

# **Master of Science in Mechanical Engineering program outline**

The Mechanical Engineering program requires 30 credits of graduate-level coursework. All courses are 3 credits unless otherwise noted.

## **Core courses**

Required for all students (15 credits)

ME 401 Applied Engineering Analysis

ME 411 Product Development and Entrepreneurship

ME 427 Transport Phenomena

ME 436 Solid Mechanics

ME 442 Material Science

## **Elective Courses**

Five required (15 credits)

The MSME students may select elective courses in their field of concentration which includes: mechanics, thermal sciences, robotics, manufacturing, mechanical system, hydraulics, structural analysis, MEMS, and machine design. Typical elective courses are:

ME 402 Engineering Computational Analysis

ME 418 Quality Control Engineering

ME 425 Energy Systems

ME 432 Vibration of Dynamic Systems

ME 438 Machine Design

ME 439 Classical Mechanics

ME 442 Material Science

ME 451 Mechatronics

ME 452 Nanotechnology

ME 454 Control Systems

ME 498 Advanced Topics in Mechanical Engineering (1 to 3 credits)

## **Thesis/Project**

Option: (3 or 6 credits)

ME 501 Graduate Education Continuum

ME 599 Thesis/Project

Graduate students are strongly recommended to select the thesis option to complete their graduate course work. However, they may choose a three-credit hour project option.

## **Suggested Course Sequence**

First Semester

ME 401 – Applied Engineering Analysis

ME 411 – Product Development

ME 427 – Transport Phenomena

Second Semester

ME 436 – Solid Mechanics

ME 442 – Materials Science

Technical Elective

Third Semester

ME 501 – Graduate Education Continuum

Technical Elective

Technical Elective

Fourth Semester

ME 599 – Thesis / OR Project +

Technical Elective

Technical Elective