MECHANICAL ENGINEERING, M.S.

The Department of Mechanical Engineering offers a number of master of science (M.S.) degree programs in Mechanical Engineering.

- M.S. Mechanical Engineering: Research (2 tracks) (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-research-ms/)
  - Thesis
  - Independent Study
- M.S. Mechanical Engineering: Accelerated Program (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-accelerated-program-ms/)
- M.S. Mechanical Engineering: Automotive Engineering (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-automotive-engineering-ms/)
- M.S. Mechanical Engineering: Modeling and Simulation in Mechanical Engineering (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-modeling-simulation-mechanical-engineering-ms/)

The M.S. Mechanical Engineering degree with a named option in Research takes approximately two years to complete. The thesis track has a significant research component giving students valuable hands-on research experience with mentoring by faculty in the Department of Mechanical Engineering. The independent study track has a stronger focus on coursework but also requires at least 3 credits of independent study mentored by faculty in the Department of Mechanical Engineering.

The M.S. Mechanical Engineering degree with named options in Accelerated Program; Automotive Engineering; and Modeling and Simulation in Mechanical Engineering; each take approximately 3 terms (1 calendar year) to complete. These three programs include only coursework.

All students are mentored by the world-class faculty in the mechanical engineering department at UW–Madison. For a list of mechanical engineering faculty along with faculty research interests, please visit our faculty directory (https://directory.engr.wisc.edu/display.php?faculty/?page=me&search=faculty). For more information on research areas see our page on research in Mechanical Engineering (https://www.engr.wisc.edu/department/mechanical-engineering/research-in-mechanical-engineering/).

ADMISSIONS

Students apply to the M.S. in Mechanical Engineering through one of the named options:

- M.S. Mechanical Engineering: Research (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-research-ms/)
- M.S. Mechanical Engineering: Accelerated Program (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-accelerated-program-ms/)
- M.S. Mechanical Engineering: Automotive Engineering (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-automotive-engineering-ms/)
- M.S. Mechanical Engineering: Modeling and Simulation in Mechanical Engineering (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-modeling-simulation-mechanical-engineering-ms/)

These can also be found by clicking on the Requirements tab on the right navigation bar and scrolling to the bottom of the page.

Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program’s website. Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s).

Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply)/.

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

There are three mechanisms for Graduate Student funding through the university for Mechanical Engineering M.S. students:

1. Fellowships
2. Graduate assistantships: project assistantships, teaching assistantships, and research assistantships
3. Traineeships

Funding is awarded based on the qualifications of the student, the number of applicants, the amount of available funding, the number of continuing students receiving support, and the degree program a student is enrolled in. Fellowship and research assistantship funding is only considered for thesis-based M.S. students. You can apply for funding for research assistantships by contacting individual faculty members directly. Please check our website (http://directory.engr.wisc.edu/me/faculty/) to look for faculty (only those listed with titles of assistant professor, associate professor, or professor can serve as graduate student advisors). Search for faculty who have research interests that align closely with your own by viewing faculty directory entries, visiting the faculty’s website (linked from the directory page), and reviewing publications by the faculty member. Once you have identified faculty with interests close to your own, you are encouraged to contact them by email to inquire regarding available research assistant positions. The admissions office does not know if a particular professor has research assistant positions available.

Students who apply to the department will be automatically considered for fellowship opportunities within the department. For information on applying for teaching assistant positions and for other information on
funding please see the department website (https://www.engr.wisc.edu/department/mechanical-engineering/contact/forms/). (https://sites.google.com/wisc.edu/meapplication/?pli=1&authuser=3)

Students enrolled in the M.S. Mechanical Engineering named options in Accelerated Program; Modeling and Simulation in Mechanical Engineering; and Automotive Engineering are not eligible to receive assistantships.

ADDITIONAL RESOURCES

FEDERAL LOANS
Students who are U.S. citizens or permanent residents may be eligible to receive some level of funding through the federal direct loan program. These loans are available to qualified graduate students who are taking at least 4 credits during the fall and spring semesters, and 2 credits during summer. Private loans are also available. Learn more about financial aid at their website (https://financialaid.wisc.edu/).

INTERNATIONAL STUDENT SERVICES FUNDING AND SCHOLARSHIPS
For information on International Student Funding and Scholarships visit the ISS website (https://iss.wisc.edu/students/new-students/funding-scholarships/).

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.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

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

Mode of Instruction Definitions

Evening/Weekend: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

Online: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

Hybrid: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

Accelerated: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>Half of degree coursework (15 out of 30 total credits) must be in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle">http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required.</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>Students must earn a C or above in all formal coursework. Students may not have any more than two Incompletes on their record at any one time.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>The M.S. Mechanical Engineering: Research, thesis track requires the student pass a formal thesis defense. All other programs do not require a thesis.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
</tr>
</tbody>
</table>

REQUIRED COURSES

Select a Named Option (p. 2) for required courses.

NAMED OPTIONS (SUB-MAJORS)
A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral.

