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB	4
CMST 1110 or CMST 2120	PUBLIC SPEAKING FUNDS or ARGUMENTATION AND DEBATE	3
Social Science/Global Diversity		3
	Credits	**13**
Spring		
CHEM 2260 & CHEM 2274	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY LABORATORY	5
CHEM 2500	INTRODUCTION TO INORGANIC CHEMISTRY	3
GEOL 1010	ENVIRONMENTAL GEOLOGY	3
Humanities and Fine Arts		3
	Credits	**14**
Junior		
Fall		
CHEM 3650 & CHEM 3654	FUNDAMENTALS OF BIOCHEMISTRY and FUNDAMENTALS OF BIOCHEMISTRY LABORATORY	4

Approved Statistics Course		3
Humanities and Fine Arts*		3
Social Science		3
An approved course focusing on the human dimensions of environmental studies		3
*HFA #3 – must be in a 2nd discipline		
	Credits	**16**
Spring		
GEOG 1050	HUMAN-ENVIRONMENT GEOGRAPHY	4
Approved GIS Course		4
Approved GEOL/GEOG/BIOL/ENVN elective		3
Social Science*		3
Elective of choice, if needed to reach 120**		1-3
*SS #3 – must be in a 2nd discipline		
**120 total credits are required for a degree, with a minimum of 18 upper level (3000-4000) credits in the major and 27 upper level credits throughout the degree. Selecting 3000-4000 level electives or course options can help you reach these minimums.		
	Credits	**15-17**
Summer		
ENVN 4800	INTERNSHIP IN ENVIRONMENTAL MANAGEMENT AND PLANNING (*)	1
*ENVN 4800: Requires permission of instructor.		
	Credits	**1**
Senior		
Fall		
ENVN/GEOG/GEOL/ BIOL 4610	ENVIRONMENTAL MONITORING AND ASSESSMENT (*)	3
ENVN 4820	INTRODUCTION TO ENVIRONMENTAL LAW & REGULATIONS (**)	3
Approved GEOL/GEOG/BIOL/ENVN elective***		3
Approved GEOL/GEOG/BIOL/ENVN elective***		3
Elective of choice, if needed to reach 120.***		3
*120 total credits are required for a degree, with a minimum of 18 upper level (3000-4000) level credits in the major and 27 upper level credits throughout the degree. Selecting 3000-4000 level electives or course options, when given, can help you reach these minimums.		
	Credits	**15**
Spring		
BIOL 2440	THE BIOLOGY OF MICROORGANISMS	4
CHEM 3030	ENVIRONMENTAL CHEMISTRY	3
CHEM 4400 & CHEM 4404	INSTRUMENTAL ANALYSIS and INSTRUMENTAL ANALYSIS LABORATORY	4
NSCI 3940	WRITING IN CHEMISTRY	2
Approved GEOL/GEOG/BIOL/ENVN elective		3
	Credits	**16**
	Total Credits	**119-121**

This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult an advisor in your major program for further guidance.

This plan is not a contract and curriculum is subject to change

Additional Information About this Plan:

University Degree Requirements: The minimum number of hours for a UNO undergraduate degree is 120 credit hours. Please review the requirements for your specific program to determine all requirements for the program. In order to graduate on-time (four years for an undergraduate degree), you need to take 30 hours each year.

Placement Exams: For Math, English, Foreign Language, a placement exam may be required. More information on these exams can be found at https://www.unomaha.edu/enrollment-management/testing-center/placement-exams/information.php

**Transfer credit or placement exam scores may change suggested plan of study