The Environmental Engineering minor will provide a wide range of undergraduate majors with an introductory background in sustainability, pollution prevention, environmental modeling, and pollution control technologies. By completing the minor in Environmental Engineering, students should add considerably to their major program skills, and become more valuable to their future employer. Science majors will gain an understanding of engineering problem-solving methods and procedures, as well as standard pollution control technologies. Other engineering majors will become more aware of the environmental effects of technologies in their major field, and how to reduce these effects.

A. Prerequisites for Environmental Engineering Minor
Must be completed prior to beginning the minor program:
1. Math 1151
2. Chemistry 1220 General Chemistry II (non-engineering students) or Chemistry 1250 Chem. for Eng (engineering students)

B. Requirements of Environmental Engineering Minor:
1. Credit hour requirement: minimum of 15 credit hours

2. Required Courses All 3 courses below must be completed
ENE 3200 Fundamentals of Env Eng* (3 hrs)
ENE 3210 Unit Operations in Eng Eng (3 hrs) (POI)
ENE 2100 Analytical Methods in Env Eng (3 hrs)

3. Electives of Minor
Select 6 hours of coursework from the approved elective list below. Engineering students may overlap six credit hours from the minor with the elective portion of their engineering degree program.
*Civil Engineering students, who use ENE 3200 as one of the six Core Electives in the major must take an additional 3 hours of elective credit from below.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Credit Hrs</th>
<th>Pre-requisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENE 5180</td>
<td>Ecological Engineering and Science</td>
<td>3</td>
<td>Rank 3; course in one of the following biology, ecology, engineering or geology</td>
</tr>
<tr>
<td>ENE 4200</td>
<td>Unit Operations in Environmental Eng Lab</td>
<td>1</td>
<td>ENE 2100; ENE 3210, ENE 3110(c)</td>
</tr>
<tr>
<td>ENE 5110</td>
<td>Environmental Biotechnology</td>
<td>3</td>
<td>ENE 3200</td>
</tr>
<tr>
<td>ENE 5410</td>
<td>Hazardous Waste Management</td>
<td>2</td>
<td>ENE 3210</td>
</tr>
<tr>
<td>ENE 5170</td>
<td>Sustainability and Pollution Prevention Practices</td>
<td>3</td>
<td>ENE 3200</td>
</tr>
<tr>
<td>CE 5230</td>
<td>Transport Phenomenon in Water Resource Eng</td>
<td>3</td>
<td>Math 2173, 2177, 2255, (or 2415)</td>
</tr>
<tr>
<td>ENE 5430</td>
<td>Principles of Risk Assessment</td>
<td>3</td>
<td>ENE 3200</td>
</tr>
<tr>
<td>CHBE 5771</td>
<td>Air Pollution</td>
<td>3</td>
<td>Rank 4 in engineering</td>
</tr>
<tr>
<td>CHBE 5772</td>
<td>Principles of Sustainable Engineering</td>
<td>3</td>
<td>POI or CHBE 4760</td>
</tr>
<tr>
<td>EarthSci 5651</td>
<td>Hydrogeology</td>
<td>4</td>
<td>EarthSci 1121; Math 1152</td>
</tr>
<tr>
<td>ENR 3000 and 3001</td>
<td>Soil Science</td>
<td>3/1</td>
<td>Rank 2+</td>
</tr>
<tr>
<td>ENR 5273</td>
<td>Fate of Pollutants in Soils and Natural Waters</td>
<td>3</td>
<td>2 semesters of Chemistry</td>
</tr>
</tbody>
</table>

POI = student may need Permission of Instructor for enrollment if prereq is not part of major curriculum
(c) = concurrent requisite

C. Suggested Sequence of Course
Autumn Semester Spring Semester
ENE 3200 ENE 3210
ENE 2100
Autumn Semester Spring Semester
Electives Electives

Environmental Engineering minor program guidelines

Required for graduation No

Credit hours required A minimum of 15 credit hrs. 1000 level courses shall not be counted toward the 15 credit hr minimum.

Overlap credit hours allowed A maximum of 6

Overlap with the GE Permitted, unless specifically disallowed by an individual minor program.

Overlap with the major Not allowed and
• The minor must be in a different subject than the major.
• The same courses cannot count on the minor and on the major.

Overlap between minors Each minor completed must contain 12 unique hours.

Grades required
• Minimum C- for a course to be listed on the minor.
• Minimum 2.00 cumulative point-hour ratio required for the minor.
• Course work graded Pass/Non-Pass cannot count on the minor.

Minor Approval The minor program description sheet indicates if the minor course work must be approved by:
• The academic unit offering the minor, or
• A college/school counselor.

Filing the minor program form The minor program form must be filed at least by the time the graduation application is submitted to a college/school counselor.

Changing the minor Once the minor program is filed in the college office, any changes must be approved by:
• The academic unit offering the minor, or
• A college/school counselor (depending on the minor).