View as listView as grid
• MECHANICAL ENGINEERING: ACCELERATED PROGRAM, M.S. (HTTP://GUIDE.WISC.EDU/GRADUATE/MECHANICAL-ENGINEERING/MECHANICAL-ENGINEERING-MS/MECHANICAL-ENGINEERING-ACCELERATED-PROGRAM-MS/)
• MECHANICAL ENGINEERING: AUTOMOTIVE ENGINEERING, M.S. (HTTP://GUIDE.WISC.EDU/GRADUATE/MECHANICAL-ENGINEERING/MECHANICAL-ENGINEERING-MS/MECHANICAL-ENGINEERING-AUTOMOTIVE-ENGINEERING-MS/)
• MECHANICAL ENGINEERING: CONTROLS, M.S. (HTTP://GUIDE.WISC.EDU/GRADUATE/MECHANICAL-ENGINEERING/MECHANICAL-ENGINEERING-MS/MECHANICAL-ENGINEERING-CONTROLS-MS/)
• MECHANICAL ENGINEERING: MODELING AND SIMULATION IN MECHANICAL ENGINEERING, M.S. (HTTP://GUIDE.WISC.EDU/GRADUATE/MECHANICAL-ENGINEERING/MECHANICAL-ENGINEERING-MS/MECHANICAL-ENGINEERING-MODELING-SIMULATION-MECHANICAL-ENGINEERING-MS/)
• MECHANICAL ENGINEERING: RESEARCH, M.S. (HTTP://GUIDE.WISC.EDU/GRADUATE/MECHANICAL-ENGINEERING/MECHANICAL-ENGINEERING-MS/MECHANICAL-ENGINEERING-RESEARCH-MS/)

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

MAJOR-SPECIFIC POLICIES

GRADUATE PROGRAM HANDBOOK

The Mechanical Engineering Graduate Program Handbook (https://www.engr.wisc.edu/me-grad-handbook/) is the repository for all of the program’s policies and requirements.

PRIOR COURSEWORK

Graduate Work from Other Institutions

With program approval, students are allowed to count graduate coursework from other institutions (up to 50% of the formal course requirement) toward the minimum graduate degree credit requirement and the minimum graduate coursework (50%) requirement. No credits from other institutions can be counted toward the minimum graduate residence credit requirement. Coursework earned five or more years prior to admission is not allowed to satisfy requirements.

UW–Madison Undergraduate

Up to 7 credits numbered 400 or above may be counted toward the minimum graduate degree credit requirement. These credits may be counted toward the minimum graduate coursework (50%) requirement if they are in courses numbered 700 or above. No credits may be counted toward the minimum graduate residence credit requirement. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison University Special

With program approval, and payment of the difference in tuition, students are allowed to count up to 15 credits of coursework numbered 400 or above taken as a UW–Madison University Special student toward the minimum graduate residence credit requirement and the minimum graduate degree credit requirement. These credits may be counted toward the minimum graduate coursework (50%) requirement if they are in courses numbered 700 or above. Coursework earned five or more years prior to admission is not allowed to satisfy requirements.

PROBATION

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

1. Good standing (progressing according to standards; any funding guarantee remains in place).
2. Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status).
3. Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

A semester GPA below 3.0 will result in the student being placed on academic probation. If a semester GPA of 3.0 is not attained during the subsequent semester of full time enrollment (or 12 credits of enrollment if enrolled part-time), this will be deemed unsatisfactory progress and the student may be dismissed from the program or allowed to continue for one additional semester based on advisor appeal to the Graduate School.

ADVISOR / COMMITTEE

All students will be advised by a Mechanical Engineering faculty member. Students pursuing the MS Mechanical Engineering: Research need to find a research or independent study advisor from the ME Faculty. Students pursuing MS Mechanical Engineering: Automotive Engineering, Modeling and Simulation in Mechanical Engineering, or Accelerated Program will be assigned an academic advisor from the ME Faculty.

CREDITS PER TERM ALLOWED

15 credits

TIME CONSTRAINTS

Master's degree students who have been absent for five or more consecutive years lose all credits that they have earned before their
absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

OTHER
n/a

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES
Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

LEARNING OUTCOMES

1. Demonstrate a strong understanding of mathematical, scientific, and engineering principles in the field.
2. Demonstrate an ability to formulate, analyze, and independently solve advanced engineering problems.
3. Apply the relevant scientific and technological advancements, techniques, and engineering tools to address these problems.
4. Recognize and apply principles of ethical and professional conduct.

PEOPLE

Faculty (who may serve as graduate advisor):

Professors: Ghandhi (chair), Negrut, Nellis, Osswald, Pfefferkorn, Pfotenhauer, Qian, Reindl, Sanders, Shapiro, Suresh, Thelen, Turng

Associate Professors: Eriten, C. Franck, Kokjohn, Krupenkin, Miller, Rothamer, Trujillo, Zinn

Assistant Professors: Adamczyk, M. Anderson, J. Andrews, L. Chen, Henak, Min, Pan, Roldan, Roth, Rudraraju, Rudykh, D. Thompson, X. Xu

Faculty Affiliates: M. Allen, Bonazza, Bronkhurst, J. Franck, Gleicher, Holloway, Jahns, Ludois, Sarlioglu, Schauer, Serverson, Thevamaran, Thoma, Venkataramanan, Witzenburg

To see all ME Faculty please visit the directory here. (https://directory.engr.wisc.edu/display.php/faculty/?page=me&search=faculty)