

M.S. IN MECHANICAL ENGINEERING

OVERVIEW

The field of mechanical engineering is very diverse, offering opportunities in research, design, product development and manufacturing. Major areas of mechanical engineering include aerodynamics, fluid dynamics, solid mechanics, bioengineering, material sciences, nanotechnology, dynamics, automotive engineering, production and process, machine design, vibrations and control systems, and reliability-based design and optimization. The department features state of the art studies using modern equipment and techniques.

ADMISSIONS REQUIREMENTS

Applicants must hold a bachelor of science in mechanical or industrial engineering, or a closely related field, from an accredited engineering program. If the baccalaureate is in a non-engineering or science area, students may be required to complete prerequisite courses without graduate degree credit. For transfer credit, students should refer to the general policies of the College of Graduate Studies.

PROGRAM REQUIREMENTS

The Master of Science degree program may be pursued with thesis, project and non-thesis options.

1. **Master of Science degree with thesis option:** The plan of study must include 30 hours of graduate work, including 9 credit hours of Master of Science thesis successfully completed under the supervision of an M.I.M.E. faculty member. Courses must be selected from those approved for graduate study (5000 level or above). A minimum of 12 hours of course work must be in the student's focus area of study.
2. **Master of Science degree with non-thesis options:**
 - a. **Master of Science degree with project option:** Students are required to complete 30 credit hours at the graduate level, including six hours of Master of Science project under the supervision of a M.I.M.E. faculty member. The project option must be approved by the M.I.M.E. departmental chair or the graduate program director. Students are required to submit a professional, written project report to the department after due approval by the faculty adviser. The project report will then be logged and archived in the department as a technical report.
 - b. **Master of Science degree with course work-only option:** Students are required to complete a minimum of 30 credit hours of graduate level course work as specified by the department.

The majority of a student's course work for all of the options will normally be from M.I.M.E. courses. Three or more hours of the course work must be from approved courses in advanced mathematics. A minimum of 12 credits must be 6000-level courses. A student may be required to complete more than the required minimum hours to satisfy prerequisite deficiencies specified as provisional admission conditions and/or to fulfill educational requirements for the program as specified by the adviser or department.

Also, all supported students are required to enroll and/or participate in a graduate seminar (MIME 6930 (<https://catalog.utoledo.edu/search/?P=MIME%206930>) or equivalent) each semester. The department may specify additional credit or non-credit requirements for satisfactory completion as well as enhancement of degree objectives. The plan of study for the Master of Science degree must be filed before 16 hours of academic course work has been completed. For full-time students, this normally will require that the plan of study be filed before registration for the second term.

- 6) Thesis or project option: generate high quality engineering research
- 5) Thesis or project option: explain their research clearly and concisely in written and oral formats
 - 1) Demonstrate technical proficiency in their focus area topics
 - 2) Solve problems using mathematics and engineering knowledge in one of the ME specialty areas
 - 3) Demonstrate ability to conduct a literature review
 - 4) Explain course projects in one of the ME specialty areas clearly and concisely in written and oral formats