B.A. vs B.S.

Our department offers both the B.A. and the B.S. degrees. The B.S. degree is designed for those students who are considering graduate school in physics or a related field. The B.A. degree is best for a variety of students, such as those who are double majoring or who are planning to pursue graduate work in another field (e.g., medicine, law, business, education). The B.S. degree requires 14 more hours of upper-level physics coursework beyond the B.A., making the B.A. option significantly more flexible. The lower level curriculum is the same for both degrees, so a decision between the two does not need to be made right away.

REQUIRED SEQUENCE OF COURSES FOR LOWER-LEVEL PHYSICS AND MATH COURSES

Upper level course sequences are shown on the following pages.

Any Semester

Calculus 1: MAC 2281 OR MAC 2311

Any Semester

General Physics I with Lab: PHY 2048 or PHY 2060 and PHY 2048L. PR: Calc I (MAC 2311/2281)

Calculus 2: MAC 2282 OR MAC 2312. PR: Calc I (MAC 2311/2281)

OPTIONAL: PHZ 2102: Problem Solving

Any Semester

General Physics II with Lab: PHY 2049 or PHY 2061 and PHY 2049L. PR: Calc II (MAC 2312/2282)

Calculus 3: MAC 2283 OR MAC 2313. PR: Calc II (MAC 2312/2282)

OPTIONAL: PHZ 2103: Problem Solving

To discuss undergraduate research or graduate school/career planning, please contact Dr. Randy Criss (rcriss@usf.edu) for an appointment.

UNDERGRADUATE RESEARCH

Obtaining research experience as an undergraduate is a critical aspect of our degree program. We require 2 credit hours of research for the B.S. degree, but you are strongly encouraged to do more than this minimum requirement. Additionally, B.A. students are also encouraged to do undergraduate research even though it is not required for catalog years 2012 and later. Many undergraduate research projects have resulted in conference presentations or even journal publications; this is especially beneficial to students considering technical careers and/or physics graduate school. Students commonly start research after completing PHY 2049, and many are able to obtain paid employment in research labs here at USF and through REUs at other institutions.

GRADUATE SCHOOL/CAREER PLANNING

A physics degree can be very versatile, and students have many options after graduation. Applying to graduate schools and/or jobs takes a lot of effort and planning, and we are here to help you navigate your way through this process.

Additional Degree Requirements

In addition to the PHY and MAC courses, physics majors must also take CHM 2045/2045L and CHM 2046/2046L. These can be taken at any time that works best for the student.

Students must also complete all College and University requirements for graduation. Students can view their degree audit using Degree Works (access through OASIS) to see which requirements are missing.
BACHELOR OF SCIENCE
SUGGESTED SEQUENCE OF COURSES FOR UPPER-LEVEL PHYSICS COURSES

Traditionally, students start the upper level sequence in the fall term and take two years to complete it. This scenario is outlined below. However, many students take a non-traditional route by starting in the spring term and/or by taking 3 years to complete the major; students taking a non-traditional route are strongly encouraged to talk with an academic advisor to determine the best path for their situation.

RECOMMENDED 2-YEAR PATH FOR B.S., STARTING IN THE FALL TERM*

This information for the B.S. is valid beginning with the Fall 2010 catalog year. See the academic advisor for information regarding earlier catalog years.

For the B.S., a minimum of 5 credit hours of physics electives subject to approval of the undergraduate advisor is required. The following are approved 3-credit hour electives and the term that they will usually be offered.

- Intro to Electronics and Test Instrumentation (PHY4744C); PR PHY 3822L; Fall Only
- Materials Physics (PHZ 4434); PR PHY3101; Fall Only
- Computational Physics (PHZ 4151C); PR PHY3101; Fall Only
- Biophysics (PHY 4936); PR PHY 3101; Spring Only
- Optics (PHY 4424); PR PHY 3101; Spring Only
- Lasers and Applications (PHY 4936); PR PHY 3101; Spring Only

This list is subject to change. Please see the course schedule for the exact list of courses each semester.

Prerequisites are strictly enforced! To avoid delays to your graduation, you must take courses in sequence. Taking courses out of sequence or withdrawing from a class due to poor performance will delay graduation. To give yourself the best chance of success, we strongly recommend that you limit yourself to a maximum of three upper level science or math courses at a time. Other credit hours can be taken to fulfill other degree requirements (e.g., FKIs, capstone, writing intensive, etc.).

