METU MECHANICAL ENGINEERING DEPARTMENT
PHD QUALIFIER EXAM

The Ph.D. Qualifier exam is implemented in the three stages 1) Written Exam, 2) Oral Exam, and 3) Ph.D. Qualifier Jury Evaluation to determine the student’s skill in the scientific area, level of knowledge, competency in synthesis, success level in accessing information, and ability to perform independent research. The exams are conducted in English.

The Ph.D. Qualifying Exam is graded out of 400 points, with the written and oral parts worth 300 points and 100 points, respectively.

a) Written Exam

Ph.D. Qualifier Written Exam has two parts. Each part of this exam is evaluated out of 150 points.

(i) First Part of the Written Exam

The date of the First Part of the Written Exam is set and announced by the Department Ph.D. Qualifying Committee. The First Part of the Written Exam is implemented by the Ph.D. Qualifying Exam Juries in written form with closed books and notes. Each student must take the exam in four areas, and answer one of the two questions in each of these four areas.

The mathematics area is compulsory for all students and consists of content from "ME 210 Applied Mathematics for Mechanical Engineers" and “ME 521 Analytical Methods in Engineering I”.

The student chooses the remaining three areas from nine basic mechanical engineering areas (3 major subjects). These mechanical engineering areas and their content are grouped under Mechanics and Thermo-fluids Subjects as follows:

Mechanics

2. Dynamics: “ME 208 Dynamics”;
4. Theory of Machines: “ME 301 Theory of Machines I” and “ME 302 Theory of Machines II”;

6. Production Engineering: “ME 303 Manufacturing Engineering”;

Thermofluids

7. Thermodynamics: “ME 203 Thermodynamics I” and “ME 204 Thermodynamics II”;

(ii) Second Part of the Written Exam

The date of the Second Part of the Written Exam is set and announced by the Department Ph.D. Qualifying Committee. The Second Part of the Written Exam is implemented by the Ph.D. Qualifying Exam Jury, and is used to evaluate students’ level of knowledge, ability, skill and tendency for research in the related scientific area.

Students are required to answer one of the two questions in four courses, one of which is “ME 540 Analytical Methods in Engineering II” and the other three are the pool courses related to the students’ Ph.D. thesis topic that the students should take during their graduate studies (even if they might not have taken these courses during their graduate studies) as follows:

Mechanics: “ME 502 Advanced Dynamics”, “ME 511 Modern Control”, “ME 526 Vibration of Continuous Systems with Computational Methods”, “ME 541 Plasticity and Computer Aided Metal Forming”, “ME 543 Theory of Elasticity” and “ME 547 Introduction to Continuum Mechanics”;


Ph.D. students, who are studying in an interdisciplinary area may choose two topics from their major area and one topic from their minor area, instead of choosing three topics from their major area, by the proposal of their supervisor subject to the approval of the Department Ph.D. Qualifying Committee.
Each student must meet the following requirements to be eligible for the oral exam: 1) score at least 75 points out of 150 from the First Part of the Written Exam; 2) score at least 75 points out of 150 from the Second Part of the Written Exam; 3) the sum of the scores from the First and Second parts of the Written Exam must be at least 165 points out of 300.

b) Oral Exam

The oral exam is given to eligible students at the date, time and location announced by the Ph.D. Qualifying Committee. In the oral exam, questions can assess the students’ ability to access information and follow scientific publications related to their thesis topic, and follow-up on questions on the written exam. At the end of the oral exam, each member of the Ph.D. Qualifying Jury evaluates the student’s performance out of 20 points and report their grades to the Chair of the Ph.D. Qualifying Jury. The sum of the grades given by each jury member out of 20 points make up the students’ Oral Exam grade.

Students who score at least 50 points out of 100 in the oral exam and 240 points out of 400 on the overall exam are eligible to be evaluated by the Ph.D. Qualifying Exam Jury.

c) Evaluation of the Ph.D. Qualifier Exam Jury

The success of the eligible students is evaluated by the PhD Qualifying Exam Jury by simple majority.