AEROSPACE ENGINEERING

Degree Requirements

Master of Engineering (M.Eng.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-700 Professional Degree Policies (https://gradschool.psu.edu/graduate-education-policies/).

Core Requirements

1. Basic field theory. Complete three courses for 9 credits, one from a prescribed list in each of the following categories: fluid dynamics, solid mechanics, and dynamics & control.
2. Applied mathematics. Complete one 3-credit, 500-level course from a prescribed list.
3. Teaching assistants and teaching aides who have classroom or laboratory instructional responsibilities must satisfactorily complete ENGR 888. Those with responsibilities limited to grading, holding office hours, and offering problem sessions must take ENGR 888 or a grading seminar.

The M.Eng. degree is a non-thesis professional master's degree. A total of 32 credits at the 400, 500, and 800 level is required, including courses in the core requirements. Students must take two credits of AERSP 590 Colloquium. A minimum of 18 credits must be taken at the 500 level, in addition to the two credits in AERSP 590. At least 18 credits in Aerospace Engineering courses are required in addition to AERSP 590. Students may count a maximum of 9 credits of 400-level course work toward the degree. Each student must either take the capstone course EDSGN 558 or complete a capstone project supervised by a member of the Graduate Faculty, completed while enrolled in AERSP 596. The capstone project requires students to work individually or within a group on an aspect of aerospace engineering of their choosing. The project should demonstrate the ability of the student to integrate and apply concepts and techniques learned in the program courses.

Master of Science (M.S.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (https://gradschool.psu.edu/graduate-education-policies/)

Core Requirements

1. Basic field theory. Complete three courses for 9 credits, one from a prescribed list in each of the following categories: fluid dynamics, solid mechanics, and dynamics & control.
2. Applied mathematics. Complete one 3-credit, 500-level course from a prescribed list.
3. Teaching assistants and teaching aides who have classroom or laboratory instructional responsibilities must satisfactorily complete ENGR 888. Those with responsibilities limited to grading, holding office hours, and offering problem sessions must take ENGR 888 or a grading seminar.

A total of 32 credits at the 400, 500, 600, and 800 level is required, including courses in the core requirements, with least 18 credits at the 500 and 600 level, combined. Fourteen credits must be in Aerospace Engineering courses, with at the least 8 credits at the 500 level. Students must take two credits of AERSP 590. Students may count a maximum of 6 credits of 400-level course work toward the degree. Six credits of thesis research (AERSP 600 or AERSP 610) are also required. A completed M.S. thesis and its public presentation is required for graduation. The thesis must be accepted by the student's advisers and/or committee members, the head of the graduate program, and the Graduate School.

Doctor of Philosophy (Ph.D.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (https://gradschool.psu.edu/graduate-education-policies/)

Core Requirements

1. Basic field theory. Complete three courses for 9 credits, one from a prescribed list in each of the following categories: fluid dynamics, solid mechanics, and dynamics & control.
2. Applied mathematics. Complete one 3-credit, 500-level course from a prescribed list.
3. Teaching assistants and teaching aides who have classroom or laboratory instructional responsibilities must satisfactorily complete ENGR 888. Those with responsibilities limited to grading, holding office hours, and offering problem sessions must take ENGR 888 or a grading seminar.

There is no foreign language requirement for the Ph.D. degree; however, students must demonstrate proficiency in reading, writing, and speaking English through an examination administered by the department. This must be completed to satisfy the Graduate Council requirement before taking the comprehensive exam. The student's Ph.D. committee decides which, if any, courses are required in addition to those specified in the core requirements; this typically involves 24 course credits beyond the M.S. degree. Ph.D. students must also demonstrate evidence of experimental experience.

Over the course of a Ph.D. program, the department and Ph.D. committee administer three examinations: The qualifying examination is given as a preliminary aptitude test before the end of the second semester following admission to the program. A comprehensive examination, which covers the major and minor fields of study, is administered after the student has substantially completed the required course work. The final oral examination, which is related mainly to the dissertation, is given after the candidate has satisfied all other degree requirements. All Ph.D. students must maintain continuous registration until the dissertation is approved. A completed Ph.D. dissertation and its public defense (the Final Oral Examination) are required for graduation. The dissertation must be accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School.