

# NORTHWESTERN UNIVERSITY MASTERS OF SCIENCE PROGRAM IN GEOTECHNICAL ENGINEERING

## 2022-2023

**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>Soil Mechanics I (450-1)</b>	<b>Foundation Engineering (352)</b>	<b>Constitutive Models for Soils (454)</b>
		<b>Finite Element Methods in Mechanics (327) OR Mechanics of Continua (417)</b>	<b>Plasticity and Limit Analysis (455)</b>	<b>Terramechanics (357)</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	Structural Analysis – Dynamics (320) Matrix Analysis of Structures (423) Building Science (388-1)	Properties of Concrete (321) Reinforced Concrete (325) Stability of Structures (424) Building Science II (388-2)	Structural Steel Design (323) Computational Forensics and Failure Analysis (328) High Performance Architectural Design (386) Plates and Shells (410) Quasibrittle Fracture and Scaling (430)
	Others	Uncertainty Analysis (306) Environmental Transport Processes (440) Seismology and Earth Structure (Earth 323) Scientific Programming in Python (Earth 361)	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 <b>bold</b> face				
<sup>1</sup> number in parenthesis are Civ-Env courses unless noted otherwise				