Geotechnical, Construction and Structural Engineering (M.Eng.)

Master of Science
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Program Overview
The Master of Engineering (M.Eng.) program in integrated geotechnical, construction and structural engineering (GeoConStruct) was designed in collaboration with leading engineers in practice to develop a course of study that recognizes that geotechnical engineering, structural engineering, and construction engineering are practiced together, and should be taught together in an integrated manner. Its purpose is to educate engineers for practice, for excellence in design and execution now, laying the groundwork for practice demands 25 years from now. The program balances theory and practice, building on the foundation of an undergraduate degree in civil engineering.

The MEng program design assumes that students possess an undergraduate degree in civil engineering. Applicants with other closely aligned undergraduate degrees, such as geology or another branch of engineering, should inquire about articulation courses to prepare them for the MEng program.

The MEng degree is practice-focused, and entirely course-based. Students who prefer a degree with the option to undertake an independent project or a research thesis should consider the Master of Science program with emphasis in geotechnical or construction or structural engineering. All courses offered for the MEng program are also open to MS students.

Program Requirements
MEng students develop a faculty-approved plan of study with a minimum of 30 credits of graduate coursework. The coursework presented for the degree include at least four core courses (9 credits) and seven approved elective courses (21 credits). Note that any core course that is not counted for the core requirement may also be selected as an elective. Course descriptions are provided at http://catalog.gmu.edu. Most graduate CEIE courses are offered once every two or three semesters, and are offered at 4:30pm or 7:20pm.
Core courses: take at least three of the following five core courses.
- CEIE 524 – Introduction to Bridge Engineering
- CEIE 525 – Structural Evaluation and Rehabilitation
- CEIE 531 – Earth Retaining Structures and Slope Stability
- CEIE 575 – Designing for Constructability
- CEIE 605 – Risk and Uncertainty in Civil Engineering
Refer to our website for more information on program course offerings. Classes are scheduled evenings on the Fairfax Campus.

Elective Requirements:
Take at least seven electives from the following courses. Any core course that is not counted for the core requirement may also be selected as an elective.
- CEIE 512 - Structural Steel Design*
- CEIE 513 - Reinforced Concrete Design*
- CEIE 526 - Advanced Structural Steel Design
- CEIE 527 - Prestressed Concrete Design
• CEIE 532 - Foundation Design*
• CEIE 535 - Engineering Geology*
• CEIE 571 - Construction Administration*
• CEIE 572 - Building Information Modeling *
• CEIE 573 - Legal Aspects of the Construction Process
• CEIE 576 - Construction Cost Estimating
• CEIE 611 - Advanced Structural Analysis
• CEIE 612 - Advanced Mechanics of Materials
• CEIE613 – Structural Dynamics
• CEIE 621 - Applied Finite Element Methods
• CEIE 633 - Advanced Foundation Design and Ground Improvement
• CEIE 634 - Groundwater and Geoenvironmental Design
• CEIE 635 - Advanced Soil Mechanics
• CEIE 636 - Sources of Geotechnical Data
• CEIE 638 - Advanced Foundation Design CEIE 639 - Special Topics in Geotechnical Engineering
• CEIE 679 - Special Topics in Construction Management
• CEIE 510 - Engineering Marketing and Financial Analysis

A course marked with * indicates a course cross-listed with an undergraduate course. No more than three cross-listed courses may be used for credit toward the M.Eng.; and none may repeat material completed previously as part of the student’s undergraduate studies.

Complementary programs:
• Civil and Infrastructure Engineering, PhD
• Geotechnical, Construction, and Structural Engineering, MENG

Admission Requirements
In addition to meeting general university admission requirements, MEng in GCS Program applicants must have completed a baccalaureate degree in engineering or a related science. Acceptance to the degree program is based on an assessment of the applicant’s capacity to pursue graduate study successfully. Students are assumed to have completed an undergraduate degree in civil engineering. Consideration is given to the undergraduate record, any previous graduate work, professional work experience, and reference letters. Students with minor admission deficiencies or with undergraduate degrees in related fields, such as geology or another branch of engineering, may be provisionally admitted subject to completing an articulation program of civil engineering undergraduate courses. Courses required for articulation are not creditable toward the MEng degree.

Required application materials include:
• Online application and non-refundable fee
• Transcripts showing all post-secondary study
• Professional and Educational Goals Statement
• Two letters of recommendation from professors or senior officials at place of employment
• Self-Evaluation
• Resume

Additional application materials, including English proficiency examination scores (e.g., TOEFL, IELTS), are required if the applicant holds a degree from an international institution and/or requires an F-1 or J-1 visa. Visit http://admissions.gmu.edu/grad/ for details.

Visit our website for details: http://civil.gmu.edu
Apply online: http://admissions.gmu.edu/grad/applynow/