

# MASTER OF SCIENCE (MS) DEGREE IN THE FIELD OF MECHANICAL ENGINEERING

## Program Learning Outcomes for the MS Degree in the field of Mechanical Engineering

Upon completing the MS Degree in the field of Mechanical Engineering, students will be able to:

1. Apply the technical skills required by industrial and governmental organizations to solve mechanical engineering problems at an advanced level.
2. Conduct research that demonstrates advanced mastery of a subfield within mechanical engineering.
3. Communicate scientific ideas effectively in writing and when speaking.

## Requirements for the MS Degree in the field of Mechanical Engineering

The MS degree is a thesis master's degree. For general university requirements, please see [Thesis Master's Degrees \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-thesis-masters-degrees/\)](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-thesis-masters-degrees/). For additional requirements, regulations, and procedures for all graduate programs, please see [All Graduate Students \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/\)](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/). Students pursuing the MS degree in the field of Mechanical Engineering must complete:

- A minimum of 30 credit hours of graduate-level study (graduate semester credit hours, coursework at the 500-level or above) to satisfy degree requirements.

Students seeking the MS degree are expected to complete all the requirements for the degree within two calendar years following entrance into the program. Continuation in the program beyond this time limit will require special approval of the department.

All entering graduate students pursuing a thesis degree program will be subject to a preliminary candidacy evaluation for the highest degree program they intend to pursue. The evaluation will be conducted by the end of the second semester of enrollment in the graduate program in the Mechanical Engineering department.

Each candidate for the MS degree must complete a thesis demonstrating ability in research of a fundamental nature (analytical, numerical, or experimental). It is expected that the research will be of sufficient importance and quality that positive results would lead to publications. A committee consisting of at least three members will conduct the examination. Two, including the committee chair, must be members of the department.

The minimum semester hours of coursework (a one-semester course is usually three semester hours credit) required for the MS degree is tabulated below as a function of the degree held on entrance into the program. Research and thesis hours, as well as seminar hours, do not

count towards these course requirements but do count toward the minimum requirement that a student complete a minimum of 30 total credit hours of graduate-level study (graduate semester credit hours, coursework at the 500-level or above) to satisfy degree requirements. In all cases, a student's specific course of study is formulated in consultation with the departmental advisor (thesis director) and must be approved by the department.

Course requirements for the research degrees vary depending on the extent of individual undergraduate preparation as well as each student's performance in graduate courses and on qualifying examinations. For both the MS and PhD degrees, students must present a thesis that comprises an original contribution to knowledge and defend it in a public oral examination.

As part of their degree requirements, graduate students are expected to provide instructional assistance to the department not to exceed 10 hours per week. The department chair will assign graduate student work at the beginning of each semester.

All graduate students (except students in the [MME degree program \(https://ga.rice.edu/programs-study/departments-programs/engineering/mechanical-engineering/mechanical-engineering-mme/#requirementstext\)](https://ga.rice.edu/programs-study/departments-programs/engineering/mechanical-engineering/mechanical-engineering-mme/#requirementstext)) must attend at least 75 percent of the Mechanical Engineering seminars. For additional information and details, please see the degree requirements on the [Mechanical Engineering website \(http://mech.rice.edu/\)](http://mech.rice.edu/).

The requirements listed in the General Announcements (GA) satisfy the minimum requirements for this degree program. In certain instances, courses (or requirements) not officially listed here may be substituted upon approval of the program's academic advisor or, where applicable, the department or program's Director of Graduate Studies. Course substitutions or any exceptions to the stated official curricular requirements must be approved by the [Office of Graduate and Postdoctoral Studies \(https://graduate.rice.edu/\)](https://graduate.rice.edu/). Students and their academic advisors should identify and clearly document the courses to be taken.

## Summary

Code	Title	Credit Hours
	Total Credit Hours Required for the MS Degree in the field of Mechanical Engineering	30

## Degree Requirements

Code	Title	Credit Hours
	Coursework as Approved by Department <sup>1</sup>	24
	Research Coursework as Approved by Department <sup>1</sup>	6
	Total Credit Hours	30

## Footnotes and Additional Information

<sup>1</sup> A minimum of 30 credit hours at the 500-level or above is required to earn the MS degree. Depending on the student's previously earned undergraduate degree at the time of entrance into the graduate program, additional credit hours of research coursework may be permitted in lieu of a portion of the coursework as approved by the department to reach 30 total credit hours as follows:

Students entering with a BS degree:

- 18 credit hours of coursework
- 12 credit hours of research coursework

Students entering with a 5-year BS degree:

- 12 credit hours of coursework
- 18 credit hours of research coursework

Students entering with a BA degree (or other bachelor's degree):

- 24 credit hours of coursework
- 6 credit hours of research coursework

## Policies for the MS Degree in the field of Mechanical Engineering

### Department of Mechanical Engineering Graduate Program Handbook

The General Announcements (GA) is the official Rice curriculum. As an additional resource for students, the department of Mechanical Engineering publishes a graduate program handbook, which can be found here: [https://gradhandbooks.rice.edu/2024\\_25/Mechanical\\_Engineering\\_Graduate\\_Handbook.pdf](https://gradhandbooks.rice.edu/2024_25/Mechanical_Engineering_Graduate_Handbook.pdf).

### Transfer Credit

For Rice University's policy regarding transfer credit, see Transfer Credit (<https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer>). Some departments and programs have additional restrictions on transfer credit. Requests for transfer credit must be approved for Rice equivalency by the appropriate academic department offering the Rice equivalent course (corresponding to the subject code of the course content) and by the Office of Graduate and Postdoctoral Studies (GPS). Students are encouraged to meet with their academic program's advisor when considering transfer credit possibilities.

### Additional Information

For additional information, please see the Mechanical Engineering website: <https://mech.rice.edu/>.

## Opportunities for the MS Degree in the field of Mechanical Engineering

### Additional Information

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