

# PHYSICS - MASTER OF SCIENCE (MS)

Students may obtain a master's degree as either an undergraduate student through the bachelor's–accelerated master's degree program or as a graduate student.

Graduate students are generally only admitted to the PhD program in physics. Therefore, graduate students who have completed their PhD comprehensive exam or who are unable to complete the PhD program may earn an MS degree en route to a PhD degree. In certain circumstances, students can be admitted to the graduate program for a terminal master's degree, in which case the prerequisites are the same as for the doctoral program.

## Bachelor's–Accelerated Master's Degree Program

Students may earn this degree as part of the Bachelor's–Accelerated Master's (BAM) degree program, which allows currently enrolled CU Boulder undergraduate students the opportunity to earn a bachelor's and master's degree in a shorter period of time.

For more information, see the Accelerated Master's tab for the associated bachelor's degrees:

- Physics - Bachelor of Arts (BA) (<https://catalog.colorado.edu/undergraduate/colleges-schools/arts-sciences/programs-study/physics/physics-bachelor-arts-ba/#acceleratedmasterstext>)
- Engineering Physics - Bachelor of Science (BSEP) (<https://catalog.colorado.edu/undergraduate/colleges-schools/engineering-applied-science/programs-study/engineering-physics/engineering-physics-bachelor-science-bsep/#acceleratedmasterstext>)

## Requirements

### Qualifying Examination

The Graduate Record Examination (GRE) aptitude tests and advanced test in physics are normally used in place of a qualifying examination, and this examination is normally taken before the time of entry into the Graduate School.

### Course Requirements

There are two separate plans for obtaining the master's degree, both of which require a total of 30 credit hours with a grade of B- or better at the 5000 level or above (up to 6 credit hours may be at the 3000 or 4000 level if approved by the physics graduate chair). All but 3 credit hours must be in physics (more credit hours may be allowed with permission of the physics graduate chair). A minimum of a B average (GPA of 3.0) must be maintained.

### Degree Plans

#### Plan I: Thesis Option

This plan requires 4–6 thesis credit hours and completion of five of the following courses with a grade of B- or better.

Code	Title	Credit Hours
<b>Required Courses</b>		
Select five of the following courses:		15

PHYS 5250	Introduction to Quantum Mechanics 1
PHYS 5260	Introduction to Quantum Mechanics 2
PHYS 7310	Electromagnetic Theory 1
PHYS 7320	Electromagnetic Theory 2
PHYS 5210	Theoretical Mechanics
PHYS 7230	Statistical Mechanics

**Total Credit Hours** 15

The student must write a thesis and present a talk to a three-member faculty committee.

#### Plan II: Non-Thesis Option

This plan requires completion of five of the following courses with a grade of B- or better.

Code	Title	Credit Hours
<b>Required Courses</b>		
Select five of the following courses:		15
PHYS 5250	Introduction to Quantum Mechanics 1	
PHYS 5260	Introduction to Quantum Mechanics 2	
PHYS 7310	Electromagnetic Theory 1	
PHYS 7320	Electromagnetic Theory 2	
PHYS 5210	Theoretical Mechanics	
PHYS 7230	Statistical Mechanics	

**Total Credit Hours** 15

The student must pass the comprehensive exam II, which is a three-section examination that includes a formal research review paper and a formal presentation, followed by a question and answer oral session.