

# Minnesota North College – Vermilion Campus

## Environmental Science

Academic Year 2022-23  
Associate of Science (60 credits)

### First Year

<b>FALL SEMESTER 2022 – 13 credits</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Hr Lc/Lb</b>
BIOL 1561 – General Biology of Cells (MnTC Goal 3)	(CLR)	4	(3/2)
COMM 1215 – Public Speaking (MnTC Goal 1) OR COMM 1220 – Interpersonal Communication (MnTC Goal 1)		3	
NSCI 1220 – Environmental Science (MnTC Goals 3 & 10)	(CLR)	3	
WQAL 1656 – Environmental Compliance	(CLR, CLW)	3	
<b>SPRING SEMESTER 2023 – 15 credits</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Hr Lc/Lb</b>
BIOL 1562 – General Biology of Organisms (MnTC Goals 3 & 10)	(BIOL1561)	4	(3/2)
ENGL 1231 – College Composition 1 (MnTC Goal 1)	(CLW)	4	
GEOL 1215 – Physical Geology (MnTC Goal 3)	(CLR)	4	(3/2)
MATH 1220 – College Algebra (MnTC Goal 4)	(MATH0300)	3	

### Second Year

<b>FALL SEMESTER 2023 – 16 credits</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Hr Lc/Lb</b>
CHEM 1521 – General Chemistry 1 (MnTC Goal 3)	(MATH1220)	4	(3/2)
ENGL 1232 – College Composition 2 (MnTC Goal 1)	(ENGL1231)	3	
POLS 1215 – American Government and Politics (spring) (MnTC Goals 5 & 9) OR POLS 1320 – State and Local Government (fall) (MnTC Goals 5 & 9)	(CLR) (CLR)	3	
SOC 1200 – Introduction to Sociology (MnTC Goals 5 & 7)	(CLR)	3	
WSHD 2258 – Soils and Hydrology	(BIOL1200 or 1562)	3	(2/2)
<b>SPRING SEMESTER 2024 – 16 credits</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Hr Lc/Lb</b>
BIOL/NRT 2455 – Limnology (MnTC Goal 3?)	(BIOL1200 or 1561)	3	(2/2)
CHEM 1522 – General Chemistry 2 (MnTC Goal 3)	(CHEM1521)	4	(3/2)
MATH 1215 – Statistics (MnTC Goal 4)	(MATH0200)	4	
NRT 2315 – Introduction to Geographic Information Systems	(NRT1211 or WQAL/WSHD1656)	2	(1/2)
PHIL 1230 – Ethics (MnTC Goals 6 & 9) or NSCI 1225 – Meteorology (MnTC Goal 3) or SOC 2265 – Environmental Sociology (MnTC Goal 8 & 10)	(CLR, CLW) (CLR) (CLR)	3	

#### Additional Recommended Courses:

The following courses may meet additional requirements at transfer institutions: BIOL/NRT 1255 – Dendrology and Plant Ecology, BIOL 23255 – Ecology, MATH 1311 – Calculus 1, MATH 1312 – Calculus 2, NSCI 1225 – Meteorology, and/or SOC 2265 – Environmental Sociology (if not already taken). See your advisor for additional information. Students wishing to also complete the MnTC or the Liberal Arts and Sciences AA often can do so with a minimal number of additional courses and should connect with their advisor.

### Program Description

The Environmental Science AS at Vermilion includes the broad range of science and mathematics courses necessary to ensure that students are well-prepared for transfer into bachelor's degree programs in Environmental Science or Environmental Studies.

### Occupational Titles

Upon transfer to a 4-year institution and subsequent completion of a Bachelor of Science Degree in Environmental Science or Environmental Studies, a wide variety of positions are available to students, often dependent upon the particular focus taken for their major. These positions include that of field researcher, restoration ecologist, natural resource scientist, environmental chemist, environmental consultant, sustainable farmer, renewable power researcher, environmental advocate, environmental protection worker, public policy specialist, and environmental planner. The Environmental Science AS also provides a strong foundation for students earning bachelor's degrees in education, particularly for those pursuing teaching careers in science.

## Environmental Science A.S.

### Program Learning Outcomes

Graduates of this program will:

1. Demonstrate understanding of scientific theories, formulate and test hypotheses, collect data, and apply higher-order problem-solving and modeling strategies.
2. Communicate clearly, with logical and coherent arguments, science-related topics and policies, as well as experimental findings, analyses, and interpretations.
3. Explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems.
4. Recognize that environmental issues are interdisciplinary in nature, with ethical dimensions and interrelationships of bio-physical and socio-cultural systems.
5. Evaluate critically environmental and natural resource issues, and propose and assess alternative solutions to environmental problems.

### Transfer and Articulation Agreements

The strong composition of MnTC courses facilitates transfer to many 4-year institutions. (Students wishing to complete the MnTC, or simultaneously complete the Liberal Arts and Sciences AA, should talk with their advisor.)

Strong transfer relationships exist with University of Minnesota Crookston, Bemidji State University, St. Cloud State University, University of Minnesota Mankato, and Northland College, and Articulation Agreements are in progress.

### Program Faculty Contact

**Wade Klingsporn** (wade.klingsporn@minnesotnorth.edu or 218-235-2145)



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