

The Ph.D. Qualifying Examination in Physics

Policy approved by the faculty on 3 May 2004

The purpose of the qualifying exam is to decide whether students have the grasp of basic physics that is needed for successful completion of a Ph. D. thesis. It is not intended to be a comprehensive physics exam. Its level is advanced undergraduate (4000/5000), and it has written and oral components. The written part covers mechanics, quantum mechanics, and E&M. Although the specific content will be determined by the exam committee, a typical content may, for example, consist of: problems in Lagrangian and Hamiltonian mechanics; boundary-value problems in E&M; problems in 3-dimensional quantum mechanics; and angular momentum problems in quantum mechanics. The point here is not this specific content, but rather that there is a well-defined content covering only the core physics that all students take during their first year. The oral exam is more wide-ranging; it can cover any topic in physics or astronomy. Its purpose is to identify strengths and weaknesses in students' background and to assess students' ability to think like scientists and on their feet.

The written exam is offered early each fall semester, and the oral exam is offered during the ensuing few weeks. Students are allowed two attempts to pass each part, timed as follows.

0. At entry. This attempt is "free," not counting against the two allowed attempts, but the exam can be passed at this time.
1. One year after entry.
2. The following January, a year and a semester after entry.

Notes:

- For students who enter the program in January, the zeroth attempt takes place the following fall semester, and the clock starts there.
- The zeroth and first attempts may not be made in January. The January offering is available only to students who are making a second attempt.
- Students are not required to take both the written and the oral part on the first attempt. However, both parts must be passed within a year and a semester after entry. Therefore, a student who takes only one part at the first attempt and passes it may take the other part for the first time the following January and must pass it at that time.
- In order to be eligible to take the qualifier at any of the three attempts, students must sign below, obtain the signature of their advisers, and submit the form to the chair of the Exam Committee by the appropriate deadline.

Students whose highest goal is the M. S. are not required to take the qualifier. If, after receiving the M. S., a student decides to enter the Ph. D. program, he or she will be treated in the same way as a student who enters with an M. S. obtained elsewhere: the first required attempt is a year after entry. Students with the M. S. who are especially well prepared are strongly encouraged to take the free attempt at entry.

We certify that we have read and that we understand the above rules pertaining to the Ph.D. qualifying exam in physics.

Student: _____ Adviser: _____

Date signed: _____ Date signed: _____

In (month, year): _____, I propose to take (check either or both):

the written part _____

the oral part _____

This is my attempt number (0, 1, or 2)

On the written part: _____

On the oral part: _____