Environmental Engineering, B.S.E.

Educational Objectives
Within a few years of graduation, graduates of the Bachelor of Science in Engineering (B.S.E.) program in environmental engineering will:

- be productive and contributing members of the environmental engineering profession as practitioners, entrepreneurs, researchers or teachers;
- be engaged in learning, understanding, and applying new ideas as the field develops;
- pursue advanced studies, if qualified and interested; and
- promote the safety, health, and welfare of the public and the environment through professional practice and civic leadership.

Requirements
The Bachelor of Science in Engineering with a major in environmental engineering requires a minimum of 133 s.h. of credit. Students must have a g.p.a. of at least 2.00 on all college work used to satisfy degree requirements as well as on all work undertaken at the University of Iowa.

All engineering students complete the B.S.E. core requirements, which include RHET:1030 Rhetoric; ENGR:1100 Introduction to Engineering Problem Solving and ENGR:1300 Introduction to Engineering Computing; and courses in chemistry, engineering mathematics and fundamentals, and physics.

They also complete the curriculum designed for their major program, which covers four major stems: mathematics and basic sciences, engineering topics, a focus area, and the General Education Component. For information about the curriculum stems, see the Bachelor of Science in Engineering, B.S.E. in the Catalog.

Students must select focus area courses according to guidelines established by the Department of Civil and Environmental Engineering. See "Focus Areas" below.

Focus Areas
Environmental engineering students may choose from a standard focus area developed by the department or create an individual focus area tailored to their interests.

For a description of the standard focus area options and guidelines for tailored focus areas in environmental engineering, see Elective Focus Areas on the Department of Civil and Environmental Engineering website.

Combined Programs
B.S.E./M.S. in Civil and Environmental Engineering
The College of Engineering offers a Bachelor of Science in Engineering/Master of Science program for environmental engineering undergraduate students who intend to earn a M.S. in civil and environmental engineering. B.S.E./M.S. students may attend the departmental graduate seminar and work on a master's thesis or research project while they are still undergraduates. They may count a limited amount of coursework toward both degrees. Once students complete the requirements for the bachelor's degree, they are granted the B.S.E., and they normally complete the M.S. one year later.

To be admitted to the degree program, students must have completed at least 80 s.h. and have a cumulative g.p.a. of at least 3.25. They must submit an application form to the Department of Civil and Environmental Engineering, along with a letter stating their proposed area of specialization and the name of a department faculty member willing to be their primary M.S. advisor. Graduate Record Examination (GRE) General Test scores are not required for the fast-track degree program.

Applications are due by May 15.

Career Advancement
Environmental engineers apply engineering principles to design systems that control pollution and protect public health. Environmental engineers restore air, soil, and water quality at contaminated sites, and develop systems that convert waste into clean energy. Environmental engineering addresses the complex food, energy, and water issues of the 21st century. On average, 93-98 percent of graduates are employed in their field of study or pursuing advanced education within seven months of graduation.

Engineering Career Services develops and promotes experiential education and professional opportunities for students. Professional staff coordinate the college's co-op and internship program, engage in employer outreach, and provide opportunities for students to network with employers, including an engineering career fair and other career-development programming each semester.

Engineering Career Services also offers individual advising and class presentations on résumé and cover letter preparation, job and internship search strategies, interviewing skills, and job offer evaluation.

Academic Plans
Sample Plan of Study
Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Environmental Engineering, B.S.E.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHET:1030</td>
<td>Rhetoric a</td>
<td>4</td>
</tr>
<tr>
<td>MATH:1550</td>
<td>Engineering Mathematics I: Single Variable Calculus b, c</td>
<td>4</td>
</tr>
<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I a, d</td>
<td>4</td>
</tr>
<tr>
<td>ENGR:1100</td>
<td>Introduction to Engineering Problem Solving e</td>
<td>3</td>
</tr>
<tr>
<td>ENGR:1000</td>
<td>Engineering Success for First-Year Students b</td>
<td>1</td>
</tr>
<tr>
<td>CSI:1600</td>
<td>Success at Iowa</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Hours: 16
### Spring
- **Fall**
  - MATH:1560 Engineering Mathematics II: Multivariable Calculus \(^a\) 4
  - MATH:2550 Engineering Mathematics III: Matrix Algebra \(^a\) 2
  - CHEM:1120 Principles of Chemistry II \(^a\) 4
  - PHYS:1611 Introductory Physics I \(^a\) 4
  - ENGR:1300 Introduction to Engineering Computing \(^b\) 3
  - CEE:1010 Introduction to Careers in Environmental Engineering \(^f\) 0
  - Hours 17

