

# CIVIL AND ENVIRONMENTAL ENGINEERING, MASTER OF ENGINEERING (M.ENG.)

**Non-thesis only:** 30 credits required

All Professional Master of Engineering Programs consist of 10 courses/30 credits. All students are expected to complete a preliminary course plan for their intended degree program. Degree planning worksheets can be found here: <https://advancedengineering.umd.edu/degree-planning-sheets> (<https://advancedengineering.umd.edu/degree-planning-sheets/>)

All students must complete 30 credits of coursework within one of the following specializations. Courses listed under each option are pre-approved. Any other course a student wishes to take must be approved by an advisor.

## Geotechnical and pavements

Course	Title	Credits
Students can select from the following courses. All other courses		30
must be approved by an advisor.		

ENCE441	Foundation Design	
ENCE447	Pavement Engineering	
ENCE640	Advanced Soil Mechanics	
ENCE641	Advanced Foundations Systems	
ENCE644	Advanced Pavement and Civil Engineering Materials	
ENCE645	Geotechnics of Waste Disposal	
ENCE647	Slope Stability and Seepage	
ENCE740		
ENCE741	Earth Retaining Structures	
ENCE743	Soil Dynamics and Earthquake Engineering	
ENCE744	QA/QC and Specification for Highway Materials	

## Structures

Course	Title	Credits
Students can select from the following courses. All other courses		30
must be approved by an advisor.		

ENCE610	Fundamentals of Structural Analysis	
ENCE611	Finite Element Methods	
ENCE613	Structural Dynamics	
ENCE710	Steel Structures I	
ENCE713	Concrete Structures I	
ENCE715	Earthquake Engineering	
ENCE717	Bridge Structures	
ENCE718	Advanced Structural Systems	

## transportation

Course	Title	Credits
Students can select from the following courses. All other courses		30
must be approved by an advisor.		

ENCE670	Highway Traffic Characteristics and Measurements	
ENCE672	Regional Transportation Planning	
ENCE673	Urban Transportation	
ENCE674	Urban Transit Planning and Rail Transportation Engineering	
ENCE675	Airport Planning and Design	
ENCE676	Highway Traffic Flow Theory	
ENCE677	OR Models for Transportation Systems Analysis	
ENCE681	Freight Transportation Analysis	

## project management

Course	Title	Credits
Core courses		15
ENCE661	Project Cost Accounting and Finance	
ENCE662	Introduction to Project Management	
ENCE664	Legal Aspects of Engineering Design and Construction	
ENCE665	Management of Project Teams	
ENCE627	Project Risk Management	
Electives chosen with advisor		15

## Environmental and water resources

Course	Title	Credits
Students can select from the following courses. All other courses		30
must be approved by an advisor.		

ENCE630	Environmental and Water Resource Systems I	
ENCE631	Hydrologic Analysis and Nonpoint Pollution Models	
ENCE635	Geographic Information Systems for Watershed Analysis	
ENCE652	Microbiological Principles of Environmental Engineering	
ENCE650	Process Dynamics in Environmental Systems	
ENCE651	Chemistry of Natural Waters	
ENCE655	Environmental Behavior of Organic Pollutants	
ENCE730	Environmental and Water Resource Systems II	
ENCE755		