Michigan State University | College of Engineering | Engineering Undergraduate Studies
Wilson Hall, 219 Wilson Road, Room C101, East Lansing MI 48825 | (517) 355-6616

Environmental Engineering

1. University Requirements: (23)

Writing, Rhetoric and American Cultures (WRA)	4
Integrative Studies in Humanities (IAH)	8
IAH 201-210 and IAH 211 or >	
Integrative Studies in Social Sciences (ISS)	8
ISS 2XX and ISS 3XX	
Bioscience: BS 161 Cell and Molecular Biology	3

2. College Requirements: (30)

*CEM 141	General Chemistry	4
OR		
*CEM 151	General and Descriptive 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

** College Admission Requirement*

3. Major Requirements: (68-72)

a. Complete all of the following courses: (50)

BS 162	Organismal and Population Biology	3
CE 221	Statics	3
CE 274	Graphics for Civil & Environmental Engineers	1
CE 275	GIS for Civil & Environmental Engineers	1
CE 321	Introduction to Fluid Mechanics	4
CE 371	Sustainable Civil & Environmental Engr Systems	3
CE 372	Risk Analysis in Civil & Environmental Engineering	3
CE 495	Senior Design in Civil & Environmental Engineering	4
CEM 161	Chemistry Laboratory I	1
CHE 201	Material 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	2
ENE 481	Environmental Chemistry: Equilibrium Concepts	3
ENE 483	Water & Wastewater Engineering	4
ENE 487	Microbiology for Environmental 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 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 the Great Lakes Region	3

e. Engineering Electives. Complete at least one course for a minimum of 3 credits of electives from the list below or by approval of the department. Students must contact the department for approval.

BE 449	Human Health Risk Analysis for Engr Ctrls	3
BE 469	Sustainable Bioenergy Systems	3
BE 482	Engineering Ecological Treatment Systems	3
BE 484	Water Resource Recovery Engineering	3
CE 473	Smart and Sustainable Building Design and Operations	3
CE 485	Landfill Design	3
ENE 472	Life Cycle Assessment of Energy Technologies	3

f. Technical Electives. Complete at least two courses for a minimum of 6 credits of electives from the list below, list above (e) 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
CSS 455	Environmental Pollutants in Soil and Water	3
CSUS 320	Environmental Planning and Management	3
FW 414	Aquatic Ecosystem Management	3
FW 417	Wetland Ecology and Management	3
FW 420	Stream Ecology	3
FW 472	Limnology	3
GLG 303	Oceanography	3
GLG 411	Hydrogeology	3
GLG 412	Glacial Geology and the Record of Climate Change	4
GLG 421	Environmental Geochemistry	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
PLB 443	Restoration Ecology	3

Other Electives (Variable)

Total Credits Required for Degree **128**

The requirements listed above apply to students admitted Environmental Engineering Program, which is administered by the Department of Civil & Environmental Engineering (CEE), beginning Fall 2021. The Department of Civil & Environmental Engineering (CEE) regularly reviews program requirements and reserves the right to make changes as necessary. Consequently, each student is strongly encouraged to consult with their advisor to obtain assistance in planning an appropriate schedule of courses.

Last revised May 2023

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Environmental Engineering
Sample Program

Freshman Year

Fall	Credits	Spring	Credits
CEM 161	1	CEM 142 or 152	3
CEM 141 or 151	4	EGR 102	2
EGR 100	2	MTH 133	4
MTH 132	3	PHY 183	4
WRA 101	4	Elective	3
Total	**14**	**Total**	**16**

Sophomore Year

Fall	Credits	Spring	Credits
CE 274	1	BS 161	3
CE 275	1	GLG 301 or 201	3/4
ENE 280	3	MTH 235	3
MTH 234	4	CE 221	3
PHY 184	4	ISS 2XX	4
IAH 201-210	4		
Total	**17**	**Total**	**16/17**

Junior Year

Fall	Credits	Spring	Credits
BS 162	3	ENE 422	3
CE 372	3	CE 371	3
CE 321	4	ENE 489	3
CHE 201	3	ME 201 or CHE 321	3/4
ENE 481	3	IAH 211 or >	4
Total	**16**	**Total**	**16/17**

Senior Year

Fall	Credits	Spring	Credits
Eng Elective	3	Tech Elective	3
Elective	2	Elective	2/3
ENE 421	3	CE 495	4
ENE 483	4	ENE 487	3
Tech Elective	3	ISS 3XX	4
ENE 480	2		
Total	**17**	**Total**	**16/17**

Last Revised May 2023

PROGRAM EDUCATIONAL OBJECTIVES FOR CIVIL AND ENVIRONMENTAL ENGINEERING

Department of Civil and Environmental Engineering
Michigan State University
August 2021

The **BS Environmental Engineering Program** has the following program educational objectives (PEOs). Recent graduates (e.g., 3-5 years after graduation) of the programs will be enjoying career success and:

- have advanced in 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.