

Physics BA

Overview

The **Bachelor of Arts in Physics**, offered by the Department of Physics, is designed for students who are planning for a non-research career in a field which nevertheless has an important science component. Examples include patent law, environmental law enforcement, medicine, or sales or management in a high-technology industry. Physics students learn how the natural world works. The laboratory, math and problem-solving skills they pick up are great for the job market. Physics majors teach, work on Wall Street and serve in the military. They also perform well on the admission tests for law and medical schools.

Campus Location: Main

Program Code: ST-PHYS-BA

Distinction in Major

To graduate with distinction in this major, a student must satisfy the following criteria:

- achieve a minimum 3.5 major GPA and
- carry out an independent study or undergraduate thesis project.

Consult the undergraduate physics faculty advisor for more details.

Accelerated Programs

Accelerated programs provide a pathway for students to pursue both an undergraduate degree and an advanced degree in a shorter amount of time. Below is a list of available accelerated programs for students in the BA in Physics.

- BA in Physics / MEd in Middle Grades Education with a Concentration in Science
- BA in Physics / MEd in Middle Grades Education with a Concentration in Science and Language Arts
- BA in Physics / MS in Physics

Undergraduate Contact Information

Peter Riseborough, Chair
Science, Education and Research Center, Room 444
215-204-5655

Zbigniew Dziembowski, Faculty Advisor
Science, Education and Research Center, Room 412
215-204-7639
zbig.dziembowski@temple.edu

Learn more about the Bachelor of Arts in Physics.

These requirements are for students who matriculated in academic year 2023-2024. Students who matriculated prior to fall 2023 should refer to the Archives to view the requirements for their Bulletin year.

Bachelor of Arts Requirements

Summary of Requirements for the Degree

1. University Requirements (123 total s.h.)

- Students must complete all University requirements including those listed below.
- All undergraduate students must complete at least two writing-intensive courses for a total of at least six credits at Temple as part of their major. The specific writing-intensive course options for this major are:

Code	Title	Credit Hours
PHYS 2796	Introduction to Modern Physics	4
PHYS 4796	Experimental Physics	3

- Students must complete the General Education (GenEd) requirements.

- See the General Education section of the *Undergraduate Bulletin* for the GenEd curriculum.
- Students who complete CST majors receive a waiver for 2 Science & Technology (GS) and 1 Quantitative Literacy (GQ) GenEd courses.
- Students must satisfy general Temple University residency requirements.

2. College Requirements

- A minimum of 90 total credits within the College of Science & Technology (CST), the College of Liberal Arts (CLA), and/or the College of Engineering (ENG).
 - A minimum of 45 of these credits must be upper-level (courses numbered 2000 and above).
 - A minimum of 6 of these credits must be upper-level (courses numbered 2000 and above) CLA credits.
- Successful completion or waiver from the second level of a foreign language.
- Complete a one-credit first-year seminar or transfer seminar.
 - SCTC 1001 CST First Year Seminar for every entering first-year CST student.
 - SCTC 2001 CST Transfer Seminar for every entering transfer CST student.

3. Major Requirements for Bachelor of Arts (56 s.h.)

At least 7 courses required for the major must be completed at Temple. At least 5 Physics courses must be completed at Temple.

Code	Title	Credit Hours
Mathematics		
MATH 1041 or MATH 1941	Calculus I Honors Calculus I	4
MATH 1042 or MATH 1942	Calculus II Honors Calculus II	4
MATH 2043 or MATH 2943	Calculus III Honors Calculus III	4
Sequenced Science Courses ¹		
Select one of the following sequences:		8
BIOL 1011 & BIOL 1012	General Biology I and General Biology II ²	
BIOL 1111 & BIOL 2112	Introduction to Organismal Biology and Introduction to Cellular and Molecular Biology	
BIOL 1911 & BIOL 2912	Honors Introduction to Organismal Biology and Honors Introduction to Cellular and Molecular Biology	
CHEM 1031 & CHEM 1033 & CHEM 1032 & CHEM 1034	General Chemistry I and General Chemistry Laboratory I and General Chemistry II and General Chemistry Laboratory II	
EES 2001	Physical Geology (and a 2000+ Elective)	
Physics Courses		
PHYS 1008	Physics Seminar I	1
Select one of the following:		4
PHYS 1061	Elementary Classical Physics I	
PHYS 1961	Honors Elementary Classical Physics I (F)	
PHYS 2021	General Physics I	
PHYS 2921	Honors General Physics I (F)	
Select one of the following:		4
PHYS 1062	Elementary Classical Physics II	
PHYS 1962	Honors Elementary Classical Physics II (S)	
PHYS 2022	General Physics II	
PHYS 2922	Honors General Physics II (S)	
PHYS 2101	Classical Mechanics (S)	3
PHYS 2502	Mathematical Physics (S)	4
PHYS 2796	Introduction to Modern Physics (S)	4
PHYS 3301	Electricity and Magnetism (F)	4
PHYS 4796	Experimental Physics (S)	3
Physics Electives		

