

Natural Sciences, B.S.

Learn more about the Bachelor of Science in Natural Sciences (<https://www.temple.edu/academics/degree-programs/natural-sciences-major-st-nats-bs>).

The Bachelor of Science (B.S.) in Natural Sciences provides students more breadth than traditional science programs. Many exciting areas of scientific inquiry, such as the neurosciences, environmental sciences, and biophysical sciences, require general science backgrounds that encompass multiple science disciplines. This program prepares students for these trans-disciplinary programs.

This major also provides necessary coursework for pre-health programs and professional school preparation spanning medical, dental, optometry, physician assistant programs and more. With careful selection of laboratory-based courses, students are well prepared for entry level science positions, and a variety of graduate programs both disciplinary and interdisciplinary. In particular, this is an excellent background for students wishing to enter graduate programs in education, forensic science, scientific writing or editing, or related science technology areas.

In the Bachelor of Science degree, there is greater emphasis on depth of science content knowledge and application of knowledge compared with the Bachelor of Arts in Natural Sciences. The B.S. degree requires additional science coursework and offers more advanced study in natural sciences. This option provides more flexibility for students declaring the B.S. in Natural Sciences later in their undergraduate course of study as they can apply more disciplinary science courses to meet the additional science requirements of this degree.

Students in this program can apply to our Professional Science Master's (PSM) programs in the following areas: Bioinnovation, Biotechnology and Scientific Writing. Students interested in these PSM programs can apply for admission to the +1 B.S./P.S.M. accelerated options for completion of these degrees. PSM programs provide specific curricula and training for workforce entry or re-entry.

This program of study can prepare students for graduate study in a traditional science discipline and many Natural Sciences graduates have found employment in technical fields.

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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. For Natural Sciences majors, the following courses will satisfy the writing-intensive requirement: SCTC 2396 and SCTC 4396.
 - 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 (73-85 s.h.)

At least 7 courses required for the major must be completed at Temple. At least 2 courses in the chosen concentration must be completed at Temple.

Code	Title	Credit Hours
Biology		
Select one of the following:		4
BIOL 1011	General Biology I (F)	
BIOL 1111	Introduction to Organismal Biology	
BIOL 1911	Honors Introduction to Organismal Biology (S)	
Select one of the following:		4
BIOL 1012	General Biology II (S)	
BIOL 2112	Introduction to Cellular and Molecular Biology	
BIOL 2912	Honors Introduction to Cellular and Molecular Biology (F)	
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)	
College of Science & Technology		
SCTC 1501	STEM Challenge: The World Around Us	4
SCTC 1502	STEM Challenge: The World Within	4
SCTC 2396	Writing for Science and Technology	3
SCTC 4396	Paradigms of Scientific Knowledge: Knowledge Discovery from Scientific Data	3
Computer Programming/Physics		
Select two of the following:		6-8
CIS 1051	Introduction to Problem Solving and Programming in Python	
CIS 1052	Introduction to Web Technology and Programming	
CIS 1053	Programming in Matlab	
PHYS 1004	Introduction to Astronomy (F)	
SCTC 3312	Coding STEM Lessons	
Earth & Environmental Science		
EES 2001	Physical Geology	4
Mathematics		
Select one of the following:		4
MATH 1031	Differential and Integral Calculus	
MATH 1041	Calculus I	
MATH 1941	Honors Calculus I	
Select one of the following: ¹		0-4
MATH 1042	Calculus II	
MATH 1942	Honors Calculus II	
MATH 1044	Introduction to Probability and Statistics for the Life Sciences	
Philosophy/History		
Select one of the following:		3
PHIL 2196	Perspectives on Science and Mathematics (WI)	
SCTC 3001	History of Science ²	
Physics		
Select one of the following:		4
PHYS 1021	Introduction to General Physics I	
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 1022	Introduction to General Physics II	
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)	

Science Electives

Four Upper-Level (2000+) Science Electives ³ 12-16

Science Breadth Electives

Select one of the following: 3-4

ANTH 2705	Fundamentals of Biological Anthropology	
ENST 2001	Environment and Society	
MATH 2031	Probability and Statistics	
PHIL 2157	Environmental Ethics	
PHIL 2596	Philosophical Perspectives on the Environment	
SCTC 2100	Special Topics in Science and Technology	
SCTC 2101	Medical Imaging Physics - Seeing Through Ourselves	
SCTC 2102	SERC: Science of Energy Resource Consumption	

Select one of the following: 3-4

Any Upper-Level (2000+) CST Course

Total Credit Hours 73-85

Code	Title	Credit Hours
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(F) - Fall only course

(S) - Spring only course

¹ These courses are not required if MATH 1031 is completed.

