

# Physics, B.S. (PHS)

## Required Supporting Courses: 20 Total Credits

### Mathematics Courses: 12 Credits

- MAC 2311 or MAC 2281 Calculus I
- MAC 2312 or MAC 2282 Calculus II
- MAC 2313 or MAC 2283 Calculus III

### Chemistry Courses: 8 Credits

- CHM 2045 &  CHM 2045L General Chemistry I & Lab
- CHM 2046 &  CHM 2046L General Chemistry II & Lab

## Required Physics Courses: 42 Total Credits

Course Prefix & Number	Course Title	Credits	Pre-requisites
<input type="checkbox"/> PHY 2060* or PHY 2048 <input type="checkbox"/> PHY 2048L	Enriched or General Physics I & Lab	4	MAC 2311 or MAC 2281
<input type="checkbox"/> PHY 2061* or PHY 2049 <input type="checkbox"/> PHY 2049L	Enriched or General Physics II & Lab	4	PHY 2048 or PHY 2060, PHY 2048L, & MAC 2312 or MAC 2282
<input type="checkbox"/> PHY 3101	Modern Physics	3	PHY 2049 or PHY 2061, PHY 2049L, & MAC 2313 or MAC 2283
<input type="checkbox"/> PHZ 3113	Math Methods	3	PHY 2049 or PHY 2061 & MAC 2313 or MAC 2283
<input type="checkbox"/> PHY 3822L	Intermediate Lab	3	PR: PHY 2049 or PHY 2061 & PHY 2049L CR: PHY 3101
<input type="checkbox"/> PHY 3220	Classical Mechanics	4	PHY 3101 & PHZ 3113
<input type="checkbox"/> PHY 3323	Electricity and Magnetism I	3	PHY 3101 & PHZ 3113
<input type="checkbox"/> PHY 4823L	Advanced Lab	3	PHY 3822L or AST 3930L
<input type="checkbox"/> PHY 4910	Undergraduate Research	2	Requires departmental approval
<input type="checkbox"/> PHY 4604	Intro. To Quantum Mechanics	3	PHY 3101 & PHZ 3113
<input type="checkbox"/> PHY 4324	Electricity and Magnetism II	3	PHY 3323
<input type="checkbox"/> PHY 4605	Quantum Mechanics II	3	PHY 4604
<input type="checkbox"/> PHY 4523	Statistical Physics	3	PHY 3220 or PHY 3323
<input type="checkbox"/> PHY 4930	Undergraduate Seminar	1	

\*PHY 2060 and PHY 2061 are preferred courses for the Physics degree program

## Required Physics Electives: Choose Two (2) courses from the following list:

Course Prefix & Number	Course Title	Credits	Pre-requisites
<input type="checkbox"/> AST 3930	Astrophysics	3	PHY 3101
<input type="checkbox"/> PHY 4744C (Fall Only)	Intro to Electronics and Test Instrumentation	3	PHY 3822L
<input type="checkbox"/> PHZ 4434 (Fall Only)	Materials Physics	3	PHY 3101
<input type="checkbox"/> PHZ 4151C (Fall Only)	Computational Physics	3	PHY 3101
<input type="checkbox"/> PHY 4936 (Spring Only)	Biophysics	3	PHY 3101
<input type="checkbox"/> PHY 4424 (Spring Only)	Optics	3	PHY 3101
<input type="checkbox"/> PHY 4936 (Spring Only)	Lasers and Applications	3	PHY 3101
<input type="checkbox"/> Other coursework as offered and approved by Dept.	Will vary by course and semester		Will vary by course

Students should regularly review their DegreeWorks audit to ensure they are on track to complete all graduation Requirements, and in preparation for all advising appointments.

