MECHANICAL ENGINEERING: MODELING AND SIMULATION IN MECHANICAL ENGINEERING, MS

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Accelerated</th>
<th>Online</th>
<th>Hybrid</th>
<th>Evening/Weekend</th>
<th>Face to Face</th>
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<tbody>
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<td></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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Mode of Instruction Definitions

**Accelerated:** Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

**Evening/Weekend:** Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

**Face-to-Face:** Courses typically meet during weekdays on the UW–Madison Campus.

**Hybrid:** These programs combine face-to-face and online learning formats. Contact the program for more specific information.

**Online:** These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

**Requirement Detail**

- **Minimum Credit Requirement:** 30 credits
- **Minimum Residence Credit Requirement:** 18 credits

**Minimum Graduate Coursework Requirement:** 15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244/.

**Overall GPA Requirement:** 3.00 GPA required.

**Graduate GPA Requirement:** Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: https://policy.wisc.edu/library/UW-1203/.

**Other Grade Requirements:** Students must earn a C or above in all formal coursework. Students may not have more than two incompletes on their record at any one time.

**Assessments and Examinations:** None.

**Language Requirements:** No language requirements.

REQUIRED COURSES

A minimum of 24 formal course credits* are required (minimum of 15 formal credits in Mechanical Engineering (M E (http://guide.wisc.edu/courses/m_e/)) taken at UW-Madison). Requirements in the course list below must be completed as indicated.

*Formal credits are any course offering that is not a seminar course, thesis research course, or independent study course.

Acceptable courses are numbered 400 and above.

No thesis/research credits are permitted. Up to 6 credits of independent study are permitted but not required. Up to 3 credits of seminar are permitted.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>M E 903</td>
<td>Graduate Seminar (Two semesters are required and must be taken in the first two semesters.)</td>
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A minimum of 6 courses (18 credits total) must be taken from the courses listed:

- M E 440 Intermediate Vibrations
- M E/E C E 441 Kinematics, Dynamics, and Control of Robotic Manipulators
- M E 451 Kinematics and Dynamics of Machine Systems
- M E 459 Computing Concepts for Applications in Engineering
- M E 460 Applied Thermal / Structural Finite Element Analysis
- M E 468 Computer Modeling and Simulation of Autonomous Vehicles and Robots
- M E 531 Digital Design and Manufacturing
- M E/B M E 516 Finite Elements for Biological and Other Soft Materials
- M E/COMP SCI/E C E 532 Matrix Methods in Machine Learning
- M E 535 Computer-Aided Geometric Design
- M E 548 Introduction to Design Optimization
Advisor Approval of Study Plan
The faculty advisor must always approve the courses a student takes in the MS program. Students should schedule an appointment with their adviser when selecting their courses. During the final semester, the faculty advisor will review the courses taken again and if approved, sign the warrant request form.

Other Policy
Students in this program may not take courses outside the prescribed curriculum without faculty advisor and program director approval. Students in this program cannot enroll concurrently in other undergraduate or graduate degree programs.