

# Environmental Engineering

Accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org)

## 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
<b>OR</b>	
*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 Ctrl	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. Students who have questions about Environmental Engineering should contact the Civil & Environmental Engineering Department Advising Office, G67 Wilson Hall, phone (517) 355-3274. For scheduling academic advising appointments visit: <https://msu.campus.eab.com>

**Last revised March 2022**

## Environmental Engineering 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	EGR 102	2	CE 275	1	GLG 201 or 301	4/3
EGR 100	2	MTH 133	4	ENE 280	3	MTH 235	3
MTH 132	3	PHY 183	4	MTH 234	4	CE 221	3
WRA 101	4	Elective	3	PHY 184	4	ISS 2XX	4
				IAH 201-210	4		
<b>Total</b>	<b>14</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>17</b>	<b>Total</b>	<b>16/17</b>

  

Junior Year				Senior Year			
Fall	Credits	Spring	Credit	Fall	Credit	Spring	Credits
BS 162	3	Tech Elective	3/4	Tech Elective	3/4	Tech Elective	3/4
CE 372	3	ENE 422	3	Elective	3/4	Elective	2/3
CE 321	4	ENE 489	3	ENE 421	3	CE 495	4
CHE 201	3	ME 201 or CHE 321	3/4	ENE 483	4	ENE 487	3
ENE 480	2	CE 371	3	IAH 211 or >	4	ISS 3XX	4
ENE 481	3						
<b>Total</b>	<b>18</b>	<b>Total</b>	<b>15/17</b>	<b>Total</b>	<b>17/19</b>	<b>Total</b>	<b>16/18</b>

Last Revised April 2020

### 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.