## Total Credits Needed for Degree: 125

### About This Plan
- This plan is not a contract. Curriculum can change. The APAS is the official method for tracking completion of University degree requirements.
- Shaded courses are only offered in the indicated semester.
- Course pre-requisites and co-requisites (designated by &) are listed below the course number and title. Upper Division (UD) requires admission to the major prior to enrollment.
- Students can take either the CSE-only or University-wide versions of the math course (Math 1371/1271, 1372/1272, 2373/2243, 2374/2263).

### Applying to your Major
Students who have completed the required courses for admission to this major (indicated with double boxes on plan) and have a 3.2 UM-TC technical GPA at the end of the fall semester will be guaranteed admission.
All other students who have completed the required courses will be considered for admission on a space-available basis. Admission following the spring semester is only based on space availability. The major application database is available at z.umn.edu/csemajorapp.

### About This Plan

**Environmental Engineering**

**Freshman Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 1371 Calculus I (placement into course or pre-reg)</td>
<td>Math 1372 Calculus II (1371)</td>
</tr>
<tr>
<td>Phys 1301W Intro Physics I (&amp;Math 1371)</td>
<td>Phys 1302W Intro Physics II (1301, &amp;Math 1372)</td>
</tr>
<tr>
<td>Chem 1061 Chem Princ I (placement into course or 1015, &amp;1065)</td>
<td>Chem 1062 Chem Princ II (1061/65, &amp;1066)</td>
</tr>
<tr>
<td>CSE 1001 1st Yr Experience</td>
<td>Liberal Education course or Writ 1301 (recommend Biol 1001 or 1009)</td>
</tr>
<tr>
<td>Liberal Education course or Writ 1301</td>
<td></td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 2374 Multivariable Calc (1372)</td>
<td>Math 2373 Lin Alg/Diff Eq (1372)</td>
</tr>
<tr>
<td>CEGE 3501 Environ Engr (Chem 1062/66, Phys 1302)</td>
<td>CEGE 3101 Comp App I (CSE, Phys 1301, Math 1372)</td>
</tr>
<tr>
<td>Liberal Education course</td>
<td>Liberal Education course</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEGE 3541 Environ Eng Lab (3501)</td>
<td>CEGE 3301 Soil Mech I (CSE, 3101, AEM 3031)</td>
</tr>
<tr>
<td>CEGE 3102 Uncert &amp; Dec Analysis (Math 1372)</td>
<td>CEGE 4501 Hydrologic Des (3102, 3502)</td>
</tr>
<tr>
<td>CEGE 3502 Fluid Mechanics (CSE, 3101, AEM 3031, Math 2373)</td>
<td>CEGE 4101 Proj Mgmt &amp; Engr Econ+ (UD)</td>
</tr>
<tr>
<td>CEGE 4502 Water/Waste Trt (3501, or ChEn 2001)</td>
<td>CEGE 3103 Ethics &amp; Prof Prac+ (UD)</td>
</tr>
<tr>
<td>Earth Sciences course</td>
<td>Liberal Education course</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEGE 3402W CE Materials (CSE, AEM 3031)</td>
<td>CEGE 4102W Capstone Des (4101W, 4501, 4502, final semester)</td>
</tr>
<tr>
<td>Engrg Science &amp; Design course</td>
<td>Engrg Science &amp; Design course</td>
</tr>
<tr>
<td>Env Science &amp; Policy course</td>
<td>Technical Elective</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>Technical Elective</td>
</tr>
</tbody>
</table>

+Not required for students admitted prior to Fall 2017; recommend as Tech Elective.

