

Biophysics, B.S.

Learn more about the Bachelor of Science in Biophysics.

The Bachelor of Science in Biophysics fulfills all medical and pharmacy school requirements. Biophysics students interested in research careers can pursue a graduate degree in biophysics, biology, molecular biology or neuroscience, as well as the combined MD/PhD degree in medical physics, health physics or nuclear medicine.

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Bachelor of Science

Summary of Requirements for the Degree

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

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

Code	Title	Credit Hours
BIOL 2296	Genetics (S)	4
BIOL 3096	Cell Structure and Function (F)	4
BIOL 3396	Scientific Writing for Biology: The Art of Communicating	3
CHEM 4196	Techniques of Chemical Measurement II	5
CHEM 3397 & CHEM 3398	Physical Chemistry Laboratory I and Physical Chemistry Laboratory II	4
MATH 3098	Modern Algebra (F)	3
MATH 4096	Senior Problem Solving	3
PHYS 2796	Introduction to Modern Physics (S)	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

- 45 Upper Level (2000+) credits within the College of Science & Technology (CST), the College of Liberal Arts (CLA) or the College of Engineering (ENG).
- 90 credits within the College of Science & Technology (CST), the College of Liberal Arts (CLA) or the College of Engineering (ENG).
- All students in the College of Science and Technology are required to take a one credit first year seminar. SCTC 1001 CST First Year Seminar is the appropriate course option for every entering first year CST major. Transfer students should use SCTC 2001 CST Transfer Seminar to fulfill this requirement. Other courses that fulfill this requirement may be found on the CST College Requirements page.

3. Major Requirements for Bachelor of Science (75-79 s.h.)

At least 10 courses required for the major must be completed at Temple. At least 3 Biology and 4 Physics courses must be completed at Temple.

Code	Title	Credit Hours
Biology		
BIOL 2112 or BIOL 2912	Introduction to Cellular and Molecular Biology Honors Introduction to Cellular and Molecular Biology	4
BIOL 2296	Genetics (S)	4
BIOL 3096	Cell Structure and Function (F)	4
Physics		
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 2502	Mathematical Physics (S)	4
PHYS 2796	Introduction to Modern Physics (S)	4
PHYS 3301	Electricity and Magnetism (F)	4
PHYS 4101	Thermal Physics (F)	3
Chemistry		
Select one of the following:		4
CHEM 1031 & CHEM 1033	General Chemistry I and General Chemistry Laboratory I	
CHEM 1951 & CHEM 1953	Honors General Chemical Science I and Honors Chemical Science Laboratory I (F)	
Select one of the following:		4
CHEM 1032 & CHEM 1034	General Chemistry II and General Chemistry Laboratory II	
CHEM 1952 & CHEM 1954	Honors General Chemical Science II and Honors Chemical Science Laboratory II (S)	
Select one of the following:		4
CHEM 2201 & CHEM 2203	Organic Chemistry I and Organic Chemistry Laboratory I	
CHEM 2211 & CHEM 2213	Organic Chemistry for Majors I and Organic Majors Laboratory I (F)	
CHEM 2921 & CHEM 2923	Organic Chemistry for Honors I and Organic Honors Laboratory I (F)	
Select one of the following:		4
CHEM 2202 & CHEM 2204	Organic Chemistry II and Organic Chemistry Laboratory II	

CHEM 2212 & CHEM 2214	Organic Chemistry for Majors II and Organic Majors Laboratory II (S)	
CHEM 2922 & CHEM 2924	Organic Chemistry for Honors II and Organic Honors Laboratory II (S)	
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
Biophysics Electives		
Four 2000+ Biophysics Electives chosen in consultation with the Physics faculty advisor. At least two of the electives must be Physics courses.		12-16
Total Credit Hours		75-79

Code	Title	Credit Hours
(F) - Fall only course		
(S) - Spring only course		

Note: Most research and Independent Study courses are not available for major credit, such as:

Code	Title	Credit Hours
BIOL 2082	Independent Research I	1 to 4
BIOL 3082	Independent Research II	1 to 4
BIOL 3091	Research Methods	3
BIOL 3681	Cooperative Studies	2 to 4
BIOL 3685	Externship Studies	3
BIOL 4291	Extrdepartmental Research	1 to 4
BIOL 4483	Accelerated Research in Biochemistry	3
BIOL 4491	Research in Biochemistry	3
BIOL 4591	Research in Neuroscience	1 to 4

Calculation of Major GPA

Courses listed under the major requirements for the degree will be included in the calculation of the major GPA. Courses that could not apply toward the major as an elective or required course would not be counted in the calculation of the major GPA. This would include BIOL 1011, for example.

