

NORTHWESTERN UNIVERSITY MASTERS OF SCIENCE PROGRAM IN GEOTECHNICAL ENGINEERING

2021-2022

Note: The recommended program includes 12 courses, in addition to the Geotechnical Engineering Seminar.
The minimum number of courses for an MS is 12 (9 required + 3 electives).

Track		1 st Quarter/Fall	2 nd Quarter/Winter	3 rd Quarter/Spring
Recommended: 4 Courses/Quarter plus Geotechnical Engineering Seminar		Soil Mechanics I (450-1)	Soil Mechanics II (450-2)	Energy Geostuctures and Geosystems (353)
		Finite Element Methods in Mechanics (327) OR Mechanics of Continua (417)	Unsaturated Soil Mechanics (452)	Computational Geotechnics (456)
		Individual Design/Research Project (499)	Individual Design/Research Project (590)	Individual Design/Research Project (590)
		4 th Course from Tracks below	4 th Course from Tracks below	4 th Course from Tracks below
			Seminar in Geotechnical Engineering in winter (515-1) and spring (515-2) quarters	
Tracks Choose 1 Course/Quarter	Structures	Structural Analysis – Dynamics (320) Matrix Analysis of Structures (423) Building Science (395-0-26) Mechanics of Composite Materials (414)	Properties of Concrete (321) Structural Steel Design (323) Stability of Structures (424) Building Science (395-0-27)	Reinforced Concrete (325) Computational Forensics and Failure Analysis (328) High Performance Architectural Design (386) Plates and Shells (410) Quasibrittle Fracture and Scaling (430)
	Others	Uncertainty Analysis (306) Chemical Processes in Aquatic Systems (367) Environmental Transport Processes (440) Mathematical Inverse Methods in Earth and Environmental Sciences (Earth 353)	Advanced Finite Element Methods 1 (426-1) Theory of Elasticity (415) Infrastructure Systems Analysis (483)	Advanced Finite Element Methods 2 (426-2) Experimental Solid Mechanics (413) Computational Chemodynamics (448)
Note: required courses/projects are in bold face				
¹ number in parenthesis are Civ-Env courses unless noted otherwise				