# 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 Deadlines: | Fall - January 15 |
| | Spring - September 1 |
| | Summer - March 1 (non-F1 visa seeking applicants) |
| Standardized test scores: | The GRE General Test is optional for all applicants. For applicants who want to submit scores, they must be submitted officially from ETS using the institutional 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 6.5 with no individual score below 6.0; or |
| | - TOEFL: 550 on paper-based or 81 on Internet-based; or |
| | - PTE Academic: 53; applicants requesting funding consideration must have 68. |
| Recommendations required: | Two (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 - 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
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 |
|---|---|---|
| **Required** | | |
| 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.