MATHEMATICS: GENERAL MATHEMATICS, BA

At the core of modern theoretical science, mathematics has historically provided an expressive language and a theoretical framework for advances in the physical sciences. It has since become central in the life and social sciences and in computer science. Mathematics at Penn embraces traditional core areas of mathematics as well as developing areas (Penn is one of the world's leading centers in the application of logic to theoretical computer science). The goals of the major program are to assist students in acquiring both an understanding of mathematics and the ability to use it. The mathematics major provides a solid foundation for graduate study in mathematics and a background for study in economics, the biological sciences, the physical sciences, and engineering, as well as many non-traditional areas.

The minimum total course units (https://www.college.upenn.edu/credits-needed-major/) for graduation in this major is 33. Double majors may entail more course units.

Majors and prospective majors: Please email majoradvisor@math.upenn.edu. You will be assigned to one of the Math Major Advisors who will discuss your current and future plans with you. It is important that you see this advisor at least once per semester thereafter.

Below is a planning tool that is meant to help you but does not replace the web and advisor visit requirements.

For more information: https://www.math.upenn.edu/undergraduate/math-majors-and-minors/mathematics-major (https://www.math.upenn.edu/undergraduate/math-majors-and-minors/mathematics-major/)

For information about the General Education requirements, please visit the College of Arts & Sciences Curriculum (https://www.college.upenn.edu/curriculum/) page.

Code	Title	Course Units
College General Education Requirements and Free Electives		
Foundational Approaches + Sectors[1] + Free Electives		20
Major Requirements		
Calculus Requirement		
Select one of the following Options:		2-3
Option 1:		
MATH 104	Calculus, Part I	
MATH 114/115	Calculus, Part II	
MATH 240	Calculus, Part III	
Option 2:		
MATH 116	Honors Calculus	
MATH 260	Honors Calculus, Part II	
Complex Analysis Requirement		
MATH 410	Complex Analysis	1
Advanced Linear Algebra Requirement		
MATH 314	Advanced Linear Algebra	1
Differential Equations Requirement		
MATH 241	Calculus, Part IV	1
or MATH 425	Partial Differential Equations	
Seminar Requirement		
MATH 202	Proving Things: Analysis	1
or MATH 203	Proving things: Algebra	
Algebra Requirement		
MATH 370 & MATH 371	Algebra and Algebra	2
or MATH 502 & MATH 503	Abstract Algebra and Abstract Algebra	
Analysis Requirement		
MATH 360 & MATH 361	Advanced Calculus and Advanced Calculus	2
or MATH 508 & MATH 509	Advanced Analysis and Advanced Analysis	
Mathematics Electives [2]		
Select 5 course units in Math		1-5
Select 2 course units in Cognate		2
Total Course Units		**33**

[1] You may count no more than one course toward both a Major and a Sector requirement. For Exceptions, check the Policy Statement (http://www.college.upenn.edu/sectors-policy/).

[2] Number of elective course units will vary based