

# Mechanical Engineering, PhD

College of Engineering

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The Ph.D. degree in Mechanical Engineering provides both advanced instruction and independent research opportunities for students. Graduates are typically employed in research environments in government laboratories and industries, and as university faculty. The Ph.D. degree program is highly individualistic in nature, and the student is expected to make a significant contribution to the reservoir of human knowledge by investigating a significant topic within the domain of mechanical engineering.

## Additional Admission Requirements

- Bachelor of Science degree in Mechanical Engineering with a minimum cumulative GPA of 3.5 or Master of Science degree in Mechanical Engineering or a closely related engineering discipline with a minimum GPA of 3.3
- GRE score

## Program Outcomes

- Graduates of the Ph.D. program will apply their critical thinking skills to invent, analyze, and model complex engineering systems and make novel contributions to the discipline.
- Graduates of the Ph.D. program will demonstrate effective communication skills through project and dissertation work and conference presentations.
- Graduates of the Ph.D. program will perform research or undertake advanced projects in an area of mechanical engineering such as mechanical systems and materials, energy and thermal-fluid sciences, and aerospace and make novel contributions in their respective areas of research.
- Graduates of the Ph.D. program will be active and effective leaders in their professional societies.

## Degree Requirements

Total credit hours: 62 (post baccalaureate)

- Core courses (9 credits): MEEN 601, 643, 716
- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (24 credits): Take 24 credits of additional MEEN 600-899 courses with approval of advisor
- Technical electives (6 credits): Take additional 6 credit hours with approval of advisor
- Seminar (2 credits): Take MEEN 992 two times in two semesters
- Dissertation (18 credits): MEEN 997
- Pass qualifying exam, preliminary exam, dissertation defense

## Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 18 dissertation credits are counted toward the total credit hours requirement for the degree.

## Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

**Preliminary Oral Examination:**

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

**Admission to Candidacy**

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

**Final Oral Examination:**

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

**Submission of Dissertation:**

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.