

## Information on the UConn Physics Department Preliminary Examinations

As part of the PhD degree in Physics at UConn, students are required to pass the Preliminary Examination, which has both written and oral exam components. These exams are intended to examine the student on a broad foundation of physics knowledge. The written exams concentrate on the four core subjects of classical mechanics, electrodynamics, quantum mechanics and statistical mechanics. The oral exam also focuses on applications of these subjects to aspects of modern physics. The rules governing the exams are as follows:

- 1) There will be two Written Preliminary Exams, each of 6 hours duration, consisting of the following:
  - (a) Classical Physics: Electrodynamics (at the level of PHYS 306)  
Mechanics (at the level of PHYS 318)
  - (b) Quantum Physics: Quantum Mechanics (at the level of PHYS 322 and 323)  
Statistical Mechanics (at the level of PHYS 324)
- 2) Both exams will be given twice a year, as soon as is feasible before the beginning of each semester.
- 3) Students are required to pass both written exams prior to the beginning of their sixth semester in the PhD program. Students are strongly encouraged to take the exams as soon as is consistent with their background in the material covered; there is to be no penalty if a student fails an exam in an early attempt.
- 4) The written exams, together with the solutions that will be used for grading, will be prepared by a Preliminary Examination Committee, consisting of three regular members and overseen by one chairperson. The Preliminary Examination Committee will grade the written exams and will report these grades to the Faculty in a general faculty meeting for ratification. The Preliminary Examination Committee will be responsible for ensuring fairness and uniformity of the exams.
- 5) After having passed the written exams, the student is admitted to an oral exam, which will examine the student in Modern Physics (at the level of PHYS 327 -- Modern Physics). The oral exam should be held as soon as possible, and at most within 1 year from the time the student passes the written preliminary exams. The intent of the oral examination is for the student to demonstrate a comprehensive mastery of the subject matter of Modern Physics. The oral examination will be conducted by an Oral Examination Committee consisting of the student's Advisory Committee and two other faculty members to be selected by the Preliminary Examination Committee. The recommended format for the oral exam will be for the student to make a brief (20 minutes) presentation on some aspect of modern physics (the topic to be chosen in consultation with the Oral Exam Committee), followed by an oral examination of basic physics concepts and broader contextual questions related to the student's presentation.
- 6) Students who have not passed all the written exams but have completed all allowed attempts at them cannot be admitted to the oral by vote of the general prelim faculty meeting. By their request or that of their major advisor, their case can be referred to a separate appeals committee to be chosen by the Head of the Department with no overlap of original prelim committee members or the student's advisory committee. This committee will study the case and make a recommendation to the entire faculty for a vote at a later date.