**PHYSICS AND MATH REQUIREMENTS FOR PHYSICS MAJORS**

http://physics.usf.edu/

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Appointments and Advising Sessions:
To schedule an advising appointment please visit
http://usfweb3.usf.edu/appointments/StudentSignon.asp

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**B.A. vs B.S.**

Our department offers both the B.A. and the B.S. degrees. The B.S. degree is best for those students who are considering graduate school in physics or a related field and who are not double-majoring. The B.A. degree is best for a variety of students, such as those who are planning to pursue graduate work in another field (e.g: medicine, law, business, education), or those that are double-majoring. The curriculum is very similar for both degrees, so a decision does not need to be made right away.

The information below is to help you make the best choices for your success in our program. We want you to succeed and we are here to help. Please ask any questions you have!

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**REQUIRED SEQUENCE OF COURSES FOR LOWER –LEVEL PHYSICS AND MATH COURSES**

Any Semester

- **MAC 2281 OR MAC 2311: Calculus 1**

Any Semester

- **PHY 2048 and PHY 2048L: General Physics I with Lab**
  - **PR: Calc I (MAC 2311/2281)**
  - *OPTIONAL PHZ 2102: Problem Solving*
  - **PR: Physics I (PHY 2048)**
  - MAC 2282 OR MAC 2312: Calculus 2
  - **PR: Calc I (MAC 2311/2281)**

Any Semester

- **PHY 2049 and PHY 2049L: General Physics II with Lab**
  - **PR: Calc II (MAC 2312/2282)**
  - *OPTIONAL PHZ 2103: Problem Solving*
  - **PR: Physics II (PHY 2049)**
  - MAC 2283 OR MAC 2313: Calculus 3
  - **PR: Calc II (MAC 2312/2282)**

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**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.

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**UNDERGRADUATE RESEARCH**

Obtaining research experience as an undergraduate is a critical aspect of our degree program. We require 1-2 credit hours of research, but you are strongly required to do more than this minimum requirement. Many undergraduate research projects have resulted in conference presentations of 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.

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**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.

To discuss undergraduate research OR Graduate School / Career Planning, please contact Dr. Michelle Chabot (mchabot@cas.usf.edu) for an appointment.

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In addition to the required courses, students must complete all College and University requirements for graduation. Students can access their degree audit (SASS report) at facts.org (college students > graduation check; use your U# and OASIS pin) to see which requirements are missing.
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; possibilities for these scenarios are outlined on our website at http://physics.usf.edu. Students taking a non-traditional route are strongly encouraged to talk with an academic advisor to determine the best path for their situation. Contact the academic advisor with any and all questions!

**RECOMMENDED 2-YEAR PATH, STARTING IN THE FALL TERM**

**FALL, YEAR 1**
- **PHY 3101:** Modern Physics - 3 hrs - Fall or Spring  
  **PR:** PHY2049, 2049L, and Calc III (MAC 2313 or MAC 2283)
- **PHZ 3113:** Math Methods - 3 hrs - Fall Only  
  **PR:** PHY2049; Calc III
- **PHY 3822L:** Intermediate Lab - 3 hrs - Fall Only  
  **PR:** PHY2049,PHY2049L

**SPRING, YEAR 1**
- **PHY 3221:** Mechanics I - 3 hrs - Spring Only  
  **PR:** PHY3101, PHZ 3113
- **PHY 3323:** Electricity and Magnetism I - 3 hrs - Spring Only  
  **PR:** PHY3101, PHZ 3113
- **PHY 4823L:** Advanced Lab - 3 hrs - Spring Only  
  **PR:** PHY3822L

**SUMMER C**
- **PHY 4910:** Undergraduate Research - 2 hrs for B.S.; 1 hr for B.A.  
  **No PR; Requires a department approval form prior to registration**

**FALL, YEAR 2**
- **PHY 4222:** Mechanics II - 3 hrs - Fall Only  
  **PR:** PHY3221
- **PHY 4324:** Electricity and Magnetism II - 3 hrs - Fall Only  
  **PR:** PHY3323
- **Possible Elective (6 total hrs of electives required for B.S. - see list to right for course options)**

**SPRING, YEAR 2**
- **PHY 4604:** Introduction to Quantum - 3 hrs - Spring Only  
  **PR:** PHY3101, PHZ 3113
- **PHY 4523:** Statistical Physics (required for B.S. only) - 3 hrs - Spring Only  
  **PR:** PHY 3221 or PHY 3323
- **PHY 4930:** Undergraduate Seminar  
  **Possible Elective (6 total hrs of electives required for B.S. - see list to right for course options)**

**GRADUATE!**

**LIST OF COURSES FOR PHYSICS ELECTIVES FOR THE B. S.**

For the B. S., a minimum of 6 credit hours of physics electives subject to approval of the undergraduate advisor are required. The following are approved electives and the term that they are offered.

- **Optics (PHY 4936)** - 3 hours - Fall Only
- **Computational Physics (PHZ 4151C)** - 3 hours - Fall Only
- **Biophysics (PHY 4936)** - 3 hours - Fall Only
- **Intro to Electronics and Test Instrumentation (PHY4744C)** - 3 hours - Spring Only
- **Materials Physics (PHZ 4434)** - 3 hours - Spring Only

**Mathematical Methods in Physics** (PHZ 3113) - 3 hours - Fall Only

***For catalog years before 2010, Math Methods will count as an elective. For catalog year 2010 and later, Math Methods is not an elective because it is a required core course. Regardless of your catalog year, you must take math methods in your first fall term in upper level courses, because it is a prerequisite for other core courses.***

- **This list is subject to change. Please see the course schedule for the exact list of courses and prerequisites for a given semester.**

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.