



The College of _____
WILLIAM & MARY

**Department of Physics - Graduate Curriculum and Examination
Procedures**

Supplementary to General College Requirements - November, 2001

Curriculum

All candidates for graduate degrees must successfully complete a program of courses approved by the department. This requirement is satisfied if the candidate completes either the usual programs described below or one which has been explicitly approved by the Departmental Graduate Studies Committee.

Usual Program for the M. S. and M. A.

1st semester: 601, 603, 621
2nd semester: 610, 622, 630

In addition, the candidate must register for 650 (Colloquium) for at least one semester. The student must also complete enough additional courses, chosen with the approval of his adviser, to satisfy the general degree requirements of the College (i.e., a total of 24 credits plus thesis for the M. A., or a total of 32 credits for the M. S.). The average grade for all courses taken for graduate credit must be at least B.

The student may, in some cases, elect to complete the requirements for the Masters degree in three semesters or (perhaps) 12 months by taking research credits in lieu of course work during the summer and/or the third semester.

Usual Program for the Ph. D.

The first and second semester courses are usually the same as those for M. S. and M. A. candidates. For the remaining semesters:

3rd semester: 611, 721, specialty course
4th and subsequent semesters: 702, specialty courses

It is recommended that students take at least two specialty courses in an area of physics other than the one in which the student's dissertation research will be performed.

If a Ph. D. candidate receives a grade of C in any of the non-specialty courses, he/she must either repeat it or demonstrate to the course instructor or to a special

committee appointed by the Departmental Graduate Studies Committee a knowledge of the subject matter equivalent to a B grade. The instructor will inform the Departmental Graduate Studies Committee in writing of the student involved and will, in due course, recommend final disposition to the Departmental Graduate Studies Committee. Students should complete any make-up requirements as soon as possible.

Teaching Experience

Teaching is an integral part of the educational process for those who seek an advanced degree and therefore the following regulations have been adopted for resident students: M. S. and M.A. candidates will be assigned some teaching duties for at least one semester. Ph. D. candidates will be assigned some teaching duties for at least two semesters. Masters candidates are expected to register for 1 semester of Physics 651/652 Teaching Physics in conjunction with their teaching assignment. Ph. D. candidates must complete 2 semesters of Physics 651/652. The grade for this course is based on their performance of their teaching duties.

Proficiency in English

Students accepted to the Physics Graduate Program for whom English is not the primary language are required to take a course or enroll in a program in conversational English during their first semester in residence. This requirement may be waived by the Graduate Study Committee if the student demonstrates a fluency in English sufficient to be easily understandable by the undergraduate students in any teaching role to which he/she might be assigned.

Qualifying Examination

The full-time student with the usual undergraduate preparation must take the qualifying examination within one calendar year after he/she begins graduate study. The examination is given just before the beginning of both the fall and the spring semesters.

The qualifying examination consists of four half-day written examinations. The examination deals with undergraduate material, with the contents of the first year graduate courses, and with material that a first-year graduate student should have obtained from seminars, colloquia, and journals. The results of the written examination are considered together with the candidate's course grades, recommendations from the faculty, and all other aspects of the candidate's academic record. The possible results are: fail, pass sufficient for the M. A. or M. S. program, or pass sufficient for the Ph. D. program.

The following guidelines have been adopted by the physics faculty:

(a) Candidates are normally allowed two attempts to pass the qualifying examination. Further attempts may be allowed by the Departmental Graduate Studies Committee on the basis of a petition by the candidate.

(b) Entering graduate students without a master's degree may, with the consent of their advisors, take the qualifying examination without prejudice when they arrive or after they have been in residence for one semester. Those entering students who already have an M. S. or an M. A. degree in physics are normally required to take the examination on arrival.

(c) Any graduate student whose program is interrupted to the extent that no courses have been taken for a period of two years or more, may, without petition to the Departmental Graduate Studies Committee, take the qualifying examination three times, provided one attempt is made immediately upon resumption of a program of study.

