

# NORTHWESTERN UNIVERSITY MASTERS OF SCIENCE PROGRAM IN GEOTECHNICAL ENGINEERING

## 2023-2024

**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 <sup>st</sup> Quarter/Fall	2 <sup>nd</sup> Quarter/Winter	3 <sup>rd</sup> Quarter/Spring
Recommended:  4 Courses/Quarter plus Geotechnical Engineering Seminar		<b>Granular Materials for Geosystem Engineering (495)</b>	<b>Energy Geosystems and Geostructures (353)</b>	<b>Case Studies (495)</b>
		<b>Finite Element Methods in Mechanics (327)</b>	<b>Geohazard Assessment and Mitigation (395)</b>	<b>Landfill Design (495)</b>
		<b>Individual Design/Research Project (499)</b>	<b>Individual Design/Research Project (590)</b>	<b>Individual Design/Research Project (590)</b>
		4 <sup>th</sup> Course from Tracks below	4 <sup>th</sup> Course from Tracks below	4 <sup>th</sup> Course from Tracks below
		<b>Seminar in Geotechnical Engineering in winter (515-1) and spring (515-2) quarters</b>		
<b>Tracks</b> Choose 1 Course/Quarter	Structures	Matrix Analysis of Structures (423) Building Science (388-1)	Properties of Concrete (321) Reinforced Concrete (325) Stability of Structures (424) Building Science (388-2) Structural Analysis Dynamics (320)	Structural Steel Design (323) High Performance Architectural Design (386) Plates and Shells (410) Quasibrittle Fracture and Scaling (430)
	Others	Uncertainty Analysis (306) 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) Computational Chemodynamics (448)
Note: required courses/projects are in <b>bold</b> face				
<sup>1</sup> number in parenthesis are Civ-Env courses unless noted otherwise				