Environmental Engineering

Freshman Year

Fall Semester
- Math 1371 Calculus I (placement into course or pre-reg)
- Phys 1301W Intro Physics I (Math 1371)
- Chem 1065 Chem Princ I Lab ($&$1061)
- Chem 1061 Chem Princ I (placement into course or 1015, $&$1065)
- CSE 1001 1st Yr Experience
- Liberal Education course or Writ 1301

Spring Semester
- Math 1372 Calculus II (1371)
- Phys 1302W Intro Physics II (1301, $&$Math 1372)
- Chem 1066 Chem Princ II Lab (1061/65, 1062)
- Chem 1062 Chem Princ II (1061/65, 1066)
- Liberal Education course or Writ 1301 (recommend Biol 1001 or 1009)

Junior Year

Fall Semester
- CEGE 3541 Environ Eng Lab (3501)
- CEGE 3102 Uncert & Dec Analysis (Math 1372)
- CEGE 3502 Fluid Mechanics (CSE, 3101, AEM 3031, Math 2373)
- CEGE 4502 Water/Waste Trt (3501, or ChEn 2001)
- Earth Sciences course

Spring Semester
- CEGE 3301 Soil Mech I (CSE, 3101, AEM 3031)
- CEGE 4501 Hydrologic Des (3102, 3502)
- CEGE 4101 Proj Mgmt & Engr Econ+ (UD)
- CEGE 3103 Ethics & Prof Prac+ (UD)
- Liberal Education course or Liberal Education course

Sophomore Year

Fall Semester
- Math 2374 Multivariable Calc (1372)
- AEM 2011 Statics (CSE, Phys 1301, &Math 2374)
- Chem 2301 Organic Chem (1062/66)
- CEGE 3501 Environ Engrg (Chem 1062/66, Phys 1302)

Spring Semester
- Math 2373 Lin Alg/Diff Eq (1372)
- AEM 3031 Deform Body Mech (CSE, 2011, Math 2374, &Math 2373)
- Chem 4501 Intro to Thermo (1062/66, Phys 1302, &Math 2374)
- CEGE 3101 Comp App I (CSE, Phys 1301, Math 1372)

Senior Year

Fall Semester
- CEGE 3402W CE Materials (CSE, AEM 3031)
- Engrg Science & Design course
- Env Science & Policy course
- Technical Elective

Spring Semester
- CEGE 4102W Capstone Des (4101, 4501, 4502, final semester)
- Engrg Science & Design course
- Technical Elective
- Technical Elective

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.

Total Credits Needed for Degree: 125

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.

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.

CORES: Bio Phy* His SocS Ltr AH Mth*
THEMES: 4 of 5: Civ DSJ Env* GP TS

Liberal Education
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

Post-graduation Outcomes:*

- Grad School: 26.7%
- Employed: 73.3%

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

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.