

# 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
<b>GENERAL EDUCATION REQUIREMENTS - 34 Hours Required</b>		
Minimum of "C-" required		
<b>Fundamental Skills</b>		<b>15</b>
<b>Writing – 6 hrs.</b>		
ENGL 1150	ENGLISH COMPOSITION I	
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	
<b>Oral Communication – 3 hrs.</b>		
CMST 1110	PUBLIC SPEAKING FUNDS	
or CMST 2120	ARGUMENTATION AND DEBATE	
<b>Quantitative Literacy – 3 hrs.</b>		
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING	
or MATH 1130	QUANTITATIVE LITERACY	
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS	
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT	
<b>Data Literacy – 3 hrs.</b>		
Select one from the following:		
STAT 1100	DATA LITERACY AND VISUALIZATION	
STAT 1530	ELEMENTARY STATISTICS	
Until Fall 2028, students can satisfy this requirement with an approved data literacy course, or any approved natural or social science general education course.		
<b>Breadth of Knowledge</b>		<b>13</b>
Social Science – 3 hrs.		
Humanities – 3 hrs.		
Natural & Physical Science (must complete a lab) – 4 hrs.		
Arts – 3 hrs.		
<b>Individual and Social Responsibility</b>		<b>6</b>
Cultural Knowledge – 3 hrs.		
Civic Knowledge and Engagement – 3 hrs.		
<b>MAJOR REQUIREMENTS</b>		
**Course will satisfy UNO's General Education requirement		
^Course requires pre-requisite(s)		
<b>Environmental Science Major with a Concentration in Analytical Sciences - 82-91 Hours Required</b>		
<b>Required coursework</b>		<b>16-18</b>
(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 BUSINESS STRATEGY (^)	
ENVN/PHIL 3180	ENVIRONMENTAL ETHICS (^)	
ENVN/SPAN 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 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (** ^)	
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and 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 (^)	
<b>Other required Chemistry courses</b>		<b>18</b>
CHEM 2400 & CHEM 2404	QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB (^)	
CHEM 2500	INTRODUCTION TO INORGANIC CHEMISTRY (^)	
CHEM 3030	ENVIRONMENTAL CHEMISTRY (^)	
CHEM 3650 & CHEM 3654	FUNDAMENTALS OF BIOCHEMISTRY and FUNDAMENTALS OF BIOCHEMISTRY LABORATORY (^)	
CHEM 4400 & CHEM 4404	INSTRUMENTAL ANALYSIS and INSTRUMENTAL ANALYSIS LABORATORY (^)	
<b>Required Biology and Physics Courses</b>		<b>17</b>
BIOL 1330	ENVIRONMENTAL BIOLOGY	
BIOL 2440	THE BIOLOGY OF MICROORGANISMS	
PHYS 1110 or PHYS 2110	PHYSICS FOR LIFE SCIENCE I (**) GENERAL PHYSICS I - CALCULUS LEVEL	
PHYS 1154	GENERAL PHYSICS LABORATORY I (**)	
PHYS 1120 or PHYS 2120	PHYSICS FOR LIFE SCIENCE II GENERAL PHYSICS II-CALCULUS LEVEL	
PHYS 1164	GENERAL PHYSICS LABORATORY II	
<b>Select a minimum 11 hours from the following:</b>		<b>11</b>
ENVN/BIOL 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/GEOG 4200	WATER QUALITY (^)	
GEOL/CHEM 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/GEOL/BIOL 4100	BIOGEOGRAPHY (^)	
GEOG/GEOL 4260	PROCESS GEOMORPHOLOGY (^)	
GEOG 4320	CLIMATOLOGY (^)	
GEOG/GEOL 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/BIOL 4180	FRESHWATER ECOLOGY (^)	
ENVN/GEOG 4350	GLOBAL CLIMATE CHANGE (^)	
ENVN/BIOL 4410	WETLAND ECOLOGY AND MANAGEMENT (^)	
<b>College Breadth</b>		<b>0</b>
College of Arts and Sciences' breadth requirement satisfied by this major		
<b>Bachelor of Science Cognate Requirement</b>		<b>0</b>
See Major -		
<b>ELECTIVES</b>		
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	PHYSICS FOR LIFE SCIENCE I and GENERAL PHYSICS LABORATORY I	5
Advisor-approved Math Course		3
Attend Durango Days; other campus events. Set up a Handshake account and take the Pathway U career assessment. Attend the Student Involvement & Volunteer Fair to explore student organizations. Make advising appointment for spring: Sept-Oct. Work with your advisor to develop your Pathway in Stellic.		