### Department Contact Information
- Website: http://z.umn.edu/cegeundergradhandbook
- Main Phone: 612-625-5522
- Main Office: 122 Civil Engineering Building
- Director of Undergraduate Studies: Professor Timothy LaPara
- Email: lapar001@umn.edu

### University Degree Requirements
All students must complete the following Writing & Liberal Education requirements, as noted on their APAS report.
See link for full Core & Theme names: z.umn.edu/liberaleducation

#### Writing Requirements:
- **University Writing:**
  - Writ 1301/1401 or equivalent
- **Writing Intensive (WI):**
  - Two: 1xxx or 2xxx level **
  - One: 3/4/5xxx level (in major)*
  - One: 3/4/5xxx level (any dept.)*

Requirements with an (*) will be fulfilled by taking courses at UM-TC required for this major.

<table>
<thead>
<tr>
<th>CORES:</th>
<th>THEMES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio</td>
<td>4 of 5:</td>
</tr>
<tr>
<td>Phy*</td>
<td>Civ</td>
</tr>
<tr>
<td>His</td>
<td>DSJ</td>
</tr>
<tr>
<td>SocS</td>
<td>Env*</td>
</tr>
<tr>
<td>Ltr</td>
<td>GP</td>
</tr>
<tr>
<td>AH</td>
<td>TS</td>
</tr>
<tr>
<td>Mth*</td>
<td></td>
</tr>
</tbody>
</table>

---

This plan is not a contract. Curriculum can change. The APAS is the official method for tracking completion of University degree requirements. Shaded courses are only offered in the indicated semester. Course pre-requisites and co-requisites (designated by &) are listed below the course number and title. Upper Division (UD) requires admission to the major prior to enrollment. Students can take either the CSE-only or University-wide versions of the math course (Math 1371/1271, 1372/1272, 2373/2243, 2374/2263).
Environmental Engineering

POSSIBLE POSITIONS

- **Air quality engineer**: Inspects, analyzes, and quantifies levels of pollution and their environmental impact. Designs and assesses the effectiveness of environmental regulatory programs to manage health risks to the environment.
- **Energy engineer**: Designs and evaluates projects and programs to reduce energy costs or improve energy efficiency during the design, building, or remodeling stages of construction.
- **Environmental analyst**: Collects, studies, and analyzes data to propose actions and policies to create less harmful and cleaner interactions with the environment.
- **Environmental engineer**: Designs and supervises systems that prevent and control pollution.
- **Environmental health research scientist**: Conducts research for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect the environment or the health of the population.
- **Environmental specialist**: Conduct research or perform investigation for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population.
- **Wastewater engineer**: Improves both the environment and economy by helping communities and businesses dispose of waste without polluting natural water sources.

**Some of these positions may require an advanced degree.**

INDUSTRIES

- Chemical companies
- Community development
- Construction/building
- Consulting
- Environmental law
- Hydrology and hydraulic engineering
- Industrial hygiene
- Mining and manufacturing
- Pollution control
- Public health agencies
- Public works
- Research firms/labs
- State and local government
- Sustainable development
- Transportation
- Urban planning and development
- Waste management
- Water quality/treatment

EMPLOYERS

- American Engineering Testing, Inc.
- Antea Group
- Black & Veatch
- Barr Engineering
- Brown and Caldwell
- Cargill
- Cliffs Natural Resources
- Flint Hills Resources
- Hennepin County, MN
- Landmark Environmental LLC
- Houston Engineering
- MSA Professional Services
- MN Dept of Health
- MN Dept of Transportation
- Metropolitan Council
- Rice Creek Watershed District
- Schlumberger
- Vieau Associates
- WSB & Associates
- WSP/Parsons Brinckerhoff

CSE Career Outcomes

Average Starting Salary: $**

Post-graduation Outcomes:*  
Grad School: 26.7%
Employed: 73.3%

**cohort size too small to report data due to privacy regulations

More Information

Career Center: cse.umn.edu/career
Salary Information: z.umn.edu/csesalary
More Information on Undergraduate Majors: cse.umn.edu/majors

Please visit the Career Center to continue exploring this major.

*Salary and Career Outcomes gathered from the 2016-2017 CSE Graduation Survey. Post-graduation outcomes reflect the percentage of students who were employed full-time in their field or were enrolled in a graduate program.