

Aerospace Engineering Fundamentals Qualifying Examination (AFQE) Policy and Process

Aerospace Engineering Department
Texas A&M University

This document outlines the policy and process for administering the Aerospace Engineering Fundamental Qualifying Examination (AFQE) for Ph.D. students in Aerospace Engineering at Texas A&M University.

- I. The general process for determining if a student is qualified to continue in the Ph.D. program is as follows.
 1. The AFQE is an examination over aerospace engineering fundamentals in the general, broad areas of aerodynamics and fluid mechanics, dynamics and control and solid/continuum mechanics. While it is suggested that students take AERO 601, AERO 603/MEMA 602 and/or AERO 622 to prepare for the AFQE, it must be emphasized that the AFQE is not intended to be another final examination or re-test over the topics covered by the suggested course list; nor is the AFQE restricted to topics covered by these courses alone. The level of the examination is to span from basic undergraduate topics in engineering science, mechanics and mathematics to master's level topics in these areas (such as those covered by the three courses listed above). It is implied that each student has a mastery of basic mathematics as described in the mathematics topics list that is attached to the topics list for each discipline area, and mathematics topics as are required in the three courses AERO 601, 603 and 622.
 2. Each of the three discipline areas will be covered in a separate written examination that will be closed book and approximately 2-3 hours in duration. The three part written examination will be created, administered and graded by faculty representatives from each exam discipline area (the "Exam Committee").
 3. The student will take the written AFQE exam two semesters after he/she begins the Ph.D. degree requirements (or three semesters if beginning in January). The examination cannot be postponed, but may be taken early.
 4. To be eligible to take the AFQE exam, the student must be in good academic standing during the semester in which the AFQE is taken.
 5. It is the responsibility of each doctoral student to register for and take the AFQE at the proper time. No later than the 12th class day of the spring semester during which the student is required to take the AFQE, the student must indicate their intention to take the AFQE by submitting the "AFQE Registration and Eligibility Form" to the Graduate Advisors Office. The form must be completed and signed by the student, and then signed by the student's committee chairman.
 6. The Graduate Program Office will announce details of the AFQE examination, such as subjects, format and dates approximately four months prior to the scheduled week of the written examinations (which are typically held during the third week of May). The committee will also make available to students registered for the AFQE a set of suggested review problems and/or the previous year's examination questions.

7. Students must pass each written examination. Further, students are expected to show exemplary performance on the exam in their area of specialization and/or research (aerofluids, structures/materials or dynamics and control).
8. The passing grade on the written portions of the AFQE examination will be determined by the Departmental Graduate Committee in consultation with the Exam Committee. The Exam Committee will provide both a numerical score as well as a brief narrative discussing the performance, strengths and weaknesses of each student on each exam.
9. The final decision on passing the AFQE and obtaining approval to continue in the departmental Ph.D. program will be made by the Department Head with recommendation from the Departmental Graduate Committee. The decision and assessment will be based on integrative consideration of three factors:
 - AFQE written exams,
 - Performance on coursework beyond the BS, and
 - Input from the student's faculty advisor.
10. If the student fails the written AFQE exam, he/she will have one opportunity to retake the exam. This second exam will be administered in the following manner:
 - Will be taken within 3 months of the first exam,
 - The exam is to include all three subject areas,
 - The exam is to be a written exam, and
 - The exam is to be administered by the same Exam Committee that administered the first exam.
11. A student who does not satisfactorily complete the AFQE examination process as described above will not be permitted to continue in the Ph.D. program in Aerospace Engineering beyond the spring/summer in which the AFQE exam was taken. Students will have two options:
 - transfer out of the department, or,
 - change their degree program to a master's level program in Aerospace Engineering (assuming they have not already earned a masters degree from the department). This change to a masters program will require approval by OGS and must be completed by the 1st class day of the fall semester following failure of the AFQE process. Students who complete a masters program after not satisfactorily completing the AFQE will not be considered for a doctoral program in Aerospace Engineering.

II. Special situations:

1. If the student enters the Ph.D. program without having earned a masters degree, the student will normally take the AFQE one year (two semesters) after declaring himself/herself as a Ph.D. student, but under no circumstances later than two years after making the Ph.D. declaration.
2. A student who transfers from another department will be required to complete the usual AFQE process, even if he/she has passed that department's qualifying examination.