

MASTER OF SCIENCE IN MECHANICAL ENGINEERING

Student Learning Outcomes

Students graduating from this program will:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multi-disciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for, and an ability to engage in life-long learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Program Requirements

The mechanical engineering program offers graduate students an opportunity to get a state-of-the-art education in dynamic, challenging and professionally significant specialty areas. With written approval from the faculty advisor, master's students are allowed to take credits in other fields to encourage them to broaden their education beyond the mechanical engineering field. There are three degree options for earning a master's in mechanical engineering: coursework only, project or thesis options. For further information call (816) 235-5550 or e-mail sce@umkc.edu.

- Master of Science with *coursework only* option requires the completion of a minimum of 30 credit hours of approved graduate coursework (300-level or higher). The graduate coursework must include at least 18 credit hours of 5500/5600-level courses.
- Master of Science with *project* requires the completion of a minimum of 30 credit hours, which includes 27 credit hours of approved graduate coursework (300-level or higher) and three credit hours of independent project (MEC-ENGR 5500). At least 18 credit hours must be at the 5500/5600-level. The candidate must submit a report prepared per the advisor's guidelines and present the project work in front of a three-member project examining committee.
- Master of Science with *thesis* option requires the completion of a minimum of 30 credit hours of approved graduate coursework (300-level or higher). The graduate coursework must include at least 24 credit hours of approved graduate coursework (300-level or higher) and six credit hours of thesis work (MEC-ENGR 5599). At least 18 credit hours must be at the 5500/5600-level. The candidate must submit a thesis prepared per the graduate school guidelines and orally defend the thesis work in front of a three-member thesis examining committee.

A minimum of six credit hours of advanced mathematics from an approved course list is required for the M.S. degree in Mechanical Engineering. Exceptions are available by petition to the CME Graduate Committee.

Other specifications for students pursuing the project or thesis option:

1. The student must request to schedule a project or thesis defense in the first half of the semester in which the student plans to defend.
2. The written part of the project/thesis must be completed and given to all the committee members at least ten days prior to the defense date.
3. The defense date and an abstract must be advertised to the CME faculty and students at least one week prior to the scheduled defense date.