



## PhD Qualifying Examination

The purpose of the Qualifying Exam is to evaluate students' overall scholastic preparation and to assess:

- understanding of and ability to apply fundamental concepts of the discipline
- capacity for independent thought and creative problem solving
- ability to communicate orally and to respond to questions and comments
- academic potential to engage in independent research and complete a quality PhD program.

Predoctoral students must identify a faculty advisor who agrees to accept them into their research group within the first year of completing their master's degree. Students who have a master's degree must have an advisor prior to being admitted to the program.

In order to be allowed to take the Qualifying Examination, students must have a grade point average (GPA) of at least 3.40/4.00. In addition, they must have an MSA degree or its equivalent; the latter is subject to approval by the Graduate Committee. Students must also have a faculty member accept them into their research program. The faculty member must agree to be their thesis advisor, to supervise their PhD research, and to chair their Qualifying Exam Committee.

Qualifying Examinations are held twice a year, during the Spring and Autumn Quarters.

The Committee will be composed of three core faculty from students' research fields and one non-core faculty from outside their research field. One faculty member may be from outside the Aeronautics and Astronautics Department. Once the faculty members have agreed to serve on the Committee, their names should be provided to the Manager of Graduate Programs.

The Committee will assign students one or more journal articles, requiring additional literature review. These are not to include tutorial or review articles. In addition, it is recommended that no one on the students' Committees shall have authored, co-authored, or otherwise been involved with the research reported in the article(s) so that students will be able to more freely and completely critique the work.

*Students are expected to review the article(s) and prepare their reports independently.*

Within four weeks, students will submit a report on the article to the Committee for assessment and approval. This report should include a summary of the article and a discussion addressing the relevance and impact of the article's findings, placing the research into a broader context, commenting on future directions and any appropriate criticism, and discussing any other aspects suggested by the Committee. While there is no set page limit, it is expected that the report will be approximately 7 -10 pages in length.



The Committee Chair will notify students of the Committee's decision within two weeks of submission. The Committee may provide a critique and require that students submit a revision within two weeks from that time. If the revised report is deemed unsatisfactory by the Committee, students are not permitted to proceed further. If the reports are approved, students will present a brief (approximately 20 minutes) oral presentation of the report to the Committee. The presentation will follow a prescribed template that is consistent with the expected written report. This oral presentation is open to all faculty. A question and answer session follows the presentation wherein each Committee member asks a line of questions. Other attending faculty may also ask questions. The questions are not restricted to discussion of the assigned journal article and can cover any topic of fundamental engineering concepts. Questions covering fundamental engineering concepts are expected to represent the majority of the questions

Students will be evaluated in equal part on these three aspects:

- Written report and oral presentation,
- Oral responses to questions after the presentation,
- Oral responses to questions on fundamental engineering concepts.

Students who pass the Qualifying Exam become eligible to pursue the PhD degree program in the Department.