

# PHYSICS (M.S.)

## Master of Science. Major in Physics. (Non-thesis Option)

General M.S. non-thesis requirements apply.

The requirement is a minimum of 30 credits in coursework and the credits must be distributed as follows:

Code	Title	Hours
Physics Courses Numbered 500 and higher <sup>1</sup>		20
Courses Numbered 400 and higher <sup>2</sup>		10
<b>Required Courses</b> <sup>3</sup>		
PHYS 521	Advanced Mechanics	
PHYS 533	Statistical Mechanics	
PHYS 541	Electromagnetic Theory I	
PHYS 542	Electromagnetic TheoryII	
PHYS 550	Quantum Mechanics I	
<b>Total Hours</b>		<b>30</b>

### Courses to total 30 credits for this degree

1

Include 2 credits for PHYS 501 Seminar and no more than three credits from PHYS 599 Research.

2

These may be non-physics courses upon the approval of the Physics Department's Academic Standards Committee.

3

Included in the 30 minimum credits.

Students must pass a comprehensive examination, which must be taken at the first offering after the student has completed the core courses required for the M.S. degree. Full-time students may not delay the completion of their core course requirements by avoiding the taking of a core course when offered except with the prior written consent of the Academic Standards Committee and the student's major professor. The examination is written and covers all of general graduate-level physics as defined by the required courses for the M.S. degree. Typically, it will be administered on two different days, with a time limit of approximately three hours for each day. The results of the examination will be evaluated by the physics faculty. If the comprehensive examination is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three nor more than 14 months following the first attempt.

## Master of Science. Major in Physics. (Thesis Option)

General M.S. requirements for a degree with thesis apply.

The requirement is a minimum of 30 credits in coursework and research. The credits must be distributed as follows:

Code	Title	Hours
Physics Courses Numbered 500 and higher <sup>1</sup>		20
Courses Numbered 400 and higher <sup>2</sup>		10
<b>Required Courses</b> <sup>3</sup>		

PHYS 521	Advanced Mechanics
PHYS 533	Statistical Mechanics
PHYS 541	Electromagnetic Theory I
PHYS 542	Electromagnetic TheoryII
PHYS 550	Quantum Mechanics I
<b>Total Hours</b>	<b>30</b>

### Courses to total 30 credits for this degree

1

Include 2 credits for PHYS 501 Seminar and no more than three credits from PHYS 599 Research.

2

These may be non-physics courses upon the approval of the Physics Department's Academic Standards Committee.

3

Included in the 30 minimum credits.

If a student's undergraduate preparation is considered deficient, then certain undergraduate courses will be required in the study plan. Such remedial credits are not to be counted towards the total required for the degree.

No departmental comprehensive exam is required.

A final defense of the M.S. thesis is scheduled upon completion of the thesis. The candidate is required to defend their work and show a satisfactory knowledge of the field in which the thesis research has been performed. The defense is oral and would typically last for one hour. The exam has to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

1. Students are able to present their research in a clear and organized fashion at conferences and colloquia.
2. Students acquire the ability to partake in the conception and execution of a meaningful research project.
3. Students acquire advanced knowledge through upper-level course work and the completion of a meaningful research project (thesis option).