



Twin Cities Campus

Civil Engineering Ph.D.

CSENG Civil, Envrn & Geo-Eng (CEGE)

College of Science and Engineering

Link to a [list of faculty](#) for this program.

Contact Information:

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Website: <http://www.cege.umn.edu>

- Program Type: Doctorate
- Requirements for this program are current for Spring 2019
- Length of program in credits: 60
- This program does not require summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the [General Information](#) section of the catalog website for requirements that apply to all major fields.

Civil engineering emphases are available in environmental engineering (e.g., pollutant fate and transport, process modeling, soil and groundwater remediation, water and wastewater treatment), geomechanics (e.g., fracture and localization, groundwater flow, stability and liquefaction, wave and shock propagation), structural engineering (e.g., computational and structural mechanics, earthquake engineering, infrastructure performance and durability, new systems and materials), transportation engineering (e.g., intelligent transportation systems, pavement design and materials, transportation economics, traffic safety), and water resources engineering (e.g., earthscape processes, environmental and biological systems, hydrologic and climate dynamics, hydrodynamics, and turbulence).

The PhD degree couples independent research with coursework in a comprehensive program for those wishing to attain mastery of their field. The PhD degree demands the ability and desire to pursue independent and original studies and can be earned with emphasis in environmental, geomechanics, structural, transportation, or water resources engineering. Research performance, as judged by preparation of a dissertation on an independently pursued research topic, is the primary requirement for the PhD degree.

Students enter the PhD program two to four years following the bachelor's degree, normally after completing the MS degree. The PhD program is typically completed in four to six years following the bachelor's degree. Each program of study is designed in consultation with a faculty adviser to meet the special needs of the student, although programs must be approved by the director of graduate studies.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.00.

A bachelor's degree in an engineering, basic science, or mathematics program is preferred.

Other requirements to be completed before admission:

Admission depends primarily on the applicant's academic record and letters of recommendation. Applicants who lack civil engineering training are often required to complete one or more appropriate courses from the undergraduate civil engineering program. Graduate credit is not awarded for such preparatory work.

Special Application Requirements:

The application deadlines are December 3 for fall admission and August 31 for spring admission. All materials must be submitted to the online application. Additional information is available at <http://www.cege.umn.edu/prospective/graduate/how-to-apply.html>

Applicants must submit their test score(s) from the following:

- GRE



International applicants must submit score(s) from one of the following tests:

- TOEFL
 - Internet Based - Total Score: 79
 - Internet Based - Writing Score: 21
 - Internet Based - Reading Score: 19
- IELTS
 - Total Score: 6.5
- MELAB
 - Final score: 80

Key to [test abbreviations](#) (GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the [General Information](#) section of the catalog website.

Program Requirements

36 credits are required in the major.
24 thesis credits are required.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

A typical program consists of 36 credits of coursework beyond the bachelor's degree, plus 24 thesis credits. Credits earned in a MS program may be presented in partial fulfillment of the PhD requirements. Rigid requirements for the number of 8xxx courses appropriate for PhD programs have not been set; nonetheless, the PhD represents the highest level of scholarly achievement and coursework should be selected accordingly.

Required Courses

Any courses at the 5xxx and 8xxx level from the following programs may be used: AEM, AST, BBE, BMEN, CEGE, CHEM, CHEN, CSCI, EE, ESCI, IE, MATH, MATS, ME, PHYS, STAT. Use of 4xxx level courses must be approved by the Director of Graduate Studies and a maximum of 9 credits may be included. The following 4xxx courses may not be used: CEGE 4301, 4401, 4501, 4502, and 4522. The 36 course credits may include 12 credits in a minor.

Seminar

Students may count up to two seminar credits for the Ph.D. program in the 36-credit total.

[CEGE 8200](#) - Seminar: Transportation (1.0 cr)

or [CEGE 8300](#) - Seminar: Geomechanics (1.0 cr)

or [CEGE 8400](#) - Seminar: Structures (1.0 cr)

or [CEGE 8500](#) - Seminar: Environmental (1.0 cr)

Thesis Credits

Take 24 credits after passing preliminary oral exam

[CEGE 8888](#) - Thesis Credit: Doctoral (1.0 - 24.0 cr)