Michigan State University | College of Engineering | Engineering Undergraduate Studies
Engineering Building, 428 S. Shaw Lane, Room 1415, East Lansing MI 48824 | (517) 355-6616
http://www.egr.msu.edu/undergraduate/academic/degree-programs

Environmental Engineering

Accredited by the Engineering Accreditation Commission of ABET, www.abet.org

1. University Requirements: (23)

Writing, Rhetoric and American Cultures (WRA)		4
Integrative Studies in Humanities (IAH)		8
Integrative Studies in Social Sciences (ISS)		8
Bioscience: BS161 Cell and Molecular Biology		3

2. College Requirements: (30)

CEM 141	General Chemistry	4
OR		
CEM 151	General and Description Chemistry	4
EGR 100	Introduction to Engineering Design	2
EGR 102	Introduction to Engineering Modeling	2
MTH 132	Calculus I	3
MTH 133	Calculus II	4
MTH 234	Multivariable Calculus	4
MTH 235	Differential Equations	3
PHY 183	Physics for Scientists & Engineers I	4
PHY 184	Physics for Scientists & Engineers II	4

3. Major Requirements: (66-68)

a. Complete all of the following courses: (48)

BS 162	Organismal and Population Biology	3
CE 221	Statics	3
CE 273	Civil & Environmental Engineering Measurements	2
CE 274	Graphics for Civil & Environmental Engineers	1
CE 321	Introduction to Fluid Mechanics	4
CE 371	Sustainable Civil & Environmental Egr Systems	3
CE 372	Risk Analysis in Civil & Environmental Engineering	2
CE 495	Senior Design in Civil & Environmental Engineering	4
CEM 161	Chemistry Laboratory I	1
CHE 201	Materials and Energy Balances	3
ENE 280	Principles of Environ Engineering and Science	3
ENE 421	Engineering Hydrology	3
ENE 422	Applied Hydraulics	3
ENE 480	Environmental Measurements Laboratory	1
ENE 481	Environmental Chemistry: Equilibrium Concepts	3
ENE 483	Water & Wastewater Engineering	3
ENE 487	Microbiology for Environmental Science & Egr	3
ENE 489	Air Pollution: Science and Engineering	3

b. Complete one of the following courses: (3)

CEM 142	General & Inorganic Chemistry	3
CEM 152	Principles of Chemistry	3

c. Complete one of the following courses: (3-4)

CHE 321	Thermodynamics for Chemical Engineering	4
ME 201	Thermodynamics	3

d. Complete one of the following courses: (3-4)

GLG 201	The Dynamic Earth	4
GLG 301	Geology of Continents and Oceans	3

e. Technical Electives. Complete at least three courses for a minimum of 9 credits of electives from the list below or by approval of the department. Students may substitute a 3-credit experiential education experience for one of the three courses. The experience is obtained in a minimum of three out-of-classroom experiences through engineering cooperative education. Students must contact the department for approval.

ANS 427	Environmental Toxicology and Society	3
BE 469	Sustainable Bioenergy Systems	3
BE 482	Diffuse-Source Pollution Engineering	3
CSS 455	Environmental Pollutants in Soil and Water	3
CSUS 320	Environmental Planning and Management	3
CSUS 425	Environmental Impact Assessment	3
FW 414	Aquatic Ecosystem Management	3
FW 417	Wetland Ecology and Management	3
FW 420	Stream Ecology	3
FW 443	Restoration Ecology	3
FW 472	Limnology	3
GLG 411	Hydrogeology	3
GLG 412	Glacial Geology & the Record of Climate Change	3
GLG 421	Environmental Geochemistry	4
IBIO 303	Oceanography	4
IBIO 353	Marine Biology (W)	4
IBIO 355	Ecology	3
IBIO 446	Environmental Issues and Public Policy	3
ISS 310	People and Environment (I)	4

Other Electives (Variable)

The requirements listed above apply to students admitted to the Department of Civil & Environmental Engineering (CEE) beginning Fall 2016. The Department of Civil & Environmental Engineering (CEE) constantly reviews program requirements and reserves the right to make changes as necessary. Consequently, each student is strongly encouraged to consult with his/her adviser to obtain assistance in planning an appropriate schedule of courses. Students who have questions about Environmental Engineering should contact the Civil & Environmental Engineering Department Advising Office, 3579 Engineering Building, phone (517) 355-3274. For scheduling academic advising appointments visit: https://msu.campus.eab.com

Total Credits Required for Degree **128**

Last revised September 2016

Environmental Engineering
General Sample Program

Freshman Year				Sophomore Year			
Fall	**Credits**	**Spring**	**Credits**	**Fall**	**Credits**	**Spring**	**Credits**
CEM 161	1	CEM 142 or 152	3	CE 274	1	BS 161	3
CEM 141 or 151	4	CE 273	2	ENE 280	3	GLG 201 or 301	4/3
EGR 100	2	EGR 102	2	MTH 234	4	MTH 235	3
MTH 132	3	MTH 133	4	PHY184	4	CE 221	3
WRA 1XX	4	PHY 183	4	IAH 201-210	4	ISS 2XX	4
		Elective	3				
Total	**14**	**Total**	**18**	**Total**	**16**	**Total**	**16/17**

Junior Year				Senior Year			
Fall	**Credits**	**Spring**	**Credit**	**Fall**	**Credit**	**Spring**	**Credits**
BS 162	3	CE 372	2	Tech Elective	3/4	Tech Elective	3/4
CE 371	3	ENE 422	3	Elective	3/4	Elective	3/4
CE 321	4	ENE 487	3	ENE 421	3	CE 495	4
CHE 201	3	ENE 489	3	ENE 483	3	ISS 3XX	4
ENE 480	1	ME 201 or CHE 321	3/4	IAH 211 or >	4		
ENE 481	3	Tech Elective	3/4				
Total	**17**	**Total**	**17/19**	**Total**	**16/18**	**Total**	**14/16**

Program Description

The environmental engineering major is designed to prepare graduates with the engineering and scientific principles to analyze, design, and manage environmental systems, including water supplies, wastewater treatment facilities, air pollution control systems, surface and groundwater resources, and landfills. The program provides a thorough background in engineering fundamentals, along with a broad understanding of mathematical, physical, chemical, and biological concepts as they relate to environmental engineering.

PROGRAM EDUCATIONAL OBJECTIVES FOR CIVIL AND ENVIRONMENTAL ENGINEERING

Department of Civil and Environmental Engineering
Michigan State University
November 2013

The Department of Civil and Environmental Engineering has adopted the following program educational objectives (PEOs) which are shared by its baccalaureate programs in both civil and environmental engineering. Recent graduates (e.g., 3-5 years after graduation) of the programs will be enjoying career success and:

- have advanced in civil or environmental engineering practice and/or pursued advanced studies;
- be engaged in life-long learning;
- be engaged in professional practice consistent with the principles of sustainable development;
- have pursued continuing professional development and leadership; and
- have obtained licensure.