Distinction in Major

A student who wishes to graduate with Distinction in the Major must complete all courses required for the biophysics major with a GPA of 3.5 or better, and carry out an independent study or undergraduate thesis project. Consult the undergraduate physics advisor for more details.

Suggested Academic Plan

Bachelor of Science in Biophysics

Requirements for New Students starting in the 2021-2022 Academic Year

Year 1		Credit Hours
Fall		
Select one of the following:		4
CHEM 1031 & CHEM 1033	General Chemistry I	
CHEM 1951 & CHEM 1953	Honors General Chemical Science I (F)	

MATH 1041 or 1941	Calculus I	4
SCTC 1001	CST First Year Seminar	1
ENG 0802, 0812, or 0902	Analytical Reading and Writing [GW]	4
Elective		2
Term Credit Hours		15
Spring		
Select one of the following:		4
CHEM 1032 & CHEM 1034	General Chemistry II	
CHEM 1952 & CHEM 1954	Honors General Chemical Science II (S)	
MATH 1042 or 1942	Calculus II	4
IH 0851 or 0951	Intellectual Heritage I: The Good Life [GY]	3
Elective		5
Term Credit Hours		16
Year 2		
Fall		
Select one of the following:		4
CHEM 2201 & CHEM 2203	Organic Chemistry I	
CHEM 2211 & CHEM 2213	Organic Chemistry for Majors I (F)	
CHEM 2921 & CHEM 2923	Organic Chemistry for Honors I (F)	
MATH 2043 or 2943	Calculus III	4
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)	
IH 0852 or 0952	Intellectual Heritage II: The Common Good [GZ]	3
Term Credit Hours		15
Spring		
Select one of the following:		4
CHEM 2202 & CHEM 2204	Organic Chemistry II	
CHEM 2212 & CHEM 2214	Organic Chemistry for Majors II (S)	
CHEM 2922 & CHEM 2924	Organic Chemistry for Honors II (S)	
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)	
GenEd Breadth Course		3-4
Elective		5-4
Term Credit Hours		16
Year 3		
Fall		
BIOL 2112 or 2912	Introduction to Cellular and Molecular Biology	4
PHYS 3301	Electricity and Magnetism (F)	4
2000+ Biophysics Elective ¹		3-4

GenEd Breadth Course		3
Elective		1-0
Term Credit Hours		15
Spring		
PHYS 2502	Mathematical Physics (S)	4
PHYS 2796	Introduction to Modern Physics [WI] (S)	4
2000+ Biophysics Elective ¹		3-4
GenEd Breadth Course		3
Elective		1-0
Term Credit Hours		15
Year 4		
Fall		
BIOL 3096	Cell Structure and Function [WI] (F)	4
PHYS 4101	Thermal Physics (F)	3
2000+ Biophysics Elective ¹		3-4
GenEd Breadth Course		3
Elective		2-1
Term Credit Hours		15
Spring		
BIOL 2296	Genetics [WI] (S)	4
2000+ Biophysics Elective ¹		3-4
GenEd Breadth Course		3
Elective		6-5
Term Credit Hours		16
Total Credit Hours:		123

Code	Title	Credit Hours
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(F) - Fall only course

(S) - Spring only course

¹ Four electives must be chosen in consultation with the physics advisor. All courses must be 2000-level or above. At least two electives must be Physics courses. Choose courses in Physics, Biology (Neurobiology, Genetics, Cell Structure, Physiology), Chemistry (Physical Chemistry), Biochemistry and Biophysics. Recommended for graduate school in Physics: PHYS 2101, PHYS 3302, PHYS 3701 and PHYS 4796 and as much of the B.S. program in Physics as time allows. Students planning to go to medical school should complete BIOL 1111 Introduction to Organismal Biology.