² If SCTC 3001 is taken, one of the Science Electives or Science Breadth Electives must satisfy the second writing intensive course requirement.

³ The four science electives must satisfy elective criteria within each department, and all four courses must be taken from the same department. The departments from which you can choose electives are: Biology, Chemistry, Earth & Environmental Science, or Physics. In the circumstance where a laboratory course is the complement of a lecture course, both must be completed to fulfill the requirement for ONE science elective.

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 a Distinction in Natural Sciences a student is required to achieve a 3.33 GPA or higher in all of the content area courses in the major.

Suggested Academic Plan

Bachelor of Science in Natural Sciences

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

Year 1	Credit Hours
Fall	

Select one of the following: 4

CHEM 1031 & CHEM 1033	General Chemistry I	
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CHEM 1951 & CHEM 1953	Honors General Chemical Science I (F)	
Select one of the following:		4
MATH 1031	Differential and Integral Calculus	
MATH 1041	Calculus I	
MATH 1941	Honors Calculus I	
SCTC 1001	CST First Year Seminar	1
SCTC 1501	STEM Challenge: The World Around Us	4
General Education/Elective Credits		3
	Term Credit Hours	16
Spring		
Select one of the following:		4
CHEM 1032 & CHEM 1034	General Chemistry II	
CHEM 1952 & CHEM 1954	Honors General Chemical Science II (S)	
Select one of the following: ¹		0-4
MATH 1042	Calculus II	
MATH 1942	Honors Calculus II	
MATH 1044	Introduction to Probability and Statistics for the Life Sciences	
SCTC 1502	STEM Challenge: The World Within	4
General Education/Elective Credits		7-3
	Term Credit Hours	15
Year 2		
Fall		
Select one of the following:		4
BIOL 1011	General Biology I (F)	
BIOL 1111	Introduction to Organismal Biology	
BIOL 1911	Honors Introduction to Organismal Biology (S)	
EES 2001	Physical Geology	4
General Education/Elective Credits		7
	Term Credit Hours	15
Spring		
Select one of the following:		4
BIOL 1012	General Biology II (S)	
BIOL 2112	Introduction to Cellular and Molecular Biology	
BIOL 2912	Honors Introduction to Cellular and Molecular Biology (F)	
Science Elective (2000+) ²		3-4
General Education/Elective Credits		9-8
	Term Credit Hours	16
Year 3		
Fall		
Select one of the following:		4
PHYS 1021	Introduction to General Physics I	
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:		3
PHIL 2196	Perspectives on Science and Mathematics [WI]	
SCTC 3001	History of Science	
Science Elective (2000+) ²		3-4

General Education/Elective Credits		5-4
	Term Credit Hours	15
Spring		
Select one of the following:		4
PHYS 1022	Introduction to General Physics II	
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)	
Select one of the following:		3-4
CIS 1051	Introduction to Problem Solving and Programming in Python	
CIS 1052	Introduction to Web Technology and Programming	
CIS 1053	Programming in Matlab	
SCTC 3312	Coding STEM Lessons	
SCTC 2396	Writing for Science and Technology [WI]	3
General Education/Elective Credits		5-4
	Term Credit Hours	15
Year 4		
Fall		
Select one of the following:		3-4
PHYS 1004	Introduction to Astronomy (F)	
CIS 1051	Introduction to Problem Solving and Programming in Python	
CIS 1052	Introduction to Web Technology and Programming	
CIS 1053	Programming in Matlab	
SCTC 3312	Coding STEM Lessons	
Science Elective (2000+) ²		3-4
Science Breadth Elective ³		3-4
Elective Credits		6-3
	Term Credit Hours	15
Spring		
SCTC 4396	Paradigms of Scientific Knowledge: Knowledge Discovery from Scientific Data [WI]	3
Science Elective (2000+) ²		3-4
Science Breadth Elective ³		3-4
Elective Credits		7-5
	Term Credit Hours	16
	Total Credit Hours:	123

¹ These courses are not required if MATH 1031 is completed.

² The four science electives must satisfy elective criteria within each department, and all four courses must be taken from the same department. The departments from which you can choose electives are: Biology, Chemistry, Earth & Environmental Science or Physics. In the circumstance where a laboratory course is the complement of a lecture course, both must be completed to fulfill the requirement for ONE science elective.

³ See Requirements for course options.

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