

Madonna University

Environmental Science • College of Science & Mathematics

About the Program

Overview

The environmental science program seeks to foster the appreciation and acquisition of knowledge and skills in the field of environmental science and its impact upon contemporary society.

Career Options

- Fisheries Management Biologist
- Conservation Database Specialist
- Conservation Assistant
- Turtle Conservation Biologist
- Restoration Team Member
- Field Technician
- Community Conservationist
- Associate Research Support Specialist
- Environmental Inspector
- Secondary Education Environmental Teacher
- K-8 Education Environmental Teacher
- Park and Recreation Departments
- Wetlands Specialist
- Environmental Scientist
- Environmental Oversight Inspector
- Watershed Scientist
- Environmental Consultant
- Fisheries Observer

Testimonials

"The mercury and *E coli* research, I believe, definitely, helped me obtain the job."

*Madonna ES Graduate
City of Flint, Water & Plant Facilities*

"The Environmental Science Degree with the aqueous research has prepared me for what I do now."

*Madonna ES Graduate
Oakland County Health Department*

Plan of Study – Bachelor's Degree Environmental Science

Courses are offered at Madonna's Livonia Campus (L) and/or at the Orchard Lake Center (OL) as noted

Required Major Courses	Campus*	Credits
BIO 1030 General Biology I	OL or L	4 s.h.
BIO 1040 General Biology II	OL or L	4 s.h.
CHM 1110 General Chemistry I	OL or L	4 s.h.
CHM 1120 General Chemistry II	OL or L	4 s.h.
CHM 2210 Organic Chemistry I	L	4 s.h.
CHM 2220 Organic Chemistry II	L	4 s.h.
PHY 2530 General Physics I	OL or L	4 s.h.
PHY 2540 General Physics II	OL or L	4 s.h.
ENV 3210 Limnology: The Study of Lakes	OL	3 s.h.
ENV 3320 Environmental Analysis	OL	4 s.h.
ENV 4710 Environmental Pollutions	OL	4 s.h.
ENV 4950 Senior Seminar	L	2 s.h.
ESS 3260 Meteorology	OL or L	3 s.h.
Major Electives (see back for choices)		<u>6 s.h.</u>
Total		54 s.h.

Required Support Courses for major

MTH 1210 Precalculus or	OL or L	
MTH 2510 Calculus w/Analytic Geometry I	OL or L	5 s.h.
MTH 2350 Probability & Statistics	OL or L	<u>4 s.h.</u>
Total		9 s.h.

Environmental Science Minor for Biology majors – required courses

CHM 2210 Organic Chemistry I	4 s.h.
CHM 2220 Organic Chemistry II	4 s.h.
ENV 3210 Limnology: The Study of Lakes	3 s.h.
ENV 3320 Environmental Analysis	4 s.h.
ENV 4710 Environmental Pollutions	4 s.h.
ESS 3260 Meteorology	3 s.h.
Minor electives (see back for choices)	<u>2 s.h.</u>
Total	24 s.h.

Environmental Science Minor for Chemistry majors – required courses

BIO 1030 General Biology I	4 s.h.
BIO 1040 General Biology II	4 s.h.
ENV 3210 Limnology: The Study of Lakes	3 s.h.
ENV 3320 Environmental Analysis	4 s.h.
ENV 4710 Environmental Pollutions	4 s.h.
ESS 3260 Meteorology	3 s.h.
Minor electives (see back for choices)	<u>2 s.h.</u>
Total	24 s.h.

Required Support Course for Chemistry majors

MTH 2350 Probability and Statistics	4 s.h.
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For Admission Information

Office of Undergraduate Admissions
Madonna University
36600 Schoolcraft Rd.
Livonia, MI 48150-1176
734-432-5339
800-852-4951 (ext. 5339)
Fax: 734-432-5424

www.madonna.edu
e-mail: admissions@madonna.edu

OR

Linda McIntyre
Coordinator of Enrollment Services
Madonna University
Orchard Lake Center
3735 Commerce Road
Orchard Lake, MI 48324
248-683-0523
Fax: 248-683-1756
email: lmcintyre@madonna.edu

For Program Information

Dr. Ted Gish
Madonna University
Orchard Lake Center
3735 Commerce Road
Orchard Lake, MI 48324
248-683-0415
email: tgish@madonna.edu

Madonna University reserves the right to withdraw or modify information in the brochure.

See Advisor/Admissions Office for current information.

Madonna University guarantees the right to equal educational opportunity without discrimination because of race, religion, sex, national origin, age, or disabilities.

Environmental Science Major and Minor Electives

Choose from the following:

- BIO 2260 Microbiology (4 s.h.)
- BIO 3170 Invertebrate Zoology (4 s.h.)
- CHM 3610 Biochemistry I (4 s.h.)
- ENG 2000 Technical Writing (3 s.h.)
- ENV 2930/3930 Internship in Env Sci (1-4 s.h.)
- ENV 4700 Environmental Investigation (3 s.h.)
- ESS 2160 Earth Science (4 s.h.)
- NFS 2760 Food Service Sanitation (2 s.h.)
- OSH 4510 Hazardous Materials (3 s.h.)
- RST 3100 Franciscan Values, Social Justice and Service (3 s.h.)
- RST 4090 Environmental Ethics (4 s.h.)

Program Objectives

Encourage habits of:

- deductive reasoning
- independent thinking
- scientific method
- self-reliance
- environmental stewardship

Develop:

- technical skills in the biological and physical sciences
- oral and written communication skills
- an understanding of current problems in limnology: the study of lakes.

Unique Features of Environmental Science

The Orchard Lake Center of Madonna University has direct access to Orchard Lake. The lake has been and will continue to be a major source of our research endeavors (with not one, but two pontoon boats). No other school has this advantage. Our Environmental Science degree is a new program to help students better understand the environment. The program, like our biology and chemistry program, will be research based.

With the ever increasing ratio of human population to land space, the need for environmental education has never been greater. The National Geographic magazine cites that one of the most asked questions out of approximately 50,000 letters received in 1996 dealt with what can we do to help protect the environment.

The number one threat to Michigan's state environmental future is, surprisingly, the public's lack of environmental awareness. The recommended remedy is education at the elementary, secondary, and post-secondary level.

For the past ten years, from pollution to a strong, ever-increasing demand, Michigan's precious water resource has been under assault. In the future, water may become an even more important commodity than oil. Understanding the hydrology process in the environment is a tool that is needed to protect Michigan's number one resource.

We work with the community, e.g. The City of Orchard Lake Village, and local schools, e.g., West Bloomfield High School and St. Mary's Prep.