



A. JAMES CLARK  
SCHOOL OF ENGINEERING

**Department of Mechanical Engineering**

**Graduate Handbook**

**2019-2020**

Department of Mechanical Engineering  
A. James Clark School of Engineering  
University of Maryland  
2168 Glenn L. Martin Hall  
College Park, Maryland, 20742

Phone: (301) 314-7058

[www.enme.umd.edu](http://www.enme.umd.edu)  
[megrad.umd.edu](http://megrad.umd.edu)

## DEGREE REQUIREMENTS

### M.S. Program in Reliability Engineering

Two options exist to earn the MS degree in Reliability Engineering:

#### Non-thesis option:

1. Complete 30 credit hours with at least 18 at the 600 level or above.
2. Complete the required 6 credit hours of core courses (see below).
3. Maintain an average grade of B or better.
4. Submit at least one scholarly paper for approval by two faculty members, addressing reliability within his/her field of engineering. The topic must be selected and an advisor located by the second semester of study. The paper can be completed by registering for ENRE648, a special topics independent study with selected advisor and approved through Graduate Committee
5. Complete a set of approved technical elective courses to satisfy the balance of the course requirements (a minimum of 24 credit hours).

#### Thesis option:

1. Complete 24 credit hours with at least 18 at the 600 level or above. This does not include thesis research credits (ENRE 799)
2. Complete the required 6 credit hours of core courses (see below).
3. Maintain an average grade of B or better.
4. Take an additional 6 credit hours of ENRE 799 (thesis research).
5. Write a satisfactory thesis and defend it in an oral examination.
6. Complete a set of approved technical elective courses to satisfy the balance of the course requirements (a minimum of 18 credit hours).

#### Course Requirements

All students seeking graduate degrees in Reliability Engineering must complete the following courses:

1. ENRE 600 Fundamentals of Failure Mechanisms
2. ENRE 602 Reliability Analysis

Non-Thesis students must also complete:

3. ENRE 648 Special Problems in Reliability Engineering

Students may not register for more than a total of six credits of ENRE 648: Special Problems in Reliability Engineering and no more than three credits in a single semester. For each registration of ENRE648, an approved scholarly paper must be submitted to the Graduate Office. Research completed for ENRE648 may not overlap with a student's thesis or dissertation topic. Furthermore, under no circumstances will students be permitted after the completion of the semester in which the credits were taken to convert ENRE648 credit to thesis (ENRE799) or dissertation (ENRE899) credits. In addition, a syllabus (outline of the course of study, the name(s) of text(s) that will be used, and a description of how the grade will be determined) must be written up for this independent study by one (or both) of the faculty. This syllabus needs to be submitted to the ME Graduate Office and be approved by the Graduate Committee.

## **Advisor**

As early as possible, students should identify the faculty member whom they would like to serve as their coursework and research advisor. For research assistants, the faculty providing the financial support is also the advisor. A student's advisor will also serve as chairperson of the student's Thesis Committee (see below).

## **Thesis Requirements**

Students in the M.S. Program must complete a minimum of 6 credits of M.S. Thesis Research (**ENRE 799**) while preparing the M.S. thesis. Thesis research must be carried out under the guidance of an advisor who is a member of the Mechanical Engineering Graduate Faculty. The thesis must be presented formally and defended in an oral examination open to the public, which is conducted upon completion of the thesis.

The members of the thesis examining committee must be nominated at **least six weeks prior to the thesis defense**. Graduate School has further information on deadlines for submission of the [Nomination of Thesis Committee form](#). This form must first be submitted to the ME Graduate Office for approval and then forwarded to the Graduate School in order to nominate the committee. Changes in a thesis committee can be made at any time, with the approval of the student's advisor, the Graduate Director and the Graduate School. In addition to the Graduate School's requirements for the composition of a thesis examining committee, the Department of Mechanical Engineering requires that mechanical thesis committees be comprised of **three regular or associate faculty members of the Graduate Faculty**. Additional members, beyond these three, can be appointed to the thesis committee, including the special nomination of research faculty or outside scientists. **To nominate a Special or Associate Member to serve, the nominee's curriculum vitae must be submitted to the Graduate Office, at least eight weeks prior to the date of the defense.**

The M.S. thesis must be prepared according to the guidelines in the current edition of the University of Maryland Thesis Manual, which may be obtained online from: [https://gradschool.umd.edu/sites/gradschool.umd.edu/files/uploads/DissertationThesis/etd\\_style\\_guide\\_201708.pdf](https://gradschool.umd.edu/sites/gradschool.umd.edu/files/uploads/DissertationThesis/etd_style_guide_201708.pdf)

A copy of the thesis, after the advisor has approved it, must be provided to each member of the examining committee **at least two weeks prior to the date of the examination**.

In addition, one week prior to the examination date, a notice that includes the thesis date, location, title, abstract, and committee members must be sent to the ME Graduate Office ([megrad@umd.edu](mailto:megrad@umd.edu)) inviting faculty and students to the formal thesis presentation. The notice will be sent out via email to departmental listservs as well as posted on the megrad.umd.edu website.

