

## PHYSICS PROGRAM

### Master of Science (M.S.) Degree

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#### DEGREE INFORMATION

##### Program Admission Deadlines:

<b>Fall:</b>	February 1
<b>Spring:</b>	September 1
<b>Summer:</b>	February 1

<b>Minimum Total Hours:</b>	30
<b>Program Level:</b>	Masters
<b>CIP Code:</b>	40.0801
<b>Dept. Code:</b>	PHY
<b>Program (Major/College):</b>	PHY AS
<b>Approved:</b>	1965

##### Concentrations:

Applied Physics (APM)  
 Atmospheric Physics (APZ)  
 Atomic and Molecular Physics (AMZ)  
 Laser Physics (LPZ)  
 Materials Physics (MPZ)  
 Medical Physics (MEZ)  
 Optical Physics (OPZ)  
 Semiconductor Physics (SCZ)  
 Solid State Physics (SSZ)

#### CONTACT INFORMATION

<b>College:</b>	Arts and Sciences
<b>Department:</b>	Physics
<b>Contact Information:</b>	<a href="http://www.grad.usf.edu">www.grad.usf.edu</a>

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#### PROGRAM INFORMATION

Contact program for information.

##### Accreditation:

Accredited by the Commission on Colleges of the Southern Association of College and Schools.

#### ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

##### Program Admission Requirements

Same as university plus

- three letters of recommendation
- a statement of purpose
- GRE General Test scores required, GRE Physics Subject Test scores recommended.

## DEGREE PROGRAM REQUIREMENTS

Students admitted to the graduate program in Physics, will consult with the Physics Director of Graduate Studies, who will be the student's course advisor and monitor the student's progress. After a decision has been made concerning the student's academic goals, the duties of graduate advising will be assumed by the major professor and the supervisory committee appointed by the department chairperson. In keeping with the student's academic goals, the supervisory committee will determine the appropriate course of study and examinations required for graduation for both the thesis and non-thesis options.

A minimum of 30 hours is required for the master's degree, at least 16 hours of which must be at the 6000 level. At least 20 hours must be in formal, regularly scheduled coursework, ten of which must be at the 6000 level.

<b>Total Minimum Hours:</b>	<b>30</b>
<b>Core Requirements</b>	<b>9 credit hours</b>
Core courses: (All three are required)	
a) PHZ 5115 Mathematical Methods I	3
b) PHY 6346 Electricity and Magnetism I	3
c) PHY 6645 Quantum Mechanics I	3

### Comprehensive Exam

**Thesis option** **15 credit hours**  
 At least four graduate-level elective classes (twelve credit hours), of which at least two must be within physics, plus nine credit hours of Master's-Thesis as per the Graduate Catalog. Directed Research hours may satisfy up to 50% of the thesis hour requirement. Contact the program for a current list of approved electives. .

**Non-thesis option** **21 credit hours**  
 At least five graduate-level elective classes (fifteen credit hours), of which at least three (9 credit hours) must be in physics. The remaining six credit hours may be earned through a combination of approved graduate level electives, approved graduate seminars, or directed research. Contact the program for a current list of approved electives.

### Laboratory or Computing Experience

The student, as part of their elective work or thesis, or through previous course work, should demonstrate either laboratory or computational experience.

## COURSES

See <http://www.ugs.usf.edu/course-inventory/>

## PHYSICS (APPLIED PHYSICS) PROGRAM

### Doctor of Philosophy (Ph.D.) Degree

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#### DEGREE INFORMATION

##### Program Admission Deadlines:

<b>Fall:</b>	February 1
<b>Spring:</b>	September 1
<b>Summer:</b>	February 1

<b>Minimum Total Hours:</b>	57
<b>Program Level:</b>	Doctoral
<b>CIP Code:</b>	40.0801
<b>Dept. Code:</b>	PHY
<b>Program (Major/College):</b>	APD AS
<b>Approved:</b>	1999

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#### CONTACT INFORMATION

<b>College:</b>	Arts and Sciences
<b>Department:</b>	Physics
<b>Contact Information:</b>	<a href="http://www.grad.usf.edu">www.grad.usf.edu</a>

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#### PROGRAM INFORMATION

This program emphasizes the practical, engineering applications of theoretical and fundamental physical concepts. The program encompasses the areas of laser physics, materials physics, computational physics, environmental physics and sensors, biomedical physics and imaging science.

##### Accreditation:

Accredited by the Commission on Colleges of the Southern Association of College and Schools.

#### ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

##### Program Admission Requirements

- three letters of recommendation
- a statement of purpose
- GRE General Test scores required, GRE Physics Subject Test scores recommended.

##### Students Entering with Prior Master's Degrees from Other Institutions

Some prior coursework toward the class requirements outlined below may be counted. However, at least six classes approved by the Director of Graduate Studies must be completed at USF in a discipline related to the Ph.D. Degree.

#### DEGREE PROGRAM REQUIREMENTS

Total Minimum Hours: 57 credit hours

##### Requirements

Core courses in theoretical and applied areas	15 hours
Lab or computer training	3 hours
Electives	12 hours
Industrial Practicum	3 hours
Dissertation Research (PHY 7980)	24 hours

**Core courses – 15 hours**

PHZ 5115	3	Mathematical Methods I
PHY 6346	3	Electricity and Magnetism I
PHY 6645	3	Quantum Mechanics I
PHY 6646	3	Quantum Mechanics II
PHY 6536 (MOVED)	3	Statistical Mechanics

**Laboratory or Computer Experience – 3 hours****Laboratory experience: 0–1 classes:**

This may be met, for example, by submitting an experimental thesis or dissertation, by: an approved graduate-level elective; submitting an experimental thesis or dissertation; or through sufficiently rigorous relevant experience (e.g., prior courses, industrial employment, etc.). Contact the program for a current list of approved courses.

**Computational experience: 0–1 classes**

This may be met, for example, by the following: an approved graduate-level elective; submitting a computational thesis or dissertation; or through sufficiently rigorous relevant experience (e.g., prior graduate or undergraduate courses, industrial employment, etc.). Contact the program for a current list of approved courses.

**Electives – 12 hours**

At least an additional 4 graduate-level classes, of which at least 2 are in Physics

Any graduate-level classes (excluding research and seminars) not used to fulfill other requirements. Contact the program for a current list of approved courses.

**Industrial Practicum – 3 hours**

PHZ 7940 3 Industrial Practicum

Contact department for details

**Doctoral Qualifying Examination:**

The Doctoral Qualifying Examination consists of two parts: The Credentials Certification and the Dissertation Proposal. Following successful completion of these two parts, the student may submit the paperwork for doctoral candidacy. The student's presentation of the Dissertation Proposal may occur at any time after successful completion of the Credentials Certification.

- *Credentials Certification*

The Student, in consultation with his/her research advisor, will assemble a supervisory committee consistent with the rules of the Office of Graduate Studies. It is the responsibility of the supervisory committee to evaluate the student's academic and research accomplishments and potential according to departmental standards, and if these are met, to certify that the student may proceed to the next step. Contact the Department for details.

- *Dissertation Proposal –*

- To become a Ph.D. Candidate, the student must present a written dissertation proposal and successfully defend that proposal to the supervisory committee. Contact the Department for details.

**Dissertation – 24 credit hours**

PHY 7980 (2-9) Dissertation

The candidate will conduct original and significant research, describe that research and the results in a doctoral dissertation and defend that dissertation in an oral presentation to the supervisory committee. The defense is open to the public and must be scheduled according to the regulations of the Office of Graduate Studies.

**COURSES**

See <http://www.ugs.usf.edu/course-inventory/>