Applied Mathematics BS

Overview

The **Bachelor of Science in Applied Mathematics**, offered by the Department of Mathematics, focuses on mathematical and computational methods applicable in the sciences, engineering and industry. In particular, this degree is suitable preparation for professions featuring sophisticated mathematical modeling and/or scientific computing. This degree is also suitable preparation for graduate study in applied mathematics or related disciplines.

Campus Location: Main

Program Code: ST-APMA-BS

Distinction in Major

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

- achieve a minimum 3.25 cumulative GPA;
- achieve a minimum 3.50 GPA in the Mathematics courses required for the major;
- successful completion of MATH 3098 instead of MATH 3096; and
- achieve a minimum 3.50 GPA in the following courses:
  - MATH 3098
  - MATH 3141
  - MATH 3142
  - MATH 4051
  - Any additional courses from the following:
    - MATH 3043
    - MATH 3044
    - MATH 3101
    - Any 4000-level course other than Individual Study.

Undergraduate Contact Information

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Learn more about the Bachelor of Science in Applied Mathematics.

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 Science 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
MATH 3096	Introduction to Modern Algebra	3
MATH 3098	Modern Algebra	3
MATH 4096	Senior Problem Solving	3
SCTC 2396	Writing for Science and Technology	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).
   - Complete a one-credit first-year 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 Science (71-73 s.h.)
   At least 9 courses required for the major must be completed at Temple. At least 8 Math courses must be completed at Temple.

Code	Title	Credit Hours
Computer Programming courses		
MATH 1033	Computing in MATLAB	1.5
MATH 1034	Applications in MATLAB	1.5
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 2045	Differential Equations with Linear Algebra	4
MATH 2111	Basic Concepts of Math	3
MATH 2121	Mathematical Modeling and Simulation	3
MATH 3031	Probability Theory I	3
MATH 3043	Numerical Analysis I (F)	4
MATH 3044	Numerical Analysis II (S)	3
MATH 3051	Theoretical Linear Algebra	4
Select one of the following:		3
MATH 3137	Real & Complex Analysis I	
MATH 3141	Advanced Calculus I (F)	
Select one of the following:		3
MATH 3138	Real & Complex Analysis II	
MATH 3142	Advanced Calculus II (S)	
MATH 4041	Partial Differential Equations	3
MATH 4043	Applied Mathematics (F)	3
Two Mathematics electives at the 3000+ level or above - select from the following: [1]		6-8
MATH 3032	Mathematical Statistics	
MATH 4033	Probability Theory II	
MATH 4051	Complex Analysis	
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)	
Writing-Intensive Courses (Mathematics/College of Science & Technology)		
Select one of the following:		3
MATH 3096	Introduction to Modern Algebra	
MATH 3098	Modern Algebra	
SCTC 2396	Writing for Science and Technology	
MATH 4096	Senior Problem Solving	3
Total Credit Hours		**71-73**

Code	Title	Credit Hours

(F) - Fall only course

(S) - Spring only course

[1]

Other courses are possible, subject to approval by a Mathematics faculty advisor.

Suggested Academic Plan

Bachelor of Science in Applied Mathematics

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

Year 1		
Fall		**Credit Hours**
MATH 1033	Computing in MATLAB	1.5
MATH 1034	Applications in MATLAB	1.5
MATH 1041 or MATH 1941	Calculus I or Honors 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
ENG 0802 or ENG 0812 or ENG 0902	Analytical Reading and Writing or Analytical Reading and Writing: ESL or Honors Writing About Literature	4
	Credit Hours	**16**
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
MATH 2045	Differential Equations with Linear Algebra	4
MATH 2111	Basic Concepts of Math	3
IH 0852 or IH 0952	Intellectual Heritage II: The Common Good or Honors Intellectual Heritage II: The Common Good	3
Elective		2
	Credit Hours	**16**
Spring		
MATH 2121	Mathematical Modeling and Simulation	3
MATH 3031	Probability Theory I	3
Select one of the following:		3
MATH 3096	Introduction to Modern Algebra	
MATH 3098	Modern Algebra	
SCTC 2396	Writing for Science and Technology	
GenEd Breadth Course		3
GenEd Breadth Course		3
	Credit Hours	**15**
Year 3		
Fall		
MATH 3043	Numerical Analysis I (F)	4
Select one of the following:		3
MATH 3137	Real & Complex Analysis I	
MATH 3141	Advanced Calculus I (F)	
3000+ Math Elective [1]		3-4
Elective		3
Elective		2-1
	Credit Hours	**15**
Spring		
MATH 3044	Numerical Analysis II (S)	3
Select one of the following:		3
MATH 3138	Real & Complex Analysis II	
MATH 3142	Advanced Calculus II (S)	
MATH 3051	Theoretical Linear Algebra	4
GenEd Breadth Course		3-4
Elective		3-2
	Credit Hours	**16**
Year 4		
Fall		
MATH 4043	Applied Mathematics (F)	3
3000+ Math Elective [1]		3-4
GenEd Breadth Course		3
GenEd Breadth Course		3
Elective		3-2
	Credit Hours	**15**

Spring		
MATH 4041	Partial Differential Equations	3
MATH 4096	Senior Problem Solving	3
Elective		3
Elective		3
Elective		3
	Credit Hours	**15**
	Total Credit Hours	**123**

Code	Title	Credit Hours

(F) - Fall only course

(S) - Spring only course

1

Other courses are possible, subject to approval by a Mathematics faculty advisor.