### Second Year
- **Fall**
  - MATH:2560 Engineering Mathematics IV: Differential Equations \(^a\) 3
  - CHEM:2210 Organic Chemistry I \(^a\) 3
  - ENGR:2110 Statics \(^a\) 2
  - ENGR:2130 Thermodynamics \(^a\) 3
  - STAT:2020 Probability and Statistics for the Engineering and Physical Sciences \(^a\) 3
  - CEE:1030 Introduction to Earth Science \(^a\) 3
  - Hours 17

### Spring
- GE: Engineering Be Creative \(^g\) 3
  - BIOL:1411 Foundations of Biology \(^a\) 4
  - ENGR:2710 Dynamics \(^a\) 3
  - CEE:3155 Principles of Environmental Engineering \(^f\) 4
  - CEE:3002 Technical Communication in Civil and Environmental Engineering \(^f\) 1
  - CEE:2010 Civil and Environmental Engineering Professional Practice and Ethics \(^f\) 1
  - Hours 17

### Third Year
- **Fall**
  - GE: Diversity and Inclusion \(^h\) 3
  - ENGR:2510 Fluid Mechanics \(^b\) 4
  - CEE:4150 Environmental Chemistry \(^e\) 3
  - CEE:4158 Solid and Hazardous Wastes \(^e\) 3
  - Elective: focus area course \(^i\) 3
  - CEE:3001 Leadership Skills for Engineers \(^e\) 1
  - Hours 17

### Spring
- GE: Approved Course Subjects \(^j\) 3
  - ENGR:2720 Materials Science \(^a\) 3
  - CEE:3371 Principles of Hydraulics and Hydrology \(^f\) 3
  - CEE:3430 Water Treatment \(^f\) 4
  - CEE:4159 Air Pollution Control Technology \(^f\) 3
  - Hours 16

### Fourth Year
- **Fall**
  - GE: Approved Course Subjects \(^j\) 3
  - CEE:4102 Groundwater \(^e\) 3
  - CEE:4157 Environmental Engineering Design \(^e\) 3
  - CEE:4374 Water Resource Design \(^e\) 3
  - Elective: focus area course \(^i\) 3
  - CEE:3003 Project Management Skills \(^e\) 1
  - Hours 16

**Hours** 130

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The course [Project Management Skills](#) is offered in the fall semester only. Check MyUI for course availability since offerings are subject to change.

Students who intend to enroll in a Be Creative course with prerequisites must request a waiver by completing the Request Prerequisite Special Permission form on MyUI. See the College of Engineering General Education Component website for more information.

- **Hours** 17
- **Total Hours** 130

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a. Typically this course is offered in fall, spring, and summer sessions. Check MyUI for course availability since offerings are subject to change.

b. Typically this course is offered in fall and spring semesters. Check MyUI for course availability since offerings are subject to change.

c. Enrollment in math courses requires completion of a placement exam.

d. Enrollment in chemistry courses requires completion of a placement exam.

e. Typically this course is offered in fall semesters only. Check MyUI for course availability since offerings are subject to change.

f. Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.

g. Students who intend to enroll in a Be Creative course with prerequisites must request a waiver by completing the Request Prerequisite Special Permission form on MyUI. See the College of Engineering General Education Component website for more information.

h. Students select a course from the GE CLAS Core Diversity and Inclusion area.

i. Students select a focus area to achieve exposure and depth of study in an area of interest. Each focus area requires at least 15 s.h. of coursework. Some focus areas may require additional courses that may be taken for General Education Component credit. See the civil and environmental engineering website or consult an advisor for more information.

j. A full list of approved course subjects can be found on the College of Engineering General Education Component website. Some focus areas may require specific courses that may be taken for General Education Component credit.

k. Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Graduation Services.