### Environmental Engineering

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

Archived Curriculum Fall 2014 - Summer 2016

#### 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: (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 Engr Analysis 3
- CE 321 Introduction to Fluid Mechanics 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 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. Major Tracks: (12-18)**

**Geo-environmental Engineering Track: (17)**
- 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 3

**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 2014. 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

Last revised November 2015
Environmental Engineering
General Sample Program

Freshman Year

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<th>Spring Credits</th>
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Senior Year

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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
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.

Last Revised April 2014