M.S. in Physics

The Department of Physics grants the Master of Science Degree under two options: Plan-A (thesis required), and Plan-B (without thesis).

Plan-A Requirements

Coursework		
PHSX 594	Seminar (01 - Teaching Seminar)	1
PHSX 594	Seminar (15 - Research Introduction Seminar)	1
PHSX 501	Advanced Classical Mechanics	3
PHSX 506	Quantum Mechanics I	3
PHSX 519	Electromagnetic Theory I	3
PHSX 566	Mathematical Physics I	3
Electives (see electives)		6
Thesis		
PHSX 590	Master's Thesis (An acceptable thesis and at least 10 credits of this course are required)	10
Examination		
A written comprehensive examination is required. A final oral examination is also required, covering the thesis and related areas.		
Total Credits		**30**

Plan-B Requirements

Coursework		
A minimum of 30 credits of acceptable course work is required, which shall be distributed as follows:		
PHSX 594	Seminar (01 -Teaching Seminar)	1
PHSX 594	Seminar (15 -Research Introduction Seminar)	1
PHSX 501	Advanced Classical Mechanics	3
PHSX 506 & PHSX 507	Quantum Mechanics I and Quantum Mechanics II	6
PHSX 519 & PHSX 520	Electromagnetic Theory I and Electromagnetic Theory II	6
PHSX 566	Mathematical Physics I	3
Electives (see electives)		10
Thesis		
None Required		
Examinations		
A written comprehensive examination is required		
Total Credits		**30**

Comprehensive Examination

- A student attempting to obtain the M.S. degree is allowed two attempts to pass this written examination at the M.S. Comprehensive level.
- A student who has passed the Ph.D. written Comprehensive Examination will be deemed to have passed the M.S. Comprehensive Examination.
- Details concerning the physics Comprehensive Examination and dates of exam can be found at http://www.physics.montana.edu/

Details on Physics graduate programs, application process, and degree requirements can be found at: Physics Graduate Program Overview (http://www.physics.montana.edu/grad/) and in the Physics graduate manual that is accessible from the Physics Department Home page https://physics.montana.edu/ .

Required Examinations: Qualifying and Comprehensive Examinations are required. A Final oral defense of the thesis is also required for Plan A. For details, see the Physics graduate manual that is accessible from the Physics Department Home page https://physics.montana.edu/ .

Qualifying exam: The Qualifying exam assesses proficiency in Physics at the undergraduate level and preparedness for graduate study and MS-level research. The Qualifying Exam consists of problems drawn from upper-level undergraduate course work in four subject areas: quantum mechanics, electricity and magnetism, classical mechanics, and statistical mechanics and thermodynamics. The Qualifying Exam is given twice a year, once in August and once in January. Students first take the Qualifying Exam at the beginning of their first year and are required to pass by January of their second year. To pass the Qualifying Exam at the MS level, a student must receive a passing grade in each of three of the four subjects. Students can pass individual subjects on different attempts and culminate a complete pass in up to four attempts. Entering students are highly encouraged to study for the exam the summer before entering, with the goal of passing all four subjects in their first two attempts and starting their research work in the Spring/Summer of their first year of graduate school.

Comprehensive Exam: The Comprehensive Exam for M.S. degree-seeking graduate students is based on the student's aggregate performance in the six core physics courses, not a written exam. Passing this Comprehensive Exam fulfills the Comprehensive Examination requirement of the Graduate School for a master's degree.

Thesis Defense: For Plan A M.S. degrees, a final oral examination is conducted by the student's Graduate Committee to assess the research contributions of the student. The passing of this Thesis Defense fulfills the Defense of Thesis requirement of the Graduate School for a master's degree.