

Environmental Engineering

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: BS 161 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: (65-73)

A. Complete all of the following courses: (44)

BS 162 Organismal and Population Biology	3
CE 221 Statics	3
CE 271 Introduction to Civil Engineering	4
CE 272 Civil and Environmental EngrAnalysis	3
CE 321 Introduction to Fluid Mechanics (W)	4
CE 495 Senior Design in Civil Engineering	4
CEM 161 Chemistry Laboratory I	1
CHE 201 Materials and Energy Balances	3
ENE 280 Principles of Environ Engr and Science	3
ENE 421 Engineering Hydrology	3
ENE 480 Environmental Measurements Lab	1
ENE 481 Environ Chem: Equilibrium Concepts	3
ENE 483 Water & Wastewater Engr	3
ENE 487 Microbiology for Environ Science & Engr	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 Chem Engr	4
ME 201 Thermodynamics	3

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

GLG 201 The Dynamic Earth	4
GLG 301 Geology of the Great Lakes Region	3

E. Major Tracks: (12-18)

Complete the requirements of one of the tracks below.

Geo-environmental Engineering Track: (18)

CE 312 Soil Mechanics	4
CE 337 Civil Engineering Materials I	4
CE 418 Geotechnical Engineering	3
CE 485 Landfill Design	3
ME 222 Mechanics of Deformable Solids	4

Water Resources Track: (13)

ENE 422 Applied Hydraulics	3
GLG 411 Hydrogeology	3
GLG 412 Glacial Geology & Rcrd of Climate Chng	4
GLG 421 Environmental Geochemistry	3

General Track: (12)

1. Complete at least one of the following courses: (3)

CE 485 Landfill Design	3
ENE 422 Applied Hydraulics	3

2. Additional credits to total 12 in the track, from technical courses at the 300 level or above, approved by the Department. Courses should be selected to provide some focus related to an application area of environmental engineering.

Other Electives (Variable)

The requirements listed above apply to students admitted to the Department of Civil & Environmental Engineering (CEE) beginning Fall 2011. 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://www.egr.msu.edu/adcalendar/>

Total Credits Required for Degree 128

Environmental Engineering General Sample Program

Freshman Year				Sophomore Year			
Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
CEM 141/151	4	CE 271	4	CE 221	3	BS 161	3
CEM 161	1	EGR 102	2	CE 272	3	ENE 280	3
EGR 100	2	MTH 133	4	IAH 201-210	4	ISS 2XX	4
WRA 1XX	4	PHY 183	4	MTH 234	4	GLG 201 or 301	3/4
MTH 132	3	CEM 142/152	3	PHY 184	4	MTH 235	3
Total	14	Total	17	Total	18	Total	16/17

Junior Year				Senior Year			
Fall	Credits	Spring	Credits	Fall	Credits	Spring	Credits
Major Track	3/4	ENE 487	3	Major Track	3/4	CE 495	4
CE 321	4	ENE 489	3	Major Track	3/4	Major Track	3/4
CHE 201	3	IAH 211 or higher	4	ENE 421	3	ISS 3XX	4
BS 162	3	Major Track	3/4	ENE 483	3	Elective	Va
ENE 480	1	CHE 321 or ME	3/4	Elective	Va		
ENE 481	3						
Total	17/18	Total	16/18	Total	12-14+/Va	Total	11-12+/Va

Program Description

The environmental engineering major is designed to prepare students 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
 Spring 2009

The Department of Civil and Environmental Engineering, through its baccalaureate programs in civil engineering and environmental engineering, provides opportunities to obtain the knowledge, skills, and professional perspective needed for:

- advancement in civil or environmental engineering practice and the pursuit of advanced studies;
- life-long learning;
- professional practice consistent with the principles of sustainable development;
- continuing professional development and leadership; and
- licensure;

all leading to career success.