Graduate Student Policies

Physics Department, New Mexico Tech

29 August 2006

1. Preliminary Examination

A. The purpose of the preliminary examination is to test the student's knowledge of fundamental physics. The examination will consist of questions in four areas of undergraduate physics:

a. Mechanics and Thermodynamics
b. E&M and Optics
c. Atomic and Nuclear / Quantum
d. Relativity, Mathematical Physics and Miscellaneous

B. Questions will be chosen by a committee of several faculty members, who will work the problems and perfect them.

C. The examination will be given once each year at the beginning of the spring semester. The examination must be taken by all students who have not previously passed it. Students entering in the spring semester are also required to take the exam, and will be notified of this when they are accepted for admission. The Department may waive the exam once for students who need substantial remedial work (e.g. for students changing majors).

D. Students are required to score at least 40% on the preliminary examination to be eligible for a graduate degree. Students who wish to do Ph.D. work are expected to score at a higher level. Students who pass the exam but do poorly on one or more sections will be required to make up their deficiency in a manner specified by their advisory committee.

E. Students may take the exam no more than twice. Petitions to retake the exam beyond this point will be considered in exceptional circumstances. Failure to pass the preliminary exam after two attempts will result in the student being dropped from regular graduate status after the current semester.

2. Graduate Project Requirement

A. The intent of the Graduate Project is to involve the beginning graduate student in a modest research project and to provide the faculty a means of assessing a student's ability to work independently early in the graduate student's tenure. The Graduate Project requirement must be satisfied for all graduate degrees.

B. The Department Chairperson appoints a Graduate Project Coordinator annually as part of the teaching assignment process. The Coordinator is responsible for collecting project suggestions from the faculty, presenting them to the new students, monitoring the student's progress at the middle and end of the first semester, and submitting a grade in collaboration with the faculty

member who sponsors the project. Near the end of the second semester the Coordinator organizes a meeting in which the students present short oral reports of their Graduate Project, reviews a written report after its approval by the sponsoring faculty member, and submits a grade to the Registrar.

C. New students are required to complete PHYS 501 (1 credit hour) in their first semester and then PHYS 502 (1 credit hour) in their second semester unless they have completed a Master's thesis or appropriate graduate level project as determined by the student's graduate committee.

D. The Graduate Project may consist of preliminary work for a current or future research project, which could include data analysis, a literature survey, software development, research equipment design and/or construction, or theoretical analysis. The Graduate Project may also consist of design and/or development of equipment to be used for teaching purposes, or any other project that fulfills the intent of the Graduate Project Coordinator.

E. PHYS 501 and 502 are administered as two one-credit per semester courses by the Graduate Project Coordinator. PHYS 501 and 502 may not be taken simultaneously. They are graded on an S/U basis. As with any other course, grades of "Incomplete" are awarded only in exceptional circumstances.

3. Admission to Ph.D. Candidacy

Admission to Ph.D. Candidacy is a two-step process.

A. First, students wishing to pursue a Ph.D. degree must apply for candidacy by written petition to the Chairperson of the Physics Department within one year of finishing all required courses except for research. The Department Faculty will then evaluate the student's readiness and ability to do Ph.D. level research, based on the following considerations:

a. The student's performance on the preliminary exam, expected to be at the 60% level or above.

b. The student's performance in graduate course work.

c. Ability to do independent research.

The student's ability to do independent research will normally be judged by his or her performance in Master's degree work or the equivalent, such as the Graduate Project described in Section 2.

The department will take one of three actions on the petition:

a. Approve the petition,

b. Conditionally approve the petition subject to successful completion of specified requirements,

c. Disapprove the petition.

Students failing to win approval will be allowed to complete a Master's degree, subject to the requirements of that program.

B. The second step for admission to Ph.D. candidacy is the candidacy examination. The candidacy examination is taken after completion of most or all of the student's formal course work, and after work on a thesis topic has begun. The examination consists of two parts:

a. A formal presentation of a dissertation topic (oral),

b. Testing of the student's knowledge and ability in his or her area of specialization and in related areas. The test may be written or oral at the discretion of the student's committee.

The examination must be taken at least one year before completion of the student's dissertation. The exam will be administered by a faculty committee which includes but is not limited to the candidate's Ph.D. advisory committee.

4. Advisory Committee

A. Within 6 months of beginning the Master's or Ph.D. program each student is required to form an Advisory Committee, in consultation with his or her faculty advisor.

B. The advisory committee consists of at least three faculty members for Master's students and at least four faculty members for a Ph.D. student. At least one member of Ph.D. committees must come from outside the Physics Department. Non-faculty scholars from other divisions within Tech or from separate organizations (such as NRAO) are encouraged as committee members where appropriate. The head of the committee is customarily the student's advisor.

5. Progress of Graduate Students

A. The department faculty shall evaluate the progress of each graduate student on an annual basis. The purpose of this evaluation is 1) to ensure that the student has formed an advisory committee and 2) to check that the student is making satisfactory progress toward a degree.