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 (Fall 2021 is the final term in which students can select this track. Students admitted to Spring 2022 and beyond will be required to follow the ‘thesis’ track.)
- 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. (Fall 2021 is the final term in which students can select the ‘independent study’ track. Students admitted to Spring 2022 and beyond will be required to follow the ‘thesis’ track.)

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/)

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**

**CURRICULAR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>See Named Option for policy information.</td>
</tr>
<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="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
</tr>
</tbody>
</table>

Overall 3.00 GPA required.

**POLICIES**

Students should refer to one of the named options for policy information:

- 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-ms/)

**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.

**NAMED OPTIONS**

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

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- 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: MODELING AND SIMULATION IN MECHANICAL ENGINEERING, M.S. (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-modeling-simulation-ms/)
- MECHANICAL ENGINEERING: RESEARCH, M.S. (http://guide.wisc.edu/graduate/mechanical-engineering/mechanical-engineering-ms/mechanical-engineering-research-ms/)
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

PROFESSORS
Darryl Thelen (Chair)
Christian Franck
Jaal Ghandhi
Dan Negrut
Gregory F. Nellis
Tim Osswald
Frank Pfefferkorn
John Pfothenhauer
Xiaoping Qian
Douglas Reindl
David Rothamer
Scott T. Sanders
Krishnan Suresh
Lih-sheng Tung

ASSOCIATE PROFESSORS
Peter Adamczyk
Mark Anderson
Melih Eriten
Katherine Fu
Sage Kokjohn
Tom N. Krupenkin
Franklin Miller
Sangkee Min
Mario F. Trujillo
Michael Zinn

ASSISTANT PROFESSORS
Joseph Andrews
Lianyi Chen
Corinne Henak
Wenxiao Pan
Pavana Prabhakar
Alejandro Roldan-Alzate
Josh Roth
Shiva Rudraraju
Stephan Rudykh
Dakota Thompson
Mike Wagner
Michael Wehner
Xiangru Xu

See also Mechanical Engineering Faculty Directory (https://directory. engr.wisc.edu/me/faculty/).