

CIVIL ENGINEERING MASTER OF SCIENCE

Leading to a Master of Science Degree in Civil Engineering

Program Description

The Master of Science in Civil Engineering—A thesis and research-based program that prepares students for innovative leadership in the field or for further education. Students must complete a minimum of 31 total credits, which includes a minimum of 24 credit hours of regular coursework, six thesis credits, and a one-credit course in professional perspectives. The Master of Science in Civil Engineering can be pursued on a full-time basis (three-four courses per semester), leading to completion in as little as one year, or on a part-time basis (one-two courses per semester), leading to completion in under two years.

Program Educational Outcomes

The Master of Science in Civil Engineering emphasizes real-world engineering problems as a practicing professional engineer, while addressing the American Society of Civil Engineers (ASCE) recommended body of knowledge for future civil engineers. Per the recommendation of the ASCE (www.asce.org) and as required by state regulations, civil engineering graduates and practitioners are strongly encouraged to become licensed engineers, which allows engineers to take personal responsibility for the work they perform for public and private clients. The Master of Science in Civil Engineering program is designed to meet criteria outlined by ASCE regarding post-baccalaureate education by addressing current and future local, national, and global needs, and is widely supported by representatives of the private, public, and academic sectors of the civil engineering profession

Student Learning Outcomes

Graduates of the Master of Science in Civil Engineering will be able to:

- Demonstrate competence in computer simulation in civil engineering.
- Demonstrate competence in sustainable engineering design.
- Identify, evaluate, and apply project management tools and techniques to engineering issues as they pertain to intra-disciplinary and inter-disciplinary teams.
- Research, analyze and communicate information related to advanced topics and designs.
- Demonstrate the knowledge, tools and techniques associated with advanced topics and designs.

Total credits required: 31 credits

Students must complete a minimum of 31 total credits from the following list of courses, which includes a minimum of 24 credit hours of regular coursework, six thesis credits, and a one-credit course in professional perspectives

| Course | Title | Credits |
|--|-------------------------------------|---------|
| Select 24 credits from the following list of CIVE courses | | |
| CIVE7000 | CONSTRUCTION ENGINEERING MANAGEMENT | 3 |
| CIVE7200 | SUSTAINABLE INFRASTRUCTURE | 3 |

| Course | Title | Credits |
|--|--|---------|
| CIVE7275 | ENVIRONMENTAL BIOLOGICAL SYSTEMS | 3 |
| CIVE7300 | TRAFFIC ANALYSIS & SAFETY | 3 |
| CIVE7375 | CONTAMINANT FATE AND TRANSPORT | 3 |
| CIVE7500 | ADVANCED FOUNDATION ENGINEERING | 3 |
| CIVE7575 | PHYSICAL & CHEMICAL TREATMENT PROCESSES | 3 |
| CIVE7600 | ADVANCED STEEL DESIGN | 3 |
| CIVE8100 | ENGINEERING MODELING & ANALYSIS | 3 |
| CIVE8250 | ENGINEERING ESTIMATING & SCHEDULING | 3 |
| CIVE8400 | HIGHWAY DESIGN & TRANSPORTATION PLANNING | 3 |
| CIVE8550 | SITE PLANNING & DEVELOPMENT | 3 |
| CIVE8700 | BRIDGE DESIGN | 3 |
| And complete the following three courses: | | |
| ENGR7101 | PROFESSIONAL PERSPECTIVES | 1 |
| ENGR7100 | THESIS I | 3 |
| ENGR7200 | THESIS II | 3 |