ENVIRONMENTAL SCIENCE MAJOR (M)

The study of the environment clearly aligns with the University's mission to prepare Christians for service in the world. In a society that too often sees faith and science in disagreement, the Christian understanding of stewardship clearly demonstrates alignment of Christian ethics and scientific principles in a way that reflects well on Christianity.

The combination of CUW's Christian worldview, proximity to significant ecosystems (notably Lake Michigan), and CCES resources, including new showcase aquaponics and walleye breeding facilities, means that the student will have an opportunity to develop into competent scientists with a Christian worldview.

Program Learning Outcomes

- Knowledge base: demonstrate an understanding of and an ability to explain major biological and related scientific concepts.
- Laboratory procedures: demonstrate the ability to appropriately collect and analyze data while utilizing laboratory equipment and procedures safely and effectively
- Scientific Inquiry: develop investigative and critical thinking skills to explore complex questions and solve challenging scientific problems
- Scientific Communication: demonstrate the ability to communicate scientific information effectively to both scientists and non-scientists using oral and written forms of expression
- Vocation and Ethics: recognize how vocations in science provide opportunities for service to Christ and others and necessitate ethical behavior in all aspects of science
- God's Design and Stewardship: demonstrate an understanding of how/why a Christian sees evidence of God's design in nature and how to be good stewards of His creation

Curriculum

Code	Title	Hours
Core Requirements (https://catalog.cuw.edu/undergraduate/university/acad-prog/trad/core/)		**45**
Major Requirements		**59-61**
Electives		**14-16**
Total Hours		**120**

Major Requirements

Code	Title	Hours
Required Courses		
Foundation:		
ENV 1800	Environmental Science (Required Core Course - Natural World: Lab Science)	
MATH 2010	Calculus I (Required Core Course - Natural World: Mathematics)	
BIO 1401 & BIO 1402	General Biology I and General Biology II	8
BIO 3760 & BIO 3761	Ecology of the Tropics and Ecology of the Tropics Lab (Required Core Culture Designation)	4
CHEM 1414 & CHEM 1424	General Chemistry I and General Chemistry II	8
ENV 2500	Earth Science	4
MATH 2050	Statistics I	3
PHYS 1514	General Physics I	4
or PHYS 1714	University Physics I	
Environmental tools:		
CHEM 2204	Analytical Chemistry	4
ENV 1400	Introductory GIS	4
ENV 1500	Remote Sensing from Satellites and Drones	3
or ENV 3200	Environmental Data Analysis	
Policy and social perspective: (Required Core Course - Human Beings & Being Human)		
PHIL 2400	Environmental Ethics	
or LEGL 230(	Environmental Law & Politics	
or SCI 2400	Cosmogony	
Concentration areas:		*14-16*
Take at least four courses in your area of concentration. The course with an "*" must be taken as one of the four courses in the concentration.		
Ecological Concentration		
Environmental Chemistry Concentration		
Capstone:		*3*
Take at least 3 credits - not necessarily at the same time		
Completion of the third credit requires a cumulative output and other summative assessments		
ENV 4990	Advanced Applied Field Research	
Total Hours		**59-61**

Ecological Concentration

Code	Title	Hours
BIO 2400	Botany	4
BIO 2500	Zoology	4
BIO 2600	Biology of Microorganisms	4
BIO 3400	Genetics	4
BIO 4100	Ecology (*)	4
ENV 1600	Meteorology	3
ENV 2200	Water Quality and Aquaponics	4
ENV 2400	Native Plants of Wisconsin	4
ENV 2600	Oceanography	4
ENV 3200	Environmental Data Analysis	3

Other courses with approval of the department chair of Life & Earth Sciences

Environmental Chemistry Concentration

Code	Title	Hours
BIO 2600	Biology of Microorganisms	4
CHEM 2304	Descriptive Inorganic Chemistry	4
CHEM 2414	Organic Chemistry I	4
CHEM 2424	Organic Chemistry II	4
CHEM 3214	Biochemistry	4
CHEM 4524	Instrumental Analysis (*)	4
ENV 2200	Water Quality and Aquaponics	4

ENV 3200	Environmental Data Analysis (if not taken above)	3

Other courses with approval of the department chair of Life & Earth Sciences

Plan

Course	Title	Hours
Semester 1		
BIO 1401	General Biology I	4
CHEM 1414	General Chemistry I	4
ENG 1040	Introduction to Writing	3
CCE 1010	Christian Citizen	3
COMM 1100 or COMM 2100	Public Speaking or Interpersonal Communication	3
	Hours	**17**
Semester 2		
BIO 1402	General Biology II	4
CHEM 1424	General Chemistry II	4
CCE 1040	Science & Humanity	3
REL 1000	The Bible	3
MATH 2050	Statistics I	3
	Hours	**17**
Semester 3		
MATH 2010	Calculus I	4
LEGL 2300 or PHIL 2400 or SCI 2400	Environmental Law & Politics or Environmental Ethics or Cosmogony	3
ENV 1400	Introductory GIS	4
CCE 1030	Western Thought & Worldview	3
HHP 1100	Stewardship of the Body	1
	Hours	**15**
Semester 4		
CHEM 2204	Analytical Chemistry	4
ENV 1800	Environmental Science	4
CCE 1020	Western Culture & Worldview	3
CORE		3
	Hours	**14**
Semester 5		
MAJOR ELECTIVE		4
ENV 2500	Earth Science	4
REL 1100	Christian Faith	3
HHP		1
CORE		3
	Hours	**15**
Semester 6		
ENV 1500 or ENV 3200	Remote Sensing from Satellites and Drones or Environmental Data Analysis	3
ENV 4990	Advanced Applied Field Research	1
BIO 3760	Ecology of the Tropics	3
BIO 3761	Ecology of the Tropics Lab	1
CORE		3
ELECTIVE OR MINOR		3
	Hours	**14**
Semester 7		
PHYS 1514 or PHYS 1714	General Physics I or University Physics I	4
ENV 4990	Advanced Applied Field Research	1
MAJOR ELECTIVE		4
ELECTIVE OR MINOR		3
ELECTIVE OR MINOR		3
	Hours	**15**
Semester 8		
ENV 4990	Advanced Applied Field Research	1
MAJOR ELECTIVE		4
MAJOR ELECTIVE		4
ELECTIVE OR MINOR		3
ELECTIVE OR MINOR		1
	Hours	**13**
	Total Hours	**120**

Course options and schedule are subject to change.