

PHYSICS (PHD IN PHYSICS)

Return to the Department of Physics

Course Requirements

The total minimum credit hour requirement for the Ph.D. in Physics is 62 credits for a candidate not holding an M.S. in physics, and 38 credits for a candidate holding an M.S. in Physics. This consists of the following:

Requirements for Those Who Do Not Enter the Doctoral Program With an M.S. in Physics

Code	Title	Hours
PHYS 601	Classical Mechanics	4
PHYS 603	Mathematical Physics	4
PHYS 610	Classical Electricity and Magnetism I	4
PHYS 621	Quantum Mechanics I	4
PHYS 622	Quantum Mechanics II	4
PHYS 623	Statistical Physics and Thermodynamics	4
PHYS 611	Classical Electricity and Magnetism II	3
PHYS 721	Quantum Field Theory I	3
PHYS 651	Teaching Physics (2 credit course taken twice)	4
Select four credits of Elective courses at the 500 level or above		4
PHYS 800	Dissertation (minimum 24 credits required)	24
Total Hours		62

Students may apply no more than 32 of the 62 credits above towards an M.S. degree if they elect to receive the M.S. degree during the course of their doctoral studies.

Requirements for Those Who Enter the Doctoral Program With an M.S. in Physics

Code	Title	Hours
PHYS 611	Classical Electricity and Magnetism II	3
PHYS 721	Quantum Field Theory I	3
PHYS 651	Teaching Physics (2 credit course taken twice)	4
Elective courses at the 500 level or above		4
PHYS 800	Dissertation (minimum 24 credits required)	24
Total Hours		38

Dissertation Requirement

The candidate must perform research, which is an original and substantial contribution. The dissertation must be approved by a faculty committee and successfully defended in a public oral examination.

Colloquium Requirement

Students who enter the Ph.D. program without an M.S. degree in Physics must take three semesters of PHYS 685 Colloquium - Colloquium for a total of 0 required credits.

Students who enter the Ph.D. program with an M.S. degree in Physics must take one semester of PHYS 685 Colloquium - Colloquium for a total of 0 required credits.

Qualifying Exam Requirement

The candidate must take the Ph.D. qualifying exam. This exam deals with the undergraduate material, the content of the first-year graduate courses and colloquia. There are two possible outcomes of the qualifying exam: pass or not pass at the Ph.D. level. A student is granted 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.

Language Requirement

There is no foreign language requirement.

Teaching Requirement

Teaching is an integral part of the educational process for those who seek an advanced degree, and therefore degree candidates will be assigned teaching duties for at least two semesters and are expected to register for at least two semesters of PHYS 651 Teaching Physics in conjunction with their teaching assignment. There will be an evaluation upon completion of the assignment, and the grade for this course is based on their performance of their teaching duties.

Satisfactory Progress

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, 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.

Starting from the second year of graduate study, the student is required to have an annual review every academic year. The review committee will consist of the advisor and at least two other physics faculty members. This review will normally consist of a presentation of recent progress by the student followed by discussion with the committee.

To be eligible to graduate, all students must achieve a cumulative grade point average of 3.0 on a 4.0 scale in all courses undertaken for graduate credit at William & Mary after admission to a degree program. No credit toward a degree will be allowed for a course in which a student receives a grade below C (grade point = 2.0).