Civil Engineering with Concentration in Geotechnical/ Geoenvironmental Engineering, MSCivE

This program includes study in the areas of soil mechanics/foundations and geoenvironmental engineering. It includes studies of soil and related earth materials for problems related to the protection of human health and the environment. Related areas include soil mechanics, fate/transport in subsurfaces, subsurface remediation, and others. The degree requirements include core courses from the Department of Civil and Environmental Engineering (https://cee.northeastern.edu/academics/graduate-studies/ms-cive/), complemented by electives in civil and environmental engineering, as well as electives from other departments such as mechanical and industrial engineering.

Degree Requirements	With Report	With Thesis	Coursework Only
Required core courses	8 SH	8 SH	8 SH
Elective courses	20 SH	16 SH	24 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	**32 SH**	**32 SH**	**32 SH**

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (https://catalog.northeastern.edu/graduate/engineering/graduate-certificate-programs/).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Civil Engineering with a Concentration in Geotechnical/Geoenvironmental Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Civil Engineering with a Concentration in Geotechnical/Geoenvironmental Engineering in addition to earning a Graduate Certificate in Engineering Leadership (https://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-leadership-graduate-certificate/). Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require fulfillment of the 8-semester-hour core curriculum and 12 semester hours of restricted electives from the geotechnical/geoenvironmental engineering concentration coursework.

The Department of Civil and Environmental Engineering encourages students pursuing a GIEL certificate to complete their MS coursework requirements in their first year and their GIEL certificate requirements in their second year. Students who prefer to complete their GIEL certificate requirements in their first year are asked to speak with their MS degree advisor beforehand. For students pursuing a concentration in geotechnical/geoenvironmental engineering, the two courses required by the concentration are offered in alternate years. To complete this certificate program in two years, one of the courses needs to be taken in the first year and the other in the second year.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
CIVE 7301	Advanced Soil Mechanics	4
CIVE 7302	Advanced Foundation Engineering	4

Options

Complete one of the following options:

COURSEWORK OPTION

Code	Title	Hours
Complete 24 semester hours from the electives list below.		24

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 20 semester hours from the electives list below.		20

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 16 semester hours from the electives list below.		16

Electives List

Code	Title	Hours
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5300 and CIVE 5301	Environmental Sampling and Analysis and Lab for CIVE 5300	
CIVE 5536	Hydrologic and Hydraulic Design	
CIVE 5699	Special Topics in Civil Engineering (Vibration-based Structural Health Monitoring)	
CIVE 7230	Legal Aspects of Civil Engineering	
CIVE 7240	Construction Equipment and Modeling	
CIVE 7250	Environmental Chemistry	
CIVE 7251	Environmental Biological Processes	
CIVE 7260	Hydrologic Modeling	
CIVE 7311	Soil and Foundation Dynamics	
CIVE 7312	Earthquake Engineering	
CIVE 7313	Ground Improvement	
CIVE 7330	Advanced Structural Analysis	
CIVE 7331	Structural Dynamics	
IE 6200	Engineering Probability and Statistics	
IE 7290	Reliability Analysis and Risk Assessment	
ME 5657	Finite Element Method 1	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required