MECHANICAL ENGINEERING, MS

Admission Requirements

Applicants for the master of science program must hold a bachelor's degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide evidence of an equivalent academic background to the Dean of the College of Engineering and Polymer Science and the appropriate department chair.

Applicants must submit official undergraduate transcripts, undergraduate grade point average, at least two letters of recommendation, and a statement of purpose. Personal statements or descriptions of post-baccalaureate experience that provide a rationale for proposed graduate study may also be submitted.

Applicants with a bachelor's degree must have an overall grade point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent).

Applicants whose native language is not English must have a TOEFL score of at least 79 or an IELTS score of at least 6.5.

Applicants with a bachelor's degree in a discipline other than mechanical engineering shall have completed coursework in calculus, differential equations, and one year of classical physics. They are also required to complete a number of bridge-up undergraduate courses as recommended by the admission committee. These bridge-up courses may be taken concurrently with graduate courses.

Degree Requirements

The University's Academic Requirements (See Academic Requirements in this Graduate Bulletin), the following college requirements and the department's academic requirements must all be satisfied for the master of science degrees in the College of Engineering and Polymer Science.

- Identify an Advisory Committee including a major advisor and at least one more faculty member before completion of nine credit hours of coursework.
- Complete a formal Plan of Study that is acceptable to the Advisory Committee with a minimum of 24 credit hours of coursework of which no more than six credits are special topics courses. The formal Plan of Study may be revised upon approval of the Advisory Committee.
- Successfully (no "fail" votes) defend the thesis before the Advisory Committee, or have the Engineering Report approved by the Advisory Committee, or successfully complete the appropriate department's nonthesis option requirements.

Thesis Option

Code	Title	Hours
Mechanical Engineering Courses		15
Approved Mathematics		3
Approved Electives		6
Master's Thesis		6
Total Hours		**30**

Nonthesis Option

Code	Title	Hours
Mechanical Engineering Courses		15
Approved Mathematics		3
Approved Electives		12
Engineering Report		2
Total Hours		**32**

Core Courses

All master's students are required to take at least two of the following Mechanical Engineering core courses.

Code	Title	Hours
MECE 609	Finite Element Analysis I	3
MECE 610	Dynamics of Viscous Flow I	3
MECE 611	Computational Fluid Dynamics I	3
MECE 615	Conduction Heat Transfer	3
MECE 622	Continuum Mechanics	3
MECE 628	Mechanical Behavior of Materials	3
MECE 630	Vibrations of Discrete Systems	3
MECE 660	Engineering Analysis (Cannot count toward the required core courses if used to substitute the mathematics requirement)	3
MECE 666	Analysis of Manufacturing Systems	3

- At least two of the mechanical engineering courses must be designated as core courses (see "Core Courses").
- Students are limited to not more than three 500-level course in engineering. Not more than two of the 500-level courses in engineering can be applied to the 15 credits of mechanical engineering coursework.
- No computer language courses are permitted for graduate credit.
- MECE 660 Engineering Analysis may replace approved mathematics.
- Courses in Statistics may also satisfy approved mathematics upon approval of the student's adviser.
- All master's degree requirements must be completed within six years.
- Students receiving an assistantship are funded for a maximum of two years and must take the thesis option.

Mechanical Engineering, Accelerated BS/MS

Overview

The Accelerated BS/MS program in Mechanical Engineering (ME) allows outstanding ME students to complete both bachelor's and master's degrees in just one more year of study after the BS degree. Students will take graduate courses in the last year of the BS program that count towards both BS and MS degree requirements. Up to 9 credit hours of graduate coursework can be double counted for both degrees.

Advantages of the Accelerated Program

1. **Flexibility during graduate school**. Students can complete graduate classes while fulfilling undergraduate degree requirements
2. **Reduce time**. Students start fulfilling graduate school requirements sooner. The accelerated program engages students in graduate level courses before their peers and provides the opportunity to make

connections with graduate instructors and other students in the program.

3. **Save tuition costs**. Students can save tuition costs by completing up to 9 graduate credit hours at the undergraduate tuition price. These same graduate credits are applied to their graduate degree at the University of Akron.

Admission Procedure

Students interested in this accelerated program should request an appointment with the Associate Chair for Graduate Programs in Mechanical Engineering, Dr. Xiaosheng Gao (xgao@uakron.edu), who will evaluate the student's qualifications for the program and recommend a plan of study.

During the third year of the baccalaureate degree, a student will formally apply to the program through the Graduate School. Upon acceptance, the student will be cleared to complete the remaining electives of the baccalaureate degree and the master's degree requirement in the last two years, graduating with both degrees in just five years.

The accelerated BS/MS option is also available for students in the ME BS-Coop program and students in the Aerospace Systems Engineering (ASE) program. These students would apply to the Graduate School in their fourth year and complete the BS and MS degree requirements in a total period of six years.

Requirements

Students in this accelerated option will need to complete the course requirements of the Master of Science in Mechanical Engineering program – Non-Thesis Option, as described in the Graduate Bulletin. A maximum of nine credits of 500-level graduate courses is allowed, which are generally completed in the fourth (senior) year. All remaining graduate credits must be at the 600-level and can be completed during the fourth and fifth year of the program.