

PHYSICS, M.S.

Admissions Requirements

In addition to the General Admissions Requirements as published in this Catalog, applicants to the **Master of Science Degree in Physics** with concentrations in **Pure Physics** or **Applied Physics** must fulfill the following:

1. Bachelor of Arts or Bachelor of Science degree with a major in one of the physical sciences.
2. Completion of undergraduate courses in General Physics, Mechanics, Electricity and Magnetism, Optics, Modern Physics/Quantum Mechanics, Differential and Integral Calculus, and Differential Equations.

Student Learning Outcomes

Students pursuing the **Master of Science Degree in Physics** will be able to:

1. Demonstrate knowledge of quantitative methods appropriate for core area courses in Mathematical Methods, Quantum Mechanics, Electrodynamics, Thermodynamics, and Classical Mechanics.
2. Integrate physical concepts for the analysis of complex problems cutting across multidisciplinary STEM areas.
3. Analyze and model physical systems by utilizing mathematical approximations and models.
4. Communicate orally and in writing by making appropriate use of current presentation technology.

Degree Requirements

In addition to the General Degree Requirements as published in this Catalog, students must complete the following course requirements:

Code	Title	Hours
Core Courses		
CPHY 501	Classical Mechanics	3
CPHY 503	Electrodynamics	3
CPHY 515	Quantum Mechanics I	3
CPHY 516	Quantum Mechanics II	3
CPHY 520	Thermo & Statistical Mechanics	3
CPHY 531	Mathematical Methods I	3
CPHY 532	Mathematical Methods II	3
Elective Courses		
Select three credits for Thesis and six credits for Non-Thesis Research ¹		3-6
Graduate Electives		
CPHY 504		
CPHY 540	Solid State Physics	
CPHY 545		
CPHY 550		
CPHY 565	Physics of Surfaces	
CPHY 570		
CPHY 585		
CPHY 586		
CPHY 604	Thesis Consultation	

CPHY 605		
CPHY 606		
CPHY 607		
CPHY 610		
CPHY 615	Special Topics in Physics	
Research Seminars		
CPHY 601	Departmental Seminar	0
CPHY 602	Departmental Seminar	0
Thesis Research or Non-Thesis Research		
CPHY 603	Thesis Research (or Non-Thesis Research) ²	1-6
Total Hours		25-33

¹ Students may elect graduate elective courses in Chemistry, Computer Science, or Mathematical Sciences.

² Pure Physics or Applied Physics Concentration

Physics, M.S.

Pure Physics or Applied Physics Concentrations

Course	Title	Hours
First Year		
First Semester		
CPHY 501	Classical Mechanics	3
CPHY 515	Quantum Mechanics I	3
CPHY 531	Mathematical Methods I	3
CPHY 601	Departmental Seminar	0
Hours		9
Second Semester		
CPHY 503	Electrodynamics	3
CPHY 516	Quantum Mechanics II	3
CPHY 532	Mathematical Methods II	3
CPHY 602	Departmental Seminar	0
Hours		9
Second Year		
First Semester		
CPHY 520	Thermo & Statistical Mechanics	3
CPHY 601	Departmental Seminar	0
CPHY 603	Thesis Research	3
or CPHY 604	or Thesis Consultation	
CPHY XXX	Graduate Elective	
CXXX XXX	Graduate Elective	
Hours		6
Second Semester		
CPHY XXX	Graduate Elective	3
CPHY 602	Departmental Seminar	0
CPHY 603	Thesis Research (or Non-Thesis Research)	3
Hours		6
Total Hours		30