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

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 must be approved by an advisor:
---|---|---|---
ENCE441 | Foundation Design | 30 |
ENCE447 | Pavement Engineering | |
ENCE640 | Advanced Soil Mechanics | |
ENCE641 | Advanced Foundations Systems | |
ENCE643 | | |
ENCE644 | Advanced Pavement and Civil Engineering Materials | |
ENCE645 | Geotechnics of Waste Disposal | |
ENCE647 | Slope Stability and Seepage | |
ENCE740 | Computational Geomechanics | |
ENCE741 | Earth Retaining Structures | |
ENCE743 | Soil Dynamics and Earthquake Engineering | |
ENCE744 | QA/QC and Specification for Highway Materials | |
ENCE747 | | |

Structures

Course | Title | Credits | Students can select from the following courses. All other courses must be approved by an advisor:
---|---|---|---
ENCE610 | Fundamentals of Structural Analysis | 30 |
ENCE611 | Finite Element Methods | |
ENCE613 | Structural Dynamics | |
ENCE710 | Steel Structures I | |
ENCE711 | Concrete Structures I | |
ENCE714 | | |
ENCE715 | Earthquake Engineering | |
ENCE716 | | |
ENCE717 | Bridge Structures | |
ENCE718 | Advanced Structural Systems | |

transportation

Course | Title | Credits | Students can select from the following courses. All other courses must be approved by an advisor:
---|---|---|---
ENCE670 | Highway Traffic Characteristics and Measurements | 30 |
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
---|---|---|---
ENCE661 | Project Cost Accounting and Finance | 15 |
ENCE662 | Introduction to Project Management | |
ENCE664 | Legal Aspects of Engineering Design and Construction | |
ENCE665 | Management of Project Teams | |
ENCE667 | 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 must be approved by an advisor:
---|---|---|---
ENCE630 | Environmental and Water Resource Systems I | 30 |
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 | |
ENCE752 | | |
ENCE753 | | |
ENCE755 | Transformations of Organic Compounds in the Environment | |
ENCE756 | | |