When planning your schedule, allot ~ 3-4 hours study time outside of class for each upper-level physics credit hour that you are registered for. For example, an average student will require 9-12 hours outside of class every week to succeed in a 3-credit hour course such as PHY 3323.

This is not an official document of the university. You must verify your requirements are being met by looking at your degree audit and meeting with your academic advisor regularly.

Please visit http://physics.usf.edu for more information about our department and our degree programs.

*Classes marked with an asterisk are required for the B.S. degree only and are not required for the B.A. (for catalog years 2012 and later). For details about requirements for earlier catalog years, please see the academic advisor.
**BACHELOR OF ARTS**

**SUGGESTED SEQUENCE OF COURSES FOR UPPER-LEVEL PHYSICS COURSES**

Traditionally, students start the upper level sequence in the fall term and take two years to complete it. This scenario is outlined below. However, many students take a non-traditional route by starting in the spring term and/or by taking 3 years to complete the major; students taking a non-traditional route are strongly encouraged to talk with an academic advisor to determine the best path for their situation.

**RECOMMENDED 2-YEAR PATH FOR B.A., STARTING IN THE FALL TERM**

This information for the B.A. is valid beginning with the Fall 2012 catalog year. See the academic advisor for information regarding earlier catalog years.

<table>
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<tr>
<th>FALL, YEAR 1</th>
<th>SPRING, YEAR 1</th>
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| **PHY 3101**: Modern Physics - 3 hrs - Fall or Spring  
PR: PHY2049, 2049L, and Calc III (MAC 2313 or MAC 2283) | **PHY 3220**: Classical Mechanics - 4 hrs - Spring Only  
PR: PHY3101, PHZ 3113 |
| **PHY 3113**: Math Methods - 3 hrs - Fall or Spring  
PR: PHY2049; Calc III | **PHY 3323**: Electricity and Magnetism I - 3 hrs - Spring Only  
PR: PHY3101, PHZ 3113 |
| **PHY 3822L**: Intermediate Lab - 3 hrs - Fall Only  
PR: PHY2049,PHY2049L, CR: PHY 3101 | **PHY 4604**: Intro. to Quantum Mechanics - 3 hrs - Fall Only  
PR: PHY3101, PHZ 3113 |
| **Elective**: (one elective is required for the B.A. - see list to right for course options) | |
| **PHY 4823L**: Advanced Lab - 3 hrs - Spring Only  
PR: PHY3822L | **PHY 4930**: Undergraduate Seminar - 1 hr - Fall or Spring |

**GRADUATE!**

For the B.A., a minimum of 2 credit hours of physics electives subject to approval of the undergraduate advisor are required. The following are approved 3-credit hour electives and the term that they will usually be offered.

- Intro to Electronics and Test Instrumentation (PHY4744C); PR PHY 3822L; Fall Only
- Materials Physics (PHZ 4434); PR PHY3101; Fall Only
- Computational Physics (PHZ 4151C); PR PHY 3101; Fall Only
- EM II (PHY 4424); PR PHY3323; Fall Only
- Biophysics (PHY 4936); PR PHY 3101; Spring Only
- Optics (PHY 4424); PR PHY 3101; Spring Only
- Lasers and Applications (PHY 4936); PR PHY 3101; Spring Only
- Quantum II (PHY 4605); PR PHY 4604; Spring Only
- Statistical Physics (PHY 4523); PR 3221 or PHY 3323; Spring Only

This list is subject to change. Please see the course schedule for the exact list of courses each semester.

**Prerequisites are strictly enforced!** To avoid delays to your graduation, you must take courses in sequence. **Taking courses out of sequence or withdrawing from a class due to poor performance will delay graduation.** To give yourself the best chance of success, we strongly recommend that you limit yourself to a maximum of **three upper level science or math courses at a time.** Other credit hours can be taken to fulfill other degree requirements (e.g., FKLs, capstone, writing intensive, etc.).

When planning your schedule, **allot ~ 3-4 hours study time outside of class for each upper-level physics credit hour that you are registered for.** For example, an average student will require 9-12 hours outside of class **every week** to succeed in a 3-credit hour course such as PHY 3323.

WANT TO KNOW MORE ABOUT WHAT PHYSICS GRADUATES DO AND WHAT THEY EARN?

*If so, check out our handout “About Physics Graduates” which is available on our website.*

Please visit [http://physics.usf.edu](http://physics.usf.edu) for more information about our department and our degree programs.

This is not an official document of the university. You must verify your requirements are being met by looking at your degree audit and meeting with your academic advisor regularly.