

GEOTECHNICAL, CONSTRUCTION, AND STRUCTURAL ENGINEERING, MENG

Banner Code: VS-MENG-GCS

Academic Advising

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The Master of Engineering (MEng) program in combined 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, construction engineering, and structural 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. It is a program that balances theory and practice, building on the foundation of an undergraduate degree in civil engineering.

The MEng is practice-focused and entirely course-based. Students who wish to undertake a degree requiring a project or a research thesis should consider the MS in Civil and Infrastructure Engineering with concentration in geotechnical or construction or structural engineering. All courses offered for the MEng program are open to MS students.

Admissions & Policies

Admissions Requirements

To be considered for admission to the MEng program, a candidate must:

- Satisfy general University and Volgenau School requirements for admission to a graduate program,
- Have earned a baccalaureate degree in engineering or a related science,
- Provide two letters of recommendation from individuals knowledgeable about the applicant's academic or professional work,
- Provide a goals statement and professional résumé.

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.

Research Assistantships & Fellowships

Research Assistantships and Fellowships are typically not awarded to students pursuing the MEng Program because it is entirely a course-based degree, rather than a research degree. Students interested in

Teaching Assistantships (usually reserved for full-time graduate study) should indicate their interest on their application and also contact the department after an admissions decision is made.

Policies

Plan of Study

All MEng students must develop a faculty-approved plan of study with a minimum of 30 credits of graduate coursework. The coursework presented for the degree must include at least three MEng core courses (9 credits) and approved electives (21 credits). Note that the fourth or fifth core course that is not counted for the core requirement may also be selected as an elective. There is no project or thesis requirement for the MEng degree. Most MEng courses are offered once every three semesters and are scheduled to meet in the late weekday afternoons or evenings.

Requirements

Degree Requirements

Total credits: 30

Core Courses

Select 9 credits from the following:	9
CEIE 524	Introduction to Bridge Engineering
CEIE 525	Structural Evaluation and Rehabilitation
CEIE 531	Earth Retaining Structures and Slope Stability
CEIE 575	Design for Constructability
CEIE 605	Risk and Uncertainty in Civil Engineering

Total Credits 9

Electives

Select 21 credits from the following:	21
CEIE 512	Structural Steel Design ¹
CEIE 513	Reinforced Concrete Design ¹
CEIE 526	Advanced Steel Design
CEIE 527	Pre-stressed Concrete
CEIE 532	Foundation Design ¹
CEIE 535	Engineering Geology ¹
CEIE 571	Construction Administration ¹
CEIE 572	Building Information Modeling ¹
CEIE 573	Legal Aspects of the Construction Process
CEIE 576	Construction Cost Estimating
CEIE 607	Public Infrastructure Management and Finance
CEIE 611	Advanced Structural Analysis
CEIE 612	Structural Mechanics
CEIE 613	Structural Dynamics
CEIE 619	Special Topics in Structural Engineering

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CEIE 620	Intelligent Structural Systems	
CEIE 623	Advanced Reinforced Concrete Design	
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	
GBUS 510	Engineering Marketing and Financial Analysis	
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Total Credits		21

¹ Cross-listed as undergraduate courses