A few days before the examination is scheduled to take place, the **ME Graduate Office** will send the Report of the Examining Committee Form, Electronic Publication Form, the Approved Program Form and the Middle States Accreditation Form to the student's advisor, who will bring these documents to the defense. **Upon passing the examination, the forms are signed by each member of the examining committee and submitted to the ME Graduate Office for forwarding to the Registrar's Office.** An electronic copy of the thesis must be submitted to the Graduate School (see below) and to the ME Graduate Office. Students should also fill out the Department's Exit Information form found at: <http://megrad.umd.edu/graduate-student-exit-information-form/>

## **Graduation Paperwork**

The necessary forms will be completed by the Graduate Office with the assistance of the student and their advisor. The following forms must be completed and submitted prior to graduation:

1. Application for Graduation found online at: [www.testudo.umd.edu](http://www.testudo.umd.edu)
2. If students have transferred from another program into the Mechanical Engineering M.S. program, they must submit a [Transfer of Credit Form](#), available online in order to include previous coursework as part of the Mechanical Engineering Approved Program.
3. [Nomination of Thesis or Dissertation Committee](#) Form must be submitted to the Registrar's Office, 1113 Lee Building after approval by the ME Graduate office. Copies of the form are available online and in the ME Graduate Office.
4. Report of the Examining Committee Form is generated by the Graduate School upon the approval of the Nomination of Thesis Committee form. The Report of the Examining Committee Form must be submitted to the Registrar's Office, 1113 Mitchell Building after approval by the ME Graduate Office.
5. An electronic copy of the thesis must be submitted to the Graduate School online. The paperwork and instructions regarding how to upload the document are found here: [https://gradschool.umd.edu/sites/gradschool.umd.edu/files/uploads/thesis\\_and\\_dissertation\\_electronic\\_publication\\_form.pdf](https://gradschool.umd.edu/sites/gradschool.umd.edu/files/uploads/thesis_and_dissertation_electronic_publication_form.pdf) An electronic copy of the approved thesis should also be submitted to the ME Graduate Office, megrad@umd.edu.

Deadlines for the above forms vary from semester to semester and are posted in on the Graduate School's website at: <https://gradschool.umd.edu/calendar/deadlines>

Failure to submit the forms by the established deadlines results in postponement of the student's graduation to the following semester. During the final semester, students should verify with the Registrar's Office, 1113 Mitchell Bldg, (301)314-8226, that they have met all the requirements for graduation.

## Summary of Requirements and Timeline

First semester	M.S. Plan of Study approved by Advisor and Director of Graduate Studies. Students should fill out their coursework plans electronically. For instructions on how to do this, please see <a href="http://megrad.umd.edu/plan-of-study/">http://megrad.umd.edu/plan-of-study/</a> <a href="#">Request for Inclusion or Transfer of Credits</a> submitted (if transferring any credits into the M.S. program—these credits must be approved on your <i>MS Plan of Study</i> ).
Semester Before Last	<a href="#">Nomination of Thesis Committee Form</a> submitted at least <b>6 weeks</b> before Thesis defense.
Last semester	<ul style="list-style-type: none"> <li>• Register for a minimum of one credit via <a href="#">Testudo</a></li> <li>• Application for Diploma submitted by first week of semester via <a href="#">Testudo</a></li> <li>• M.S. Thesis Defense</li> <li>• Report of Examining Committee Form ME Graduate Office (Provided to advisor)</li> <li>• <a href="#">Approved Program Form</a> submitted to the ME Graduate Office</li> <li>• <a href="#">Electronic Thesis Publication Form</a> submitted to the ME Graduate Office</li> <li>• Electronic copy of thesis submitted to the Graduate School via <a href="#">ETD website</a></li> <li>• Electronic copy of thesis submitted to the <a href="#">ME Graduate Office</a></li> <li>• Exit Information Survey submitted to the <a href="#">ME Graduate Office</a></li> <li>• International Students ISSS <a href="#">Exit Plan</a></li> </ul>

**M.S. students must complete all requirements for their degrees within five (5) years;** this includes any credit transferred from other institutions. Students may apply for an exception for a maximum of two additional years if all classes were taken at the University of Maryland College Park. Final approvals are made by the Graduate School.

### Continuation toward the Ph.D. Program

Students enrolled in the M.S. program with a GPA of 3.5 or above and at least 24 graduate credits have the option to take the Ph.D. qualifying exam during the following semester. This option must be exercised no later than the fourth semester of study, or the semester following the accumulation of 24 or more credits, whichever occurs first.

Qualified M.S. students who wish to take the Ph.D. qualifying examination must notify the ME Graduate Office of their intention prior to the start of the semester in which they plan to take the exam. Students who pass the Ph.D. qualifying examination and meet the admission requirements of the Mechanical Engineering Department will be recommended for direct admission into the Ph.D. program. Such students will qualify to earn an M.S. degree without thesis, upon their advancement to candidacy. Students who anticipate qualifying for transfer or subsequent entry into the Ph.D. program should note that M.S. thesis credits (**ENRE 799**) **do not count toward the Ph.D.** coursework requirement. Students wishing to switch from the M.S. Degree program to the Ph.D. program must in all cases reapply to the Graduate School for admission into the Ph.D. program. Students who are unable to pass the Ph.D. qualifying examination will not be considered for admission into the Ph.D. program.