

BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE

The environmental studies program leading to a Bachelor of Science (BS) degree will prepare students to enter the job market as environmental specialists or to continue in their education in a graduate program. Students in environmental science will complete:

- 36-39 s.h. of environmental studies courses
- 30-31 s.h. of support courses in science and mathematics
- a prescribed minor of 18 s.h

The minor must include 9 s.h. of upper division courses (3000 level and above) and may be in:

- biology or biomathematics
- chemistry
- economics
- environmental geography
- environmental health and safety
- geographic information science
- geoscience or environmental geology
- mathematics or statistics
- mechanical engineering
- public health

Credits may include those required for support science and mathematics, as applicable. The minor must be approved by the University. The student is welcome to take additional courses in other departments as electives. Students are encouraged to develop teamwork, communication, computer and problem-solving skills. This degree may be earned in eight semesters if students average 15 hours per semester.

Majors transferring in from other programs at YSU or from other universities may use up free electives and/or require additional semesters or summers of study. College and university requirements apply (total hours, upper division hours, general education goals, etc.). One writing intensive, oral intensive, critical thinking intensive, and capstone course can be satisfied within this program.

COURSE	TITLE	S.H.
FIRST YEAR REQUIREMENT - STUDENT SUCCESS		
YSU 1500	Success Seminar	1-2
or SS 1500	Strong Start Success Seminar	
or HONR 1500	Intro to Honors	
General Education Requirements		
ENGL 1550	Writing 1	3
or ENGL 1549	Writing 1 with Support	
ENGL 1551	Writing 2	3
CMST 1545	Communication Foundations	3
Mathematics Requirement (met with MATH in major)		
Arts and Humanities (6 s.h.)		
Natural Sciences (2 courses, 1 with lab) (6-7 s.h.)		
Requirement met through science courses in major		
Social Science (6 s.h.)		
Social and Personal Awareness (6 s.h.)		
Core Requirements		
ENST 2600 & 2600L	Foundations of Environmental Studies and Foundations of Environmental Studies Laboratory	4
ENST 3700 & 3700L	Environmental Chemistry and Environmental Chemistry Lab	4

ENST 3730	Air Quality	3
ENST 3750	Seminar	1
ENST 3751	Water Quality Analysis	3
or ENST 3752	Soil Quality and Analysis	
ENST 3780	Environmental Research	2
or ENST 3784	Research Experience in Environmental Science	
ENST 3790	Internship/Cooperative	4
ENST 5810	Environmental Safety	3

Core Options, select 1

ENST 4822	Water Pollution Control	3
or ENST 5800	Environmental Impact Assessment	
or ENST 5830	Toxicology and Risk Assessment	

Select 3 ENST Electives (any >3700). One course may come from these electives:

GEOL 5817	Environmental Geochemistry	3
BIOL 3780	General Ecology	5
GEOL 5815	Geology and the Environment 2	3
GEOG 3703	Human Impacts on the Environment	3
CEEN 3717	Hydraulic Design	4

BIOL Course >3700

Support Courses in Science and Mathematics

CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory ¹	4
CHEM 1516 & 1516L	General Chemistry 2 and General Chemistry 2 Laboratory ¹	4
CHEM 1515R & CHEM 1516R	Recitation for General Chemistry 1 and Recitation for General Chemistry 2 (optional)	
BIOL 2602 & 2602L	General Biology: Organisms and Ecology and General Biology: Organisms and Ecology Laboratory	4
GEOL 1505 & 1505L	Physical Geology and Physical Geology Laboratory (satisfies GER Science or Lab) ¹	4
MATH 1571	Calculus 1 ²	4
or MATH 1570	Applied Calculus 1	
GEOG 2611	Geospatial Foundations	3
STAT 2601	Introductory Statistics	3
or STAT 2625	Statistical Literacy and Critical Reasoning	
or STAT 3717	Statistical Methods	
or STAT 3743	Probability and Statistics	
PHYS 1501	Fundamentals of Physics 1	4
or PHYS 2610	General Physics 1	

Minor

Select 17 s.h. from approved minors; 1/3 must be at the 3700 level or higher	17
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Total Semester Hours 120-121

¹ Satisfies General Education Science or Science Lab Domain.

² Satisfies General Education Mathematics Domain.

³ Satisfies General Education Science Domain.

Year 1

Fall		S.H.
YSU 1500	Success Seminar	1
CHEM 1515 & 1515L	General Chemistry 1 and General Chemistry 1 Laboratory (R, NS)	4
ENGL 1550	Writing 1 (GE)	3-4
or ENGL 1549	or Writing 1 with Support	

ENST 2600 & 2600L	Foundations of Environmental Studies and Foundations of Environmental Studies Laboratory (R)	4
GER SS or AH course		3

Semester Hours **15-16**

Spring

CHEM 1516 & 1516L	General Chemistry 2 and General Chemistry 2 Laboratory (R, NS)	4
ENGL 1551	Writing 2 (GE)	3
Elective Support Course (R) ¹		3
GER SS or AH course		3
GER SPA Course		3

Semester Hours **16**

Year 2**Fall**

MATH 1570 or MATH 1571	Applied Calculus 1 (GE) or Calculus 1	4
BIOL 2601 & 2601L	General Biology: Molecules and Cells and General Biology: Molecules and Cells Laboratory (R, NS)	4
CMST 1545	Communication Foundations (GE)	3
ENST 3730	Air Quality (R)	3

Semester Hours **14**

Spring

GEOL 1505 & 1505L	Physical Geology and Physical Geology Laboratory (R)	4
Support Course (R) ¹		3
GER SPA Course		3
GER SS or AH course		3
Elective Course		3

Semester Hours **16**

Year 3**Fall**

ENST 3700 & 3700L	Environmental Chemistry and Environmental Chemistry Lab (R)	4
ENST 3781	Environmental Sampling Methods (R)	3
ENST 5860	Environmental Regulations (R)	3
Minor Course		3
Minor Course		3

Semester Hours **16**

Spring

ENST 5800	Environmental Impact Assessment (R)	3
ENST 3751	Water Quality Analysis (R)	3
ENST 3750	Seminar (R)	1
Minor Minor Course		3
Minor Course > 3700		3
GER SS or AH course		3

Semester Hours **16**

Year 4**Fall**

ENST 5830	Toxicology and Risk Assessment (R)	3
ENST 3790	Internship/Cooperative (R)	4
Minor Course		3
Minor Course		3
Upper Division Course > 3700		3

Semester Hours **16**

Spring

ENST 3780	Environmental Research (R)	2-4
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ENST 5810	Environmental Safety (R)	1
Minor Course > 3700		3
Minor Course > 3700		3
Upper Division Course > 3700		3

Semester Hours **12-14**

Total Semester Hours **121-124**

¹ Elective support courses, select two of the following: PHYS 1501 Fundamentals of Physics 1, GEOG 2630 Weather, or STAT 2601 Introductory Statistics or STAT 3717 Statistical Methods.

Request a Graduation Evaluation after completing 80-85 s.h. from the STEM Advising Center, 2325 Moser Hall, (330) 941-2512.

Learning Outcomes

The student learning outcomes for the BS in environmental science are as follows:

- Communicate effectively using the language, concepts, and models of environmental science in written, visual, and numerical formats.
- Properly apply the scientific method to research an environmental problem and formulate conclusions.
- Demonstrate ability to apply appropriate field- and laboratory-based methods (of acquiring, quantitatively and qualitatively analyzing and interpreting environmental data and information).
- Demonstrate understanding of pollution sources, pollution prevention strategies, and waste management.