Graduate General Examination Rules

2 New “Rules and Procedures for Ph.D. Students”, Sect. A. General Ph.D. Examination

The Department of Physics approved the following revision of the Graduate General Examination on 14 December 2016. The Physics Graduate Committee approved this version (minor/technical revisions) on 19 September 2017.

The Graduate Committee unanimously proposed the following revision of the Graduate General Examination. It summarizes extensive deliberations based on discussions over several years and Departmental Retreats.

Preamble  It is the purpose of the General Examination to probe the student’s knowledge in core areas of Physics. Currently, they are Classical Mechanics, Classical Electrodynamics, Quantum Mechanics, Statistical Mechanics. The choice of problems is to be such that any student with a thorough knowledge of the subject matter covered by these areas can be expected to do well. Passing these examinations is required for the student to become a candidate for the Ph.D. degree.

Eligibility  Any graduate student is eligible for the General Examination.

The Examination  The examinations are administered by the Examination Committee. The Examination Committee consists of three members of the Physics Department’s full-time faculty, including the two lecturers of those courses listed below which are offered in that semester. They are appointed by the Director of Graduate Studies; the Chair of the Committee is from the Graduate Committee, but the remaining members need not be members of the Graduate Committee. The Examination Committee is responsible for all aspects of organizing, overseeing, and grading the examinations; it reports to the Graduate Committee. The Examination Committee may solicit the help of other faculty members; however, the final responsibility rests with this Committee. The General Examination consist of four independently administered and graded Parts (called “exams” or “Parts” in the following):

1. Advanced Mechanics (corresponding to course PHYS 6110);
2. Classical Electrodynamics and Field Theory (corresponding to course PHYS 6210);
3. Quantum Mechanics (corresponding to course PHYS 6220);
4. Statistical Mechanics (corresponding to course PHYS 6310).

Procedures for Each Part of the Examination  Each Part covers the depth and breadth of the subject area, and consists of the final exam of the corresponding lecture (for Quantum Mechanics, only of PHYS 6220: Quantum Mechanics I). The student does not have to be enrolled in the course. For each problem, the maximum obtainable number of points must be specified. If applicable, this number should be broken down according to the parts of the particular problem. Immediately upon completion, the student receives a complete copy of the solutions of the problems. The exam documentation consists of the originals of the graded exam and the solutions.
Deciding the Outcome of Each Part  The course lecturer provides the exam documentation to the Examination Committee. The lecturer may also provide the midterm exams if they speak in the student’s favor. The Examination Committee votes by simple majority to recommend whether the student passes. Within one week of the exam, the Examination Committee informs the Graduate Committee of its recommendation. In general, the Graduate Committee must follow the recommendations of the Examination Committee unless it finds fault with some organizational or procedural aspect. In such a case, the Graduate Committee must seek to resolve the matter in consultation with the student. In doing so, it must act in the best interest of the student. In any case, to overrule the decision of the Examination Committee, a two-thirds majority of the Graduate Committee is required. The outcome of the exam of that particular Part becomes final after the decision of the Graduate Committee. The student is informed of the Committee’s decision and given photocopies of the graded examination materials (if these have not already been provided by the lecturer). The student may appeal the decision to the Director of Graduate Studies within one week.

Retake Exam  A student who fails a Part may take a “Retake Exam” at least three weeks after the Committee’s decision but not later than the last day of the following March for Fall courses, or not later than the last day of the following October for Spring courses. In extraordinary circumstances, the Committee may agree with the student on different arrangements. The date of the Retake Exam is decided by the Examination Committee, in consultation with the student. The Retake Exam consists of one written exam on the aggregate material of the corresponding lecture, for all students who failed concurrently. The Examination Committee poses the exam. Otherwise, the “Procedures for Each Part of the Examination” and “Deciding the Outcome of Each Part” are applied as above. The process is completed within one week of the Retake Exam.

Passing the General Examination  A student who has failed the Retake Exam of one or more Parts has failed the General Examination. A student who has passed each Part has automatically passed the General Examination. The student must have successfully passed all Parts of the General Examination upon completion of the second year of graduate studies.

Information of Faculty  At the next regular or special Department Meeting, the Director of Graduate Studies informs the whole faculty of the Committee’s decisions on each part and Retake Exams, and on students who passed or failed the General Examination. Any full-time faculty member will be given copies of the examination documentation upon request.

Masters Students  While the General Examination is irrelevant for the MS programme, the Final Exams of MS students are graded by the Examination Committee as if they were Part of the General Examination. An MS student who fails a Part may choose to sit a Retake Exam. The performance of an MS student in the General Examination has no consequences for the student, unless the student is admitted to the Physics PhD programme. Then, all such results are automatically counted as trials, and outstanding Retakes are scheduled at the earliest opportunity.

Grievances  At any stage of the process, the student may address any complaints, in writing, to the Director of Graduate Studies. If the Graduate Committee’s answer is not to the student’s satisfaction, the student may appeal at any stage in writing to the Department Chair who will bring it up at the next Faculty Meeting. At the Departmental level, that Meeting’s decisions are final; they must be recorded.