

# MS IN ENGINEERING: MECHANICAL ENGINEERING

**Home Department:** Mechanical Engineering

**Available:** On Campus Only

**Program Advisor/Contact:**

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## Program Overview

The Master of Science in Engineering is a professional master's program that builds on an undergraduate engineering program by offering additional depth and greater mastery in a number of technical areas.

## Program Objectives

The MSE-Mechanical Engineering program is intended for individuals who desire a deeper understanding and knowledge of mechanical engineering as applied to various systems. Students select courses from a structured framework in order to customize a program that best meets their individual and career needs.

To receive the M.S. degree a student in the ME graduate program must complete 40 credit hours of graduate work. There are two plans to choose from:

- Plan A (consists of course work, research, and a thesis)
- Plan B (consists of only course work)

The student will receive a Master's degree upon completion of ten (10) courses within the program. This program has a thesis option.

## MSE-Mechanical Engineering Program Curriculum Requirements

Completion of 40 credits as follows:

### Program of Study

Code	Title	Credit Hours
<b>Required Courses</b>		
MECH-600	Engineering Mathematics with Applications	4
Select up to four Mechanical Engineering courses from the 400 level course list **		16
Select at least five Mechanical Engineering courses from the 600 level course list (Or three courses and Thesis) **		20
** Course prerequisites must be observed.		
<b>Total Credit Hours</b>		<b>40</b>

### 400 Level Course Electives

(Course prerequisites must be observed.)

Code	Title	Credit Hours
MECH-416	Introduction to Finite Element Analysis with Structural Applications	4

MECH-426	Fuel Cell Science and Engineering	4
MECH-427	Energy and the Environment	4
MECH-428	Bio and Renewable Energy	4
MECH-4XX or Two 400 Level Technical Electives		8

### 600 Level Course Electives

(Course prerequisites must be observed.)

Code	Title	Credit Hours
MECH-610	Mechanics of Materials I: Linear Elasticity	4
MECH-611	Mechanics of Material II: Nonlinear Elastic-Plastic Behavior	4
MECH-615	Engineering Optimization	4
MECH-621	Applied Transport Phenomena	4
MECH-626	Hydrogen Generation, Storage and Safety	4
MECH-627	Green Energy Conversion	4
MECH-645	Hybrid Electric Vehicle Propulsion	4
MECH-647	Combustion & Emissions	4
MECH-682	Mechanics and Design Simulation of Fiber-Reinforced Composite Materials	4
MECH-6XX or Two 600 Level Technical Electives		8
Thesis		8