

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

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|----------------------|--------------------------------------------|-----------|
| ENCE630 | Environmental and Water Resource Systems I | |
| Total Credits | | 30 |

Students are required to complete 30 credits within one of the seven specializations. Students complete a set of core courses as well as electives. 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: <https://academiccatalog.umd.edu/graduate/programs/civil-environmental-engineering-pmce/>

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

| Course | Title | Credits |
|-------------------------------------------------|-----------------------------------------------------------------------------|-----------|
| Specialization Requirements (select one) | | 30 |
| 1. Environmental | | |
| ENCE650 | Process Dynamics in Environmental Systems | |
| ENCE651 | Chemistry of Natural Waters | |
| ENCE652 | Microbiological Principles of Environmental Engineering | |
| 2. Civil Systems | | |
| ENSE621 | Systems Engineering Concepts and Processes: A Model-Based Approach | |
| | or ENSE622 System Trade-off Analysis, Modeling, and Simulation | |
| ENCE603 | Data Analytics for Project Managers | |
| | 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 | |