Annual Review of Progress in Research

Upon starting their research projects students will select a committee in consultation with their advisor. This committee will consist of the advisor and at least two others whom the student has chosen from among the physics faculty and will meet annually to review the student's progress. This review will normally consist of a presentation of recent progress by the student followed by discussion with the committee. The committee will then give a written evaluation to the student and a copy to the Graduate Studies Committee.

The physics department expects that students will be able to complete the Ph. D. within six years of entering the program (or four years from passing the qualifying examination for transfer or special students). Extension of financial support beyond six years requires the endorsement of the student's evaluation committee and the approval of the Graduate Studies Committee. Extension of financial support beyond seven years will not normally be given.

Financial Support

The department will endeavor to provide financial support to students who are making satisfactory progress in their course work and research. Satisfactory progress is measured in different ways depending on the student's standing in the program.

For students who have not passed the qualifying examination at the Ph. D. level, satisfactory progress consists of achieving at least a B (3.0/4.0) average in course work and satisfactory teaching (or, if appropriate, research) evaluations. A student who does not achieve a B average in any given semester will be placed on probation. A student can be removed from probationary status by achieving a B average (not including research credits) in the following semester. While on probationary status a student may have summer support withheld. If the student is taking the qualifying exam for the first time in August while on probation the student must pass at the Master's level to have support for the fall semester; if taking the second attempt in January while on probation, the student must pass at the Ph. D. level to have support for the spring semester. (If the student is taking the qualifying exam for the first time in January this will be modified accordingly.)

Notwithstanding performance in the courses, if a student does not pass the

qualifying exam at the Ph. D. level after two attempts the student will be placed on probation. If the student chooses to appeal to the Graduate Studies Committee for a third attempt (see the discussion regarding the qualifying examination above), then support may be withheld in the interim.

For all students with teaching assistantships: teaching evaluations will be collected both from the students and from the faculty instructor. Satisfactory evaluations of teaching are necessary for continued support as a teaching assistant.

Research students will be evaluated annually as described above.

Outside Employment

The Physics Department considers acceptance of a stipend by a student to imply a full-time commitment to his/her research and teaching obligations. The intention of the Department is to keep to a minimum the number of years that a student spends pursuing an advanced degree. Thus with rare exception (for which the student must receive explicit approval of the Graduate Study Committee), paid employment outside the Department while the student holds a research or teaching stipend is not permitted.

Health Insurance Benefits

University regulations require that international students participate in the College-sponsored Student Health Insurance Program each year of enrollment. The Department also very strongly encourages U.S. resident/citizen graduate students to enroll in this program each year. Departmental policy regarding payment of premiums for this health insurance coverage is as follows:

For graduate students with financial support in the form of research or teaching assistantships, the Department will cover the equivalent of the premium for one of the following:

- (a) the single-student policy
- (b) half the cost for the student and spouse policy
- (c) half the cost for the student and family policy.

For the international student any policy other than the one sponsored by the College must be approved by the King Student Health Center.

Departmental Graduate Studies Committee

The Departmental Graduate Studies Committee consists of faculty members, including the Director of the Graduate Studies Program, and a graduate student elected by the graduate students of the Department. This committee recommends changes in the graduate curriculum and procedures to the faculty of the Department, oversees the general structure of the graduate program, and grants exceptions to the regulations under special circumstances.

Ph. D. Dissertation

Advanced students undertaking Ph. D. dissertation research under the guidance of a faculty advisor should register for Physics 800, Physics Dissertation. This research is subject to an annual review as noted above.

The dissertation must be approved by a Ph.D. Dissertation Committee, which consists of at least five members, one of whom must be from outside the Physics Department. At least three members of the committee must be tenured or tenure-track members of the Physics faculty. The composition of the committee must be approved by the Director of Graduate Program and the Dean of Graduate Studies.