DOCTORAL QUALIFYING EXAMINATION
Department of Mechanical Engineering
Columbia University

EXAM FORMAT: The Qualifying Exam consists of a written test covering a number of areas of Mechanical Engineering.

Core subject areas are defined as follows: (i) Fluids, (ii) Thermo, (iii) Elasticity, (iv) Control, (v) Dynamics, (vi) Heat Transfer


The Exam will contain 4 questions from each subject area above. Students can attempt to answer a total of 12 questions, with at most 4 of those questions coming from the Applied Areas. The maximum time allowed for the Exam will be 9 hours.

Note that the department does not test Mathematics as a separate component of the exam. Instead, knowledge of mathematics is integrated and tested within the engineering subject tests. Since all doctoral students are expected to take courses in APMA/STAT/SIEO/MATH, you will be required to apply knowledge from such areas as: Ordinary Differential Equations, Partial Differential Equations, Linear Algebra, Complex Variables, Numerical Analysis, Advanced Calculus, Integral Transforms, Statistics, etc.

Consult with your advisor or other faculty members to determine what courses are available that can help you prepare for the exam.

EXAM DATE: The Doctoral Qualifying Examination in Mechanical Engineering is offered annually in May on the day after university commencement.

WHO MUST TAKE THE EXAM: The Exam must be taken no later than first time it is offered after you have spent 2 semesters in the graduate program as a MS/PhD or a PhD student.

WHO CAN TAKE THE EXAM: To be eligible to take the examination, you must be:

- A regular graduate student in the department for at least two semesters, prior to being admitted to the examination.
- Have a minimum grade point average of 3.2 / 4.0 in all graduate courses taken beyond the Bachelor's degree.

Exceptions to the above rules are made only under unusual circumstances. Except in cases of medically certified illness or an unforeseeable emergency, the student should petition in writing to the Department Graduate Committee during the Fall semester before the examination and no later than one month prior to the examination.
**SIGN UP:** Anyone intending to take the exam should sign up in the Mechanical Engineering Department office by April 1.

**COPIES OF OLD EXAMS TO LOOK AT:** A file containing copies of previous written qualifying examinations is available from the Administrative Assistant. You can copy these exams. PDF copies are also available.

**NOTE:** To account for the exam structure/content modifications, supplemental study materials will be available in addition to past exams in order to help you prepare.

**GRADING & ASSESSMENT:** The results of the Exam are taken into consideration to determine a Pass or Fail grade. This decision is made by ALL faculty in the Department. No number grade is announced.

If you fail the examination, the Department will indicate whether you will be allowed to take the qualifying examination the next time it is offered. If you are allowed to take it a second time, the Department may either encourage you to do so or advise against it. In no case, are you allowed to take the examination more than twice.