Environmental Engineering, BSE

Requirements

The Bachelor of Science in Engineering with a major in environmental engineering requires a minimum of 130 s.h. of credit. At the time of graduation, students must have a cumulative grade-point average of at least 2.00 in all college coursework used to complete degree requirements and in all UI coursework in order to be awarded the BSE.

All BSE students are required to take the same collegiate curriculum. For information about these collegiate requirements, see the Bachelor of Science in Engineering, BSE in the catalog. Students completing the major in environmental engineering fulfill the collegiate statistics requirement by completing STAT:2020 Probability and Statistics for the Engineering and Physical Sciences. The focus area may require specific courses to count toward the General Education Component of the collegiate curriculum; see "Focus Area" below.

The major in environmental engineering requires the following coursework.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collegiate Curriculum</td>
<td>50</td>
</tr>
<tr>
<td>Major Requirements (including one 0 s.h. course)</td>
<td>65</td>
</tr>
<tr>
<td>Focus Area</td>
<td>15</td>
</tr>
</tbody>
</table>

Major Requirements

Major requirements include a set of common courses (58 s.h.), five professional skills courses (4 s.h., including one 0 s.h. course), and one capstone design course (3 s.h.).

Common Courses

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of these:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE:1030</td>
<td>Introduction to Earth Science (no lab required)</td>
<td>3</td>
</tr>
<tr>
<td>CEE:3155</td>
<td>Principles of Environmental Engineering (with lab)</td>
<td>4</td>
</tr>
<tr>
<td>CEE:3371</td>
<td>Principles of Hydraulics and Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>CEE:3430</td>
<td>Water Treatment (with lab)</td>
<td>4</td>
</tr>
<tr>
<td>CEE:4102</td>
<td>Groundwater</td>
<td>3</td>
</tr>
<tr>
<td>CEE:4150</td>
<td>Environmental Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CEE:4157</td>
<td>Environmental Engineering Design</td>
<td>3</td>
</tr>
<tr>
<td>CEE:4158</td>
<td>Solid and Hazardous Wastes</td>
<td>3</td>
</tr>
<tr>
<td>CEE:4159</td>
<td>Air Pollution Control Technology</td>
<td>3</td>
</tr>
<tr>
<td>CEE:4374</td>
<td>Water Resource Design</td>
<td>3</td>
</tr>
<tr>
<td>BIOL:1411</td>
<td>Foundations of Biology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM:1120</td>
<td>Principles of Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM:2210</td>
<td>Organic Chemistry I (no lab required)</td>
<td>3</td>
</tr>
<tr>
<td>ENGR:2110</td>
<td>Statics</td>
<td>2</td>
</tr>
<tr>
<td>ENGR:2130</td>
<td>Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR:2510</td>
<td>Fluid Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>ENGR:2710</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR:2720</td>
<td>Materials Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Professional Skills

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of these:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE:1010</td>
<td>Introduction to Careers in Environmental Engineering</td>
<td>0</td>
</tr>
<tr>
<td>CEE:2010</td>
<td>Civil and Environmental Engineering Professional Practice and Ethics</td>
<td>1</td>
</tr>
<tr>
<td>CEE:3001</td>
<td>Leadership Skills for Engineers</td>
<td>1</td>
</tr>
<tr>
<td>CEE:3002</td>
<td>Technical Communication in Civil and Environmental Engineering</td>
<td>1</td>
</tr>
<tr>
<td>CEE:3003</td>
<td>Project Management Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

Capstone Design Course

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE:4850</td>
<td>Project Design and Management in Civil Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Focus Area

Students must select focus area courses according to guidelines established by the Department of Civil and Environmental Engineering. Environmental engineering students may choose from a standard focus area developed by the department (environmental or public health) 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 Environmental Engineering Focus Areas on the Department of Civil and Environmental Engineering website.

Focus areas in environmental engineering consist of content area courses and electives; carefully selected elective courses may contribute to earning a minor and/or certificate.

Environmental

Students in the environmental focus area complete two content area courses (6 s.h.) and three additional electives (9 s.h.).

Environmental Electives

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two of these:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE:4107/CBE:4410</td>
<td>Sustainable Systems</td>
<td>3</td>
</tr>
<tr>
<td>CEE:4119</td>
<td>Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>CEE:4371</td>
<td>Water Resources Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Electives—Environmental Focus Area

Students complete 9 s.h. in additional electives. These electives may include any Department of Civil and Environmental Engineering course (prefix CEE) not already taken for the major numbered 3000 or above.

The following courses are additional suggested electives in the environmental focus area.
### Environmental Engineering, BSE

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPH:3500/</td>
<td>Global Public Health</td>
<td>3</td>
</tr>
<tr>
<td>GHS:3500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON:3625/</td>
<td>Environmental and Natural Resource Economics</td>
<td>3</td>
</tr>
<tr>
<td>URP:3135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGR:2120</td>
<td>Electrical Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ENGR:2730</td>
<td>Computers in Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGR:2995</td>
<td>Introduction to Artificial Intelligence and</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Machine Learning in Engineering</td>
<td></td>
</tr>
<tr>
<td>GEOG:2050</td>
<td>Foundations of GIS</td>
<td>4</td>
</tr>
<tr>
<td>GEOG:3210/</td>
<td>Health, Work, and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>CPH:3400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAW:8992</td>
<td>Water Law</td>
<td>arr.</td>
</tr>
<tr>
<td>OEH:4240</td>
<td>Global Environmental Health</td>
<td>3</td>
</tr>
</tbody>
</table>

### Public Health

Students in this focus area complete one required course (3 s.h.), three focus area electives (9 s.h.), and one additional elective (3 s.h.).

Students in the public health focus area are required to complete the undergraduate certificate in public health in the College of Public Health. The public health focus area requires CPH:1400 Fundamentals of Public Health as part of the collegiate curriculum General Education Component.

#### Required Public Health Course

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPH:1600</td>
<td>Public Health Science: Inquiry and Investigation in Public Health</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Public Health Electives

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three of these:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPH:1800</td>
<td>Social and Psychological Determinants of Health: Changing Behavior, Improving Health</td>
<td>3</td>
</tr>
<tr>
<td>CPH:2400</td>
<td>The U.S. Health System in a Global Context</td>
<td>3</td>
</tr>
<tr>
<td>CPH:3400/</td>
<td>Health, Work, and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPH:3500/</td>
<td>Global Public Health</td>
<td>3</td>
</tr>
<tr>
<td>GHS:3500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Additional Elective—Public Health Focus Area

Students complete 3 s.h. in additional elective(s). The following courses are suggested electives in the public health focus area. Students can view courses applicable for the Certificate in Public Health in the College of Public Health section of the catalog.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPH:2200</td>
<td>Climageddon: Understanding Climate Change and Associated Impacts on Health</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPH:2200</td>
<td>Building a Healthier Tomorrow: Public Health Methods to Minimize Disease and Pollutant Exposures</td>
<td>3</td>
</tr>
<tr>
<td>CPH:4200</td>
<td>Agriculture, Food Systems, and Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>CPH:4220</td>
<td>Global Road Safety</td>
<td>3</td>
</tr>
</tbody>
</table>

Courses that count toward the undergraduate Certificate in Public Health: 2-3