Select three of the following: 9

PHYS 1004	Introduction to Astronomy (F)
PHYS 2511 & PHYS 3511	Scientific Computing I and Scientific Computing II
PHYS 3101	Analytical Mechanics (F)
PHYS 3302	Classical Electromagnetism (S)
PHYS 3701	Introduction to Quantum Mechanics I (S)
PHYS 4101	Thermal Physics (F)
PHYS 4301	Electronics (S - odd years)
PHYS 4302	Optics (F)
PHYS 4701	Introduction to Solid State Physics (S - even years)
PHYS 4702	Introduction to Quantum Mechanics II (F)

Total Credit Hours 56

Code	Title	Credit Hours
------	-------	--------------

(F) - Fall only course

(S) - Spring only course

Note: PHYS 3091 is not available for major credit.

1

Students are required to take a two-semester sequence of laboratory science electives not within physics. The science courses can be chosen from Biology, Chemistry, or Earth & Environmental Science.

2

BIOL 1011 is a Fall only course; BIOL 1012 is a Spring only course.

Suggested Academic Plan

Bachelor of Arts in Physics

Suggested Plan for New Students Starting in the 2023-2024 Academic Year

Year 1		Credit Hours
Fall		
MATH 1041 or MATH 1941	Calculus I or Honors Calculus I	4
PHYS 1008	Physics Seminar I	1
Select one of the following:		4
PHYS 1061	Elementary Classical Physics I	
PHYS 1961	Honors Elementary Classical Physics I (F)	
PHYS 2021	General Physics I	
PHYS 2921	Honors General Physics I (F)	
SCTC 1001	CST First Year Seminar	1
ENG 0802 or ENG 0812 or ENG 0902	Analytical Reading and Writing or Analytical Reading and Writing: ESL or Honors Writing About Literature	4
Elective		1
Credit Hours		15
Spring		
MATH 1042 or MATH 1942	Calculus II or Honors Calculus II	4
Select one of the following:		4
PHYS 1062	Elementary Classical Physics II	
PHYS 1962	Honors Elementary Classical Physics II (S)	
PHYS 2022	General Physics II	

PHYS 2922	Honors General Physics II (S)	
IH 0851 or IH 0951	Intellectual Heritage I: The Good Life or Honors Intellectual Heritage I: The Good Life	3
Elective		4
Credit Hours		15
Year 2		
Fall		
MATH 2043 or MATH 2943	Calculus III or Honors Calculus III	4
IH 0852 or IH 0952	Intellectual Heritage II: The Common Good or Honors Intellectual Heritage II: The Common Good	3
Elective		9
Credit Hours		16
Spring		
PHYS 2502	Mathematical Physics (S)	4
PHYS 2796	Introduction to Modern Physics (S)	4
GenEd Breadth Course		3-4
Elective		4-3
Credit Hours		15
Year 3		
Fall		
PHYS 3301	Electricity and Magnetism (F)	4
Sequenced Science Part 1 ¹		4
Foreign Language 1001 - First Level		4
GenEd Breadth Course		3
Credit Hours		15
Spring		
PHYS 2101	Classical Mechanics (S)	3
Sequenced Science Part 2 ¹		4
Foreign Language 1002 - Second Level		4
GenEd Breadth Course		3
Elective		2
Credit Hours		16
Year 4		
Fall		
Physics Elective ²		3
Physics Elective ²		3
Upper-level CLA Course (numbered 2000 and above)		3
GenEd Breadth Course		3
Elective		4
Credit Hours		16
Spring		
PHYS 4796	Experimental Physics (S)	3
Physics Elective ²		3
Upper-level CLA Course (numbered 2000 and above)		3
GenEd Breadth Course		3
Elective		3
Credit Hours		15
Total Credit Hours		123

Code	Title	Credit Hours
------	-------	--------------

(F) - Fall only course

(S) - Spring only course

1

Select from the Sequenced Science Courses list under Requirements.

2

Select from the Physics Electives list under Requirements.