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 128 s.h.

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, an elective focus area, and the general education component. For information about the curriculum stems, see the Bachelor of Science in Engineering in the Catalog.

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

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

For more detailed information about elective focus areas, see the Bachelor of Science in Engineering in the Catalog. For a description of the standard elective focus area options and guidelines for tailored elective 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 course work 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.

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 First Year</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:1550</td>
<td>Engineering Mathematics I: Single Variable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>ENGR:1100</td>
<td>Introduction to Engineering Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CHEM:1110</td>
<td>Principles of Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>RHET:1030</td>
<td>Rhetoric</td>
<td>4</td>
</tr>
<tr>
<td>ENGR:1000</td>
<td>Engineering Success for First-Year Students</td>
<td>1</td>
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<tr>
<td>CSI:1600</td>
<td>Success at Iowa</td>
<td>0</td>
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<tr>
<td><strong>Hours</strong></td>
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<td><strong>16</strong></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH:1560</td>
<td>Engineering Mathematics II: Multivariable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>ENGR:1300</td>
<td>Introduction to Engineering Computing</td>
<td>3</td>
</tr>
<tr>
<td>PHYS:1611</td>
<td>Introductory Physics I</td>
<td>4</td>
</tr>
<tr>
<td>MATH:2550</td>
<td>Engineering Mathematics III: Matrix Algebra</td>
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<tr>
<td>CHEM:1120</td>
<td>Principles of Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CEE:1010</td>
<td>Introduction to Careers in Environmental Engineering</td>
<td>0</td>
</tr>
<tr>
<td><strong>Hours</strong></td>
<td></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Second Year

| Fall              |       |       |
| MATH:2560         | Engineering Mathematics IV: Differential Equations | 3 |
| CHEM:2210         | Organic Chemistry I | 3 |
| ENGR:2110         | Engineering Fundamentals I: Statics | 2 |
| ENGR:2120         | Engineering Fundamentals II: Electrical Circuits | 3 |
ENGR:2130  Engineering Fundamentals III: Thermodynamics  3
CEE:1030  Introduction to Earth Science  3

**Spring**
STAT:2020  Probability and Statistics for the Engineering and Physical Sciences  3
ENGR:2710  Dynamics  3
ENGR:2720  Materials Science  3
CEE:2010  Civil and Environmental Engineering Professional Practice and Ethics  1
CEE:3155  Principles of Environmental Engineering  4
GE: Engineering Be Creative  3

**Third Year Fall**
CEE:4158  Solid and Hazardous Wastes  3
ENGR:2510  Fluid Mechanics  4
GE: CLAS General Education Component  3
BIOL:1411  Foundations of Biology  4
Elective Focus Area: #2  3
CEE:3001  Leadership Skills for Engineers  1

**Spring**
CEE:3371  Principles of Hydraulics and Hydrology  3
Elective Focus Area: #3  3
Elective Focus Area: #4  3
GE: Approved Course Subjects  3
CEE:3002  Technical Communication in Civil and Environmental Engineering  1

**Fourth Year Fall**
CEE:4157  Environmental Engineering Design  3
CEE:4374  Water Resource Design  3
CEE:4150  Environmental Chemistry  3
CEE:4102  Groundwater  3
GE: Approved Course Subjects  3
CEE:3003  Project Management Skills  1

**Spring**
CEE:4850  Project Design and Management in Civil Engineering  3
CEE:4159  Air Pollution Control Technology  3
Elective Focus Area: #6  3
Elective Focus Area: #7  3
GE: Approved Course Subjects  3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall)  

**Career Advancement**
The engineering profession is a foundation for a variety of careers in industry, medicine, law, government, and consulting. Engineering majors hold eight of the top ten spots on the list of top-paid majors for bachelor's degree graduates, according to the National Association of Colleges and Employers (NACE). On average, 93-98 percent of graduates are employed in their field of study or pursuing advanced education within seven months of graduation.

Engineering Professional Development (EPD) 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.

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

a Enrollment in math courses requires completion of a placement exam.
b Enrollment in chemistry courses requires completion of a placement exam.
c Courses with prerequisites; students should complete a prerequisite waiver form.
d Students may select a course from all GE CLAS Core categories except Rhetoric, Quantitative or Formal Reasoning, and Natural Sciences.
e A full list of approved course subjects can be found on the College of Engineering General Education Component website.
f 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. For more information visit http://commencement.uiowa.edu/