If you are already declared as a Physics BS major, follow these steps to review your Degree Works report online:

Go to <http://Degreeworks.usf.edu> → Type in NetID and password →  
View your degree audit! (DegreeWorks can also be accessed through Canvas and OASIS)

### General Education Common Core/Foundations of Knowledge and Learning Lower-Level Requirements

#### General Education Common Core

- ENC 1101 (3cr)**
- Social/Behavioral Sciences (3cr)**
  - \_\_\_\_\_ (Select from: AMH 2020, ANT 2000, ECO 2013, POS 2041, PSY 2012, and SYG 2000)
- Humanities (3cr)**
  - \_\_\_\_\_ (Select from: ARH 2000, HUM 1020, LIT 2000, PHI 2010, and THE 2000)

#### Additional USF Foundations of Knowledge and Learning (FKL) courses (\*No duplicate credit allowed):

- ENC 1102 (3cr)**
- Social/Behavioral Sciences (3cr)**
  - \_\_\_\_\_
- Humanities (3cr)**
  - \_\_\_\_\_
- Fine Arts (3cr)**
  - \_\_\_\_\_
- Human/Cultural Diversity in a Global Context (3cr)**
  - \_\_\_\_\_
- Two Courses from the above categories must meet the Human Historical Context and Process dimension (6cr)**
  - ENC1101 (3cr)
  - \_\_\_\_\_ (3cr)

#### Upper-Level Requirements:

*\*Require 60 completed credit hours and must be chosen only from the list in the Catalog or Schedule of Classes.*

- Capstone exit course (3cr)** \_\_\_\_\_
- Writing Intensive exit course (3cr)** \_\_\_\_\_

\_\_\_\_ cr → **120 credits:** A Bachelor's degree requires a minimum of 120 credit hours.

\_\_\_\_ cr → **42 upper level credits:** All students are required to take at least 42 credits at the 3000 & 4000 level. Please note: The Physics BS Tier 2 U/L major courses will satisfy **forty (40)** credits of the required 42 credits and the exit courses-combined will satisfy another **six (6)** credits.

\_\_\_\_ cr → **9 credit summer rule:** All students who enter USF with fewer than 60 credits are required to take at least 9 credits of course work in the summer at a State University System (SUS) 4-year University.

\_\_\_\_ **12 cr of Gordon Rule Writing** ENC 1101 & ENC 1102 , Writing Intensive Exit Course and one additional course \_\_\_\_\_

\_\_\_\_ **FLENT:** Foreign Language Entrance Requirement: All students must have two years of the same foreign language in high school. Students without this requirement must take two semesters of foreign language in college.

## Pre-requisite Requirements

### Math Coursework

- MAC 2311 or MAC 2281 (4cr) - Calculus I
- MAC 2312 or MAC 2282 (4cr) - Calculus II
- MAC 2313 or MAC 2283 (4cr) - Calculus III

### Physics Coursework

- PHY 2060 or PHY 2048 (3cr) & PHY 2048L (1cr) - Enriched or General Physics I & Lab
- PHY 2061 or PHY 2049 (3cr) & PHY 2049L (1cr) - Enriched or General Physics II & Lab

### Fall Semester—Year One

- **PHY 3101 Modern Physics (3cr)**  
*(PR: PHY 2061 or PHY 2049/L & Calc III)*
- **PHZ 3113 Math Methods (3cr)**  
*(PR: PHY 2061 or PHY 2049/L & Calc III)*
- **PHY 3822L Intermediate Lab (3cr)**  
*(PR: PHY 2061 or PHY 2049/L, CR: PHY 3101)*

### Spring Semester—Year One

- **PHY 3220 Classical Mechanics (4cr)**  
*(PR: PHY 3101 & PHZ 3113)*
- **PHY 3323 Electricity and Magnetism I (3cr)**  
*(PR: PHY 3101 & PHZ 3113)*
- **PHY 4823L Advanced Lab**  
*(PR: PHY3822L or AST 3930L)*

### Summer C—Any Year

- **PHY 4910 Undergraduate Research (2cr)**  
*(No PR, Requires departmental approval form)*

### Fall Semester—Year Two

- **PHY 4604 Intro to Quantum Mechanics (3cr)**  
*(PR: PHY 3101 & PHZ 3113)*
- **PHY 4324 Electricity and Magnetism II (3cr)**  
*(PR: PHY 3323)*
- **Physics Elective (3cr)**  
*(Select from the approved list. PR varies by course)*

### Spring Semester—Year Two

- **PHY 4605 Quantum Mechanics II (3cr)**  
*(PR: PHY 4604)*
- **PHY 4523 Statistical Physics (3cr)**  
*(PR: PHY 3220 or PHY 3323)*
- **PHY 4930 (1cr)**
- **Physics Elective (3cr)**  
*(Select from the approved list. PR varies by course)*