

MASTER OF SCIENCE IN ENGINEERING DEGREE PROGRAM

The Master of Science in Engineering Degree is a general engineering program with four areas of concentration:

Chemical Engineering

Civil Engineering

Environmental Engineering

Mechanical Engineering

The **Civil Engineering** and the **Environmental Engineering** concentrations are administered through the **Department of Civil and environmental Engineering**. The student must specify the concentration in the graduate school application.

ADMISSION

The following are university admission requirements to the master's programs in the College of Engineering. Students will be awarded graduate degree status admission if they satisfy all the admission requirements.

- 1) Meet the requirements for admission to the graduate school.
- 2) Have an undergraduate degree from an ABET (or equivalent) accredited program.
- 3) Have a cumulative Grade Point Average (GPA) of 3.00 on a 4.00 scale.
- 4) Have GRE verbal and quantitative scores in the higher percentiles.
- 5) Have previous educational background in the intended area of study.

Students may be awarded provisional graduate degree status admission if they satisfy the following requirements.

- 1) Have a minimum cumulative Grade Point Average (GPA) of 2.75 on a 4.00 scale.
- 2) Have GRE verbal and quantitative scores in upper percentiles.

Provisional students must petition the Dean of Engineering for full status to the graduate program during the term in which the first 12 graduate semester credit hours will be completed. To be considered for full degree status provisional students must have earned a minimum GPA of 3.0 in all courses recommended by the faculty advisor and the head of the graduate program.

Students may be awarded non-degree status admission or special student status admission if they satisfy the requirements as outlined in the catalog section "Types of Admission" under Admissions Information and Requirements. Special students must petition the Dean of Engineering for full status to the graduate program during the term in which the first 12 graduate semester credit hours will be completed. To be considered for full degree status, special students must have earned a minimum GPA of 3.0 and have GRE verbal and quantitative scores in upper percentiles.

CURRICULUM

Each area of concentration in the Master of Science in Engineering (MSE) degree program has an option of a thesis or non-thesis degree plan. The thesis option requires 30 semester credit hours including 6 semester credit hours for the thesis. The non-thesis option requires 33 semester credit hours including 3 semester hours for a major project. Each option includes 12 semester credit hours of graduate courses in general engineering with the remaining hours to be determined by the student and his academic advisor during the first semester of acceptance to the graduate program as a degree status student.

During the first semester of graduate degree status, the student should select an advisory committee consisting of at least three members, two of whom must come from the engineering faculty, and the chairman of the committee who shall be a full member of the graduate faculty in engineering.

Thesis Option Degree Program Requirements

General Requirements6 SCH
GNEG 5086 Thesis

***General Engineering Requirements** 12 SCH
GNEG 5063 Engineering Analysis I
GNEG 5073 Engineering Analysis II
GNEG 5033 Engineering Probability and Statistics
GNEG 5133 Numerical Methods in Engineering
GNEG 5023 Operations Research
GNEG 5193 Special Topics

Technical Electives 12 SCH
Selection based on consent of student's academic advisor.

Total Degree Requirements 30 SCH
* The student must consult his/her academic advisor and take at least two courses in GNEG 5063, 5073, 5033, 5133 or 5023.

Non-Thesis Option Degree Program Requirements

General Requirements 3 SCH
GNEG 5303 Graduate Project or
GNEG 5203 Graduate Internship

***General Engineering Requirements** 12 SCH
GNEG 5063 Engineering Analysis I
GNEG 5073 Engineering Analysis II
GNEG 5033 Engineering Probability and Statistics
GNEG 5133 Numerical Methods in Engineering
GNEG 5023 Operations Research
GNEG 5193 Special Topics

Technical Electives **18 SCH**

Selection based on consent of student's academic advisor.

Total Degree Requirements **33 SCH**

*The student must consult his/her academic advisor and take at least two courses in GNEG 5063, 5073, 5033, 5133 or 5023.

Some of the courses offered in Civil and Environmental Engineering areas in the last few years include

Civil Engineering Area

CVEG 5123 Structural Dynamics

CVEG 5173 Finite Element Analysis

CVEG 5213 Prestressed Concrete Design

CVEG 5313 Management of Engineering Projects

GNEG 5193 – Special Topics (courses with following titles were offered in the last few years)

Advanced Steel Design

Design of Highway Structures

Advanced Foundations

Seepage and Earth Dams

Environmental Engineering

CVEG 5133 Physical/Chemical Unit Operations in Water and Wastewater Treatment

CVEG 5143 Hazardous Waste Management

CVEG 5153 Biological Unit Operations in Environmental Engineering

CVEG 5163 Air Pollution Engineering

CVEG 5313 Management of Engineering Projects

CHEG 5033 Environmental Processes

CHEG 5043 Remediation Technologies

GNEG 5193 – Special Topics (courses with following titles were offered in the last few years)

Environmental Modeling

Geo-Environmental Engineering

Renewable Energy