

## [Emphasis - Civil Engineering](#)

- [M.S. in Engineering Science](#)
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### **M.S. in Engineering Science Description**

The M.S. in engineering science is offered in a number of emphasis areas: aeroacoustics, chemical engineering, civil engineering, computational hydroscience, computer engineering, computer science, electrical engineering, electromagnetics, environmental engineering, geology, geological engineering, hydrology, mechanical engineering, material science and engineering, and telecommunications.

#### **Minimum Total Credit Hours: 30 Course Requirements**

A student must complete the requirements for an emphasis area. For most emphasis areas, the degree may be completed as a:

- Thesis option (30-hour program, to include 6 hours of thesis),
- Nonthesis option (30- hour program, to include a minimum of 3 hours of a design-oriented project course), or
- Coursework option (30-hour program, to include a final oral examination in front of a committee, but no written report)

### **Emphasis - Civil Engineering Description**

A degree of M.S. in engineering science with emphasis in civil engineering prepares a student with advanced technical knowledge and communication skills for pursuing a career in industry, engineering research and development, public service, or for doctoral work. The program offers a choice of several concentration areas: structures, geotechnical engineering, construction materials, water resource engineering, environmental engineering, transportation systems, infrastructure asset management, and earthquake and disaster response management.

#### **Goals/Mission Statement**

The program will provide high quality graduate education in a range of civil engineering disciplines and will produce research and scholarship that is nationally recognized and supports the economic development of the state, the region, and the nation.

#### **Course Requirements**

The thesis option for the M.S. with emphasis in civil engineering requires at least 24 hours of course work and at least 6 hours of thesis credit (Engr 697- Thesis) with a thesis defense. The nonthesis option requires 27 hours of course work and a 3-hour project or research course (Engr 699-Special Projects in Engineering Science or Engr 693-Research Topics in Engineering Science) with a written report and oral presentation.

Required graduate course work for either option includes at least one course in mathematics (e.g., Engr 591-Engineering Analysis I, Math 555- Advanced Calculus I, Math 556-Advanced Calculus II, Math 575- Mathematical Statistics I); one course in numerical method (e.g., Engr 590-Finite Element Analysis); and one course in mechanics (e.g., Engr 617-Continuum Mechanics). Other graduate course work must be approved by the student's adviser.

#### **Other Academic Requirements**

For either option, a candidate must pass a final oral examination.

