

MECHANICAL ENGINEERING (MS)

Graduate School

Program Website (<https://www.engineering.cornell.edu/mae/ms-mechanical-engineering/>)

CIP: 14.1901 | HEGIS: 0910.00 | NYSED: 78714

Graduate Field

Mechanical Engineering (<https://catalog.cornell.edu/graduate-school/mechanical-engineering/>)

Program Description

The Sibley School of Mechanical and Aerospace Engineering offers a terminal M.S. degree in Mechanical Engineering. This field of study is one of ninety-four major fields of study comprising The Graduate School at Cornell University. Graduate fields cross traditional college and department boundaries and afford a graduate student maximum flexibility in designing a program represented by faculty from virtually any discipline on campus. One of the top ten Mechanical Engineering departments in the U.S., our department hosts 40 faculty members with diverse research interests. Cornell, located in the beautiful New York Finger Lakes region, is home to a diverse student community with a large international student population.

Our Master of Science (M.S.) program in Mechanical Engineering provides classroom training and experience with research methodology at one of the premier research universities in the world. Our graduates find that their Cornell training and the resulting M.S. degree prepares them to succeed in industry, government, and academia. Please note there is **no financial support available** to students in this program—it is self-paid by the student.

The two-year M.S. program combines academic rigor with a strong research component. Working with faculty advisors, M.S. student tailor their studies to their particular interests and backgrounds, incorporating core topics in mechanical engineering as well as specialized courses.

Our M.S. students undertake a substantive body of research in the research group of a Field faculty member. They document their research in a master's thesis, which they defend in a formal examination by a faculty committee. Research projects are chosen in consultation with the supervising faculty member and enable students to benefit from Cornell's powerful combination of an unusually collaborative and interdisciplinary culture and outstanding research facilities. Mechanical Engineering has vibrant research programs in many research areas.

M.S. Program Details

- Duration: 4 terms
- Thesis required. The collective academic expectations of committee is that an M.S. Thesis should be publishable as independent research or be a significant secondary author contribution to a publication with postdoc/grad student/PI as first author.

You do not choose a master's thesis advisor before applying. Applications, reviewed by a committee of the faculty, are selected for admission based on a combination of factors: academic performance, letters of recommendation, research experience, and research interests that are a good fit with the research interests of our faculty. Matriculated

students are afforded the opportunity to interact with a number of faculty in seeking a good student-advisor match.

The M.S. program results in a "terminal" master's degree; it is not related to the Ph.D. program and is not a pathway into the Ph.D. program in Mechanical Engineering. This program is not recommended for students wishing to pursue at PhD at Cornell. Financial aid in the form of research assistantships and teaching assistantships are not provided for the M.S. degree program.

Concentrations

- Biomedical mechanics
- Dynamics and control
- Energy and sustainability
- Fluid dynamics
- Micro- and nanoscale engineering
- Solid mechanics and materials
- Thermal science

Program Information

- Instruction Mode: In Person
- Location: Ithaca, NY
- Minimum Credits for Degree: 48

Program Requirements

- 4 semesters of GRAD 9010 Graduate-Level Research
- 48 credits of core courses minimum
- Minimum Semesters for Degree: 4

Graduate School Milestones

- Responsible Conduct of Research Training: Required
- Open Researcher and Contributor ID (ORCID): Required
- Student Progress Reviews (SPR) begin: First year
- Masters Exam (M Exam): Spring of second year
- Thesis: Spring of second year

Course Requirements

- At least 20 credits of MAE 8900 Research in Mechanical and Aerospace Engineering
- At least 2 credits of MAE 7999 Mechanical and Aerospace Engineering Colloquium
- At least 15 credits at 5000-level or above
- At least 6 credits at 6000-level or higher (not including MAE 7999 or MAE 8900)

Program specific requirements that apply to all students are included below.

- MAE 6949 Seminar for M.S. and First-Year MAE Ph.D. Students taken in the first semester

Additional course requirements may be set by the student's Special Committee.

University Graduation Requirements Requirements for All Students

In order to receive a Cornell degree, a student must satisfy academic and non-academic requirements.

Academic Requirements

A student's college determines degree requirements such as residency, number of credits, distribution of credits, and grade averages. It is the student's responsibility to be aware of the specific major, degree, distribution, college, and graduation requirements for completing their chosen program of study. See the individual requirements listed by each college or school or contact the college registrar's office (<https://registrar.cornell.edu/service-resources/college-registrar-directory/>) for more information.

Non-academic Requirements

Conduct Matters. Students must satisfy any outstanding sanctions, penalties or remedies imposed or agreed to under the Student Code of Conduct (Code) or Policy 6.4. Where a formal complaint under the Code or Policy 6.4 is pending, the University will withhold awarding a degree otherwise earned until the adjudication process set forth in those procedures is complete, including the satisfaction of any sanctions, penalties or remedies imposed.

Financial Obligations. Outstanding financial obligations will not impact the awarding of a degree otherwise earned or a student's ability to access their official transcript. However, the University may withhold issuing a diploma until any outstanding financial obligations owing to the University are satisfied.

Learning Outcomes

- Learn advanced research skills
 - Synthesize existing knowledge, identifying and accessing appropriate resources and other sources of relevant information and critically analyzing and evaluating one's own findings and those of others.
 - Apply existing research methodologies, techniques, and technical skills.
- Demonstrate commitment to advancing the values of scholarship
 - Keep abreast of current advances within one's field and related areas.
 - Show commitment to personal professional development through engagement in professional societies and other knowledge transfer modes.
- Demonstrate professional skills
 - Adhere to ethical standards in the discipline.
 - Communicate in a style appropriate to the discipline.
 - Listen, give, and receive feedback effectively.