Mathematics & Physics, B.S.

Learn more about the Bachelor of Science in Mathematics and Physics (https://www.temple.edu/academics/degree-programs/mathematics-and-physics-major-st-maph-bs).

The Bachelor of Science in Mathematics & Physics (jointly administered with the Mathematics department), is an interdisciplinary program providing a foundation in physical sciences with a strong emphasis on the mathematical techniques needed for analysis and modeling. It prepares the student for science or analysis careers which use these math tools along with problem-solving skills.

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Bachelor of Science

Summary of Requirements for the Degree

1. University Requirements (123 total s.h.)
   - MATH 0701 (4 s.h.) and/or ENG 0701 (4 s.h.), if required by placement testing.
   - All Temple students must take a minimum of two writing-intensive courses at Temple as part of their major. Following is a list of courses that can be used to satisfy the writing-intensive requirement:

Code	Title	Credit Hours
MATH 3098	Modern Algebra	3
MATH 4096	Senior Problem Solving	3
PHYS 2796	Introduction to Modern Physics	4
PHYS 4796	Experimental Physics	3

   - Students must complete the General Education (GenEd) requirements.
     - See the General Education (http://bulletin.temple.edu/undergraduate/general-education) section of the *Undergraduate Bulletin* for the GenEd curriculum.
     - Students who complete CST majors typically receive a waiver for 2 Science & Technology (GS) and 1 Quantitative Literacy (GQ) GenEd courses.

- Students must satisfy general Temple University residency requirements (http://bulletin.temple.edu/undergraduate/academic-policies/academic-residency-requirements).

2. College Requirements
   - 90 credits within the College of Science & Technology (CST) or the College of Liberal Arts (CLA).
   - 45 Upper Level (2000+) credits within the College of Science & Technology (CST) or the College of Liberal Arts (CLA).
   - First Year Seminar Requirement: All students in the College of Science & Technology (CST) are required to take a 1 credit first year seminar course, SCTC 1001 CST First Year Seminar. Other courses that fulfill this requirement may be found on the CST College Requirements (http://bulletin.temple.edu/undergraduate/science-technology/#collegerequirementstext) page. Only one course in this category may count towards graduation.
3. Major Requirements for Bachelor of Science (76 s.h.)

   At least 10 courses required for the major must be completed at Temple. At least 6 Math and 5 Physics courses must be completed at Temple.

Code	Title	Credit Hours
Mathematics Courses		
MATH 1041	Calculus I	4
or MATH 1941	Honors Calculus I	
MATH 1042	Calculus II	4
or MATH 1942	Honors Calculus II	
MATH 2043	Calculus III	4
or MATH 2943	Honors Calculus III	
MATH 2111	Basic Concepts of Math	3
MATH 3031	Probability Theory I	3
MATH 3045	Differential Equations with Linear Algebra (F)	4
MATH 3051	Theoretical Linear Algebra (S)	4
MATH 3098	Modern Algebra (F)	3
MATH 3141	Advanced Calculus I (F)	3
MATH 3142	Advanced Calculus II (S)	3
MATH 4051	Complex Analysis (F)	3
Physics Courses		
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 3101	Analytical Mechanics (F)	3
PHYS 3301	Electricity and Magnetism (F)	4
PHYS 3302	Classical Electromagnetism (S)	3
PHYS 3701	Introduction to Quantum Mechanics I (S)	3
PHYS 4101	Thermal Physics (F)	3
Capstone Course		
MATH 4096	Senior Problem Solving	3
or PHYS 4796	Experimental Physics	
Total Credit Hours		76

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

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 MATH 1022, for example.

Distinction in Major

To graduate with Distinction in Mathematics & Physics, a student should meet the following requirements:

1. Students must have a cumulative grade point average (GPA) of 3.50 or better.
2. Students must have a GPA of 3.50 or better in their Physics courses.
3. Students must have a GPA of 3.50 or better in their Mathematics courses.
4. Students must have a GPA of 3.50 or higher in the following Mathematics courses:

Code	Title	Credit Hours
MATH 3141	Advanced Calculus I	3
MATH 3142	Advanced Calculus II	3
MATH 3098	Modern Algebra	3
MATH 4051	Complex Analysis	3
Any other 4000-level course other than individual study		

5. Students must carry out an independent study, undergraduate research or undergraduate thesis project. Consult the undergraduate Physics advisor for more details.

Suggested Academic Plan

Bachelor of Science in Mathematics & Physics

Requirements for New Students starting in the 2019-2020 Academic Year

Year 1		
Fall		**Credit Hours**
MATH 1041 or 1941	Calculus I	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)	
SCTC 1001	CST First Year Seminar	1
General Education/Elective Credits		6
	Term Credit Hours	15
Spring		
MATH 1042 or 1942	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)	
General Education/Elective Credits		8
	Term Credit Hours	16

Year 2		
Fall		
MATH 2043 or 2943	Calculus III	4
MATH 2111	Basic Concepts of Math	3
MATH 3045	Differential Equations with Linear Algebra (F)	4
General Education/Elective Credits		4
	Term Credit Hours	15
Spring		
PHYS 2502	Mathematical Physics (S)	4
PHYS 2796	Introduction to Modern Physics [WI] (S)	4
MATH 3051	Theoretical Linear Algebra (S)	4
General Education/Elective Credits		3
	Term Credit Hours	15
Year 3		
Fall		
MATH 3031	Probability Theory I	3
MATH 3141	Advanced Calculus I (F)	3
PHYS 3301	Electricity and Magnetism (F)	4
General Education/Elective Credits		6
	Term Credit Hours	16
Spring		
MATH 3142	Advanced Calculus II (S)	3
PHYS 2101	Classical Mechanics (S)	3
PHYS 3701	Introduction to Quantum Mechanics I (S)	3
General Education/Elective Credits		7
	Term Credit Hours	16
Year 4		
Fall		
MATH 3098	Modern Algebra [WI] (F)	3
MATH 4051	Complex Analysis (F)	3
PHYS 3101	Analytical Mechanics (F)	3
PHYS 4101	Thermal Physics (F)	3
General Education/Elective Credits		3
	Term Credit Hours	15
Spring		
MATH 4096 or PHYS 4796	Senior Problem Solving [WI]	3
PHYS 3302	Classical Electromagnetism (S)	3
General Education/Elective Credits		9
	Term Credit Hours	15
	Total Credit Hours:	123

Code	Title	Credit Hours

(F) - Fall only course.

(S) - Spring only course.