

# MASTER OF SCIENCE IN THE FIELD OF CIVIL AND ENVIRONMENTAL ENGINEERING (STEM)

Civil and environmental engineering graduate students have extraordinary opportunities to learn about the state-of-the-art in their studies. Environmental engineering students use one of the world's largest wastewater treatment plants as a real-world laboratory to improve the water quality of the Potomac River and the Chesapeake Bay watershed. Structural engineering students study earthquake engineering, extreme event design of structures and bridge design on a state-of-the-art, six-degrees-of-freedom earthquake simulator.

The master of science program in civil and environmental engineering at GW is a 33-credit-hour graduate program without a thesis, or 30 credits with a thesis.

The master's program emphasizes the professional development of our graduate students and the mastery of technical and applied aspects of the chosen specialty. Evening classes are scheduled to suit working professionals, and students may choose the thesis or non-thesis option.

This is a STEM designated program.

Visit the program website (<https://seascee9.drupal.gwu.edu/master-science-civil-and-environmental-engineering/>) for additional information.

## ADMISSIONS

Admissions Fall - January 15

Deadlines:

Spring - September 1

Summer - March 1 (non-F1 visa seeking applicants)

**Standardized test scores:** The Graduate Record Examination (GRE) is required of all applicants. (Institution code 5246).

The Test of English as a Foreign Language (TOEFL), the academic International English Language Testing System (IELTS), or the PTE Academic is required of all applicants except those who hold a bachelor's, master's, or doctoral degree from a college or university in the United States or from an institution located in a country in which English is the official language, provided English was the language of instruction. Minimum scores:

- Academic IELTS: an overall band score of 6.0 with no individual score below 5.0; applicants requesting funding consideration must have an overall band score of 7.0 with no individual score below 6.0; or

- TOEFL: 550 on paper-based or 80 on Internet-based; applicants requesting funding consideration must have 600 on paper-based; or 100 on Internet-based; or

- PTE Academic: 53; applicants requesting funding consideration must have 68.

**Recommendations:** (2) recommendation required. If possible, one of these recommendations should be from your advisor at the institution from which you earned your highest degree.

**Prior academic records:** Transcripts are required from all colleges and universities attended, whether or not credit was earned, the program was completed, or the credit appears as transfer credit on another transcript. Unofficial transcripts from all colleges and universities attended must be uploaded to your online application. Official transcripts are required only of applicants who are offered admission.

If academic records are in a language other than English, a copy in the original language and an English language translation must be uploaded. Transcript evaluations should not be uploaded. Applicants who have earned a degree from an Indian university are required to submit individual semester marksheets.

**Statement of purpose:** In an essay of 250 to 500 words, state your purpose in undertaking graduate study at GW; describe your academic objectives, research interests, and career plans; and discuss your related qualifications, including collegiate, professional, and community activities, and any other substantial accomplishments not already mentioned.

**Additional requirements:** Bachelor's degree with a grade-point average of at least 3.0 (on a 4.0 scale). Applicants should possess an undergraduate degree in engineering, the physical sciences, or applied mathematics.

All applicants must choose an area of focus that most closely matches their interests and note this on the online application. All applicants must submit a resumé or CV.

**International applicants only:** Please follow this link - <https://graduate.admissions.gwu.edu/international-student-application-requirements> (<https://graduate.admissions.gwu.edu/international-student-application-requirements/>) - to review the International Applicant Information carefully for details on required documents, earlier deadlines for applicants requiring an I-20 or DS-2019 from GW, and English language requirements.

For additional information about the admissions process visit the SEAS Admissions Frequently Asked Questions (<https://graduate.engineering.gwu.edu/admissions-frequently-asked-questions/>) page.

Contact for questions:

[engineering@gwu.edu](mailto:engineering@gwu.edu)

202-994-1802 (phone)

202-994-1651 (fax)

Hours: 9:00 am to 5:00 pm, Monday through Friday

## REQUIREMENTS

The following requirements must be fulfilled: Non-thesis option—33 credits, including 9 credits in required core courses and 24 credits in elective courses taken in a selected focus area; thesis option—30 credits, including 9 credits in required core courses and 15 credits in elective courses taken in a selected focus area, and 6 credits in thesis.

Code	Title	Credits
<b>Required</b>		
Thesis and non-thesis students select and complete 9 credits in required core courses in one focus area, selected from the following:		
Engineering Mechanics		
APSC 6213	Analytical Methods in Engineering III	
CE 6206	Continuum Mechanics	
CE 6210	Introduction to Finite Element Analysis	
Environmental engineering		
CE 6501	Aquatic Chemistry	
CE 6503	Principles of Environmental Engineering	
CE 6609	Numerical Methods in Environmental and Water Resources	
Geotechnical engineering		
CE 6210	Introduction to Finite Element Analysis	
CE 6402	Theoretical Geomechanics	
CE 6605	Ground Water and Seepage	
Structural engineering		
CE 6201	Advanced Strength of Materials	
CE 6202	Methods of Structural Analysis	
CE 6301	Design of Reinforced Concrete Structures	
or CE 6320	Design of Metal Structures	
Transportation safety engineering		
CE 6102	Application of Probability Methods in Civil Engineering	
CE 6721	Traffic Engineering and Highway Safety	
CE 6722	Intelligent Transportation Systems	

Water resources engineering

CE 6601	Hydraulics of Open Channel Flow
CE 6604	Physical Hydrology
CE 6609	Numerical Methods in Environmental and Water Resources

### Thesis

Required of students who have selected the thesis option:

CE 6998	Thesis Research
CE 6999	Thesis Research

### Electives

Non-thesis students take 24 credits and thesis students take 15 credits in elective credits, selected in consultation with the advisor. Elective courses generally are taken in the focus area but also could be taken from other focus areas or engineering departments with permission.

Students should consult with the advisor concerning their program of study.