

MASTER OF MECHANICAL ENGINEERING (MME) DEGREE

Program Learning Outcomes for the MME Degree

Upon completing the MME degree, students will be able to:

1. Demonstrate an advanced command of Mechanical Engineering fieldwork.
2. Communicate scientific ideas effectively in writing and when speaking.

Requirements for the MME Degree

The MME degree is a non-thesis master's degree. For general university requirements, please see Non-Thesis Master's Degrees (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees). For additional requirements, regulations, and procedures for all graduate programs, please see All Graduate Students (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees). Students pursuing the MME degree must complete:

- A minimum of 10 courses (30 credit hours) to satisfy degree requirements.
- A minimum of 30 credit hours of graduate-level study (coursework at the 500-level or above).
- A minimum of 24 credit hours must be taken at Rice University.
- A minimum residency enrollment of one fall or spring semester of part-time graduate study at Rice University.
- A minimum of 18 credit hours from departmental (MECH) course offerings.
- A minimum overall GPA of 2.67 or higher in all Rice coursework.
- A minimum GPA of 3.00 or higher in all Rice coursework that satisfies requirements for the non-thesis master's degree.

The professional master's degree in Mechanical Engineering (MME) is a non-thesis degree program intended for students who have completed a 4-year bachelor's program in engineering and wish to join the workforce as practicing professionals, rather than pursuing a research oriented or academic career. It offers preparation in advanced engineering topics in order to enhance an engineer's technical qualifications and increases competitiveness in the job market.

The MME program is open to students who have shown academic excellence in their undergraduate studies. Students who have a BS or BA degree in any field of engineering or related study may apply, although some may need to fulfill prerequisites or take remedial courses to earn the MME degree. Students may enroll on a full or part-time basis.

Lists of required and suggested courses are available from the department. Students should develop a specific plan of study based on their particular interests and discussions with their advisor.

The courses listed below satisfy the requirements for this degree program. In certain instances, courses not on this official list 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 must be formally applied and entered into

Degree Works by the department or program's Official Certifier (<https://registrar.rice.edu/facstaff/degreeworks/officialcertifier>). Additionally, these must be approved by the Office of Graduate and Postdoctoral Studies. 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 MME Degree		30

Degree Requirements

Code	Title	Credit Hours
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Core Requirements

<i>Select 6 courses from the following:</i>		18
MECH 501	DYNAMICS AND CONTROL OF MECHANICAL SYSTEMS	
	or MECH 508 / NONLINEAR SYSTEMS: ANALYSIS AND CONTROL CAAM 508 / ELEC 508	
MECH 502	VIBRATIONS	
MECH 505	NUMERICAL METHODS FOR ENGINEERS	
MECH 517	FINITE ELEMENT ANALYSIS	
MECH 554 / BIOE 554 / CEVE 554	COMPUTATIONAL FLUID MECHANICS	
MECH 575	INTRODUCTION TO HYDRODYNAMIC STABILITY	
MECH 582	CONVECTIVE HEAT TRANSFER	
MECH 584	MICROSCOPIC THERMODYNAMICS AND TRANSPORT	
MECH 588	DESIGN OF MECHATRONIC SYSTEMS	
	or MECH 598 / INTRODUCTION TO ROBOTICS COMP 598 / ELEC 598	
MECH 594	INTRODUCTION TO AERONAUTICS	
MECH 597	NEUROMUSCULOSKELETAL MODELING AND SIMULATION	

Elective Requirements

<i>Select 4 courses from approved departmental (MECH) course offerings at the 500-level or above.</i> ¹		12
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Total Credit Hours		30
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Footnotes and Additional Information

¹ With approval by the advisor and the department, some of which could be from outside the department. None of the remaining required 12 credit hours can be from Independent-Study (MECH 611 or MECH 612) courses. A minimum of 30 credit hours at the 500-level or above is required to earn the MME degree. Regardless of the student's previously earned undergraduate degree at the time of entrance into the graduate program, no credit hours of research coursework may be permitted in lieu of the required coursework outlined above.

Students entering with a BS degree:

- 30 credit hours of coursework

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

- 30 credit hours of coursework

- more information on this *Undergraduate - Graduate Concurrent Enrollment* opportunity, including specific information on the registration process can be found here (ga.rice.edu/undergraduate-students/academic-opportunities/undergraduate-graduate-concurrent-enrollment).

Additional Information

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

Policies for the MME Degree

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/2019_20/Mechanical_Engineering_Graduate_Handbook.pdf

Transfer Credit

For Rice University's policy regarding transfer credit, see Transfer Credit (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer). Some departments and programs have additional restrictions on transfer credit. 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 MME Degree

Fifth-Year Master's Degree Option for Rice Undergraduate Students

Rice students have an option to pursue the Master of Mechanical Engineering (MME) degree by adding an additional fifth year to their four undergraduate years of science and engineering studies.

Advanced Rice undergraduate students in good academic standing may apply to the MME degree program during their junior or senior year. Upon acceptance, depending on course load, financial aid status, and other variables, they may then start taking some required courses of the master's degree program. A plan of study will need to be approved by the student's undergraduate advisor and the MME program director.

As part of this option and opportunity, Rice undergraduate students:

- must complete the requirements for a bachelor's degree and the master's degree independently of each other (i.e. no course may be counted toward the fulfillment of both degrees).
- should be aware there could be financial aid implications if the conversion of undergraduate coursework to that of graduate level reduces their earned undergraduate credit for any semester below that of full-time status (12 credit hours).