**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	PHYSICS FOR LIFE SCIENCE II and GENERAL PHYSICS LABORATORY II	5
Attend campus events such as major exploration week to get an idea of interests and career paths. Schedule a resume review with UNO Career Services. Visit faculty office hours and ask about undergraduate research opportunities. Make advising appointment for summer and fall: February – March.		

**Credits** **14**

### Sophomore

Fall		Credits
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
General Education Course or Elective		3
General Education Course or Elective		3
Attend the Career & Internship Fair to start networking with employers. Look for volunteer, research, or part-time work to gain experience. Join a student organization or club related to your field or interests. Make advising appointment for spring: Sept. - Oct.		
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
CHEM 2260 & CHEM 2274	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY LABORATORY	5
CHEM 2500	INTRODUCTION TO INORGANIC CHEMISTRY	3
GEOL 1010	ENVIRONMENTAL GEOLOGY	3
General Education Course or Elective		3
Attend a career fair for informational and networking purposes. Update your resume and LinkedIn profile with new experiences. Investigate and apply for summer internships, research, or study abroad programs. Make advising appointment for summer and fall: February – March.		
<b>Credits</b>		<b>14</b>
<b>Junior</b>		
<b>Fall</b>		
CHEM 3650 & CHEM 3654	FUNDAMENTALS OF BIOCHEMISTRY and FUNDAMENTALS OF BIOCHEMISTRY LABORATORY	4
Approved Statistics Course		3
General Education Course or Elective		3
General Education Course or Elective		3
An approved course focusing on the human dimensions of environmental studies		3
Apply for a paid internship or research assistantship. Attend a mock interview workshop or use online interview tools with Career Services. Start researching and visiting graduate programs or professional schools. Visit Career Center, continue updating resume. Make advising appointment for spring: Sept-Oct.		
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
GEOL 1050	HUMAN-ENVIRONMENT GEOGRAPHY	4
Approved GIS Course		4
Approved GEOL/GEOG/BIOL/ENVN elective		3
General Education Course or Elective		3
Elective		1-3
Request letters of recommendation from faculty for jobs or grad school. Attend the All-Majors Career Fair with a plan to network. Meet with your advisor or submit for a graduation check-in to review remaining degree requirements. Make advising appointment for summer and fall: February – March.		
<b>Credits</b>		<b>15-17</b>
<b>Summer</b>		
ENVN 4800	INTERNSHIP IN ENVIRONMENTAL MANAGEMENT AND PLANNING	1
<b>Credits</b>		<b>1</b>

**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		3
Check in with Career Center for networking tips. Finalize graduate school applications or job search strategy. Attend a career fair and start applying for full-time jobs. Prepare for interviews and salary negotiations with Career Services. Make advising appointment for spring: Sept. - Oct.		

**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
Approved GEOL/GEOG/BIOL/ENVN elective		3
Complete your final advising check before graduation. Polish your resume, cover letters, and LinkedIn profile. Stay connected by joining alumni networks and professional organizations. Apply for graduation via MavLink.		

**Credits** **14****Total Credits** **120-122**

**Upper Level Credits:** Students need 27 upper level credits throughout the degree with at least 18 upper level credits within the major. Electives may need to be selected at the 3000-4000 level to reach these minimums.

**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, World 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

**GPA Requirements: 2.0**

**Note:** This plan provides a general guide, but your specific courses, experiences, and career goals may differ. Work with your academic advisor to ensure you're meeting degree requirements and consult with career advisors to explore internships, research opportunities, and post-graduation plans. Regular check-ins will help you stay on track and make the most of your time at UNO!