

DOCTOR OF PHILOSOPHY (PHD) DEGREE IN THE FIELD OF MECHANICAL ENGINEERING

Program Learning Outcomes for the PhD Degree in the field of Mechanical Engineering

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

1. Demonstrate command of advanced topics in mechanical engineering.
2. Apply technical skills and 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 PhD Degree in the field of Mechanical Engineering

For general university requirements, please see [Doctoral Degrees \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-doctoral-degrees/\)](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-doctoral-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 seeking the PhD degree are expected to complete all the requirements for the degree within five 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 PhD degree will be subject to a Qualifying Exam. The Qualifying Exam will be conducted by the end of the third semester of enrollment in the graduate program in the Mechanical Engineering department.

By the end of the ninth semester of enrollment in the graduate program in the Mechanical Engineering department, the student must pass a Candidacy evaluation.

Each candidate for the PhD degree must complete a thesis that constitutes an original contribution to scientific knowledge (analytical, numerical or experimental). It is expected that the research will be of sufficient importance and quality that positive results would lead to publications. On completion of the thesis, each candidate for the PhD degree must pass a final public oral examination. The examination will be conducted by a committee consisting of at least four members. Three, including the committee chair, must be members of the department. One member must be from another department within the university.

The minimum semester hours of coursework (a one-semester course is usually three semester hours credit) required are tabulated below as a function of the degree held on entrance into the program. In all cases, a student's course of study is formulated in consultation with the 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 \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-doctoral-degrees/#requirementstext\)](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-doctoral-degrees/)) must attend at least 75% of the Mechanical Engineering seminars. For 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 PhD Degree in the field of Mechanical Engineering ¹	90

Footnotes and Additional Information

¹ A minimum of 90 credit hours at the 500-level or above is required to earn the PhD degree. These credit hours are earned as a combination of coursework and research. Based on the student's previously earned degree at the time of entrance into the PhD program, the breakdown of coursework and research hours vary to reach 90 total credit hours as follows:

Students entering with an MS degree:

- 18 credit hours of coursework
- 72 credit hours of research coursework

Students entering with a BS degree:

- 36 credit hours of coursework
- 54 credit hours of research coursework

Students entering with a 5-year BS degree:

- 30 credit hours of coursework
- 60 credit hours of research coursework

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

- 42 credit hours of coursework
- 48 credit hours of research coursework

Policies for the PhD 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.

Transfer Credit

For Rice University's policy regarding transfer credit, see [Transfer Credit \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer\)](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 PhD Degree in the field of Mechanical Engineering

Additional Information

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