CIVIL AND ENVIRONMENTAL ENGINEERING, MASTER OF SCIENCE (M.S.)

Students are required to complete 30 credits within one of the seven specializations. The M.S. degree program offers a thesis option and very rarely a non-thesis option. Applicants who do not wish to complete a thesis are encouraged to consider the Professional Master of Engineering (ENPM) degree instead: http://www.gradschool.umd.edu/catalog/programs/enpm.htm

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td><strong>Specialization Requirements (select one)</strong></td>
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1. Environmental
   - ENCE650 Process Dynamics in Environmental Systems
   - ENCE651 Chemistry of Natural Waters
   - ENCE652 Microbiological Principles of Environmental Engineering

2. Civil Systems
   - ENSE621 Systems Concepts, Issues, and Processes
   - or ENSE622 Systems Requirements, Design and Trade-Off Analysis
   - ENCE603 Management Science Applications in Engineering
   - or ENCE677 OR Models for Transportation Systems Analysis
   - ENCE688 Advanced Topics in Civil Engineering (ENCE688A Sensing and Systems Control)

3. Geotechnical
   - All courses approved by advisor

4. Project Management
   - 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

5. Structures
   - All courses approved by advisor

6. Transportation
   - All courses approved by advisor

7. Water Resources
   - ENCE431 Hydrologic Engineering
   - ENCE530 Environmental and Water Resource Systems I

Total Credits: 30

**THESIS OPTION:**
- At least 24 credits of coursework are required beyond the B.S. degree, including a minimum of 18 credits at the 600 level or above.
- In addition, six credits of ENCE799 are required.

**NON-THESIS OPTION:**
- At least 30 credits of coursework are required beyond the B.S. degree, including a minimum of 24 credits at the 600 level or above.
- In addition, students are required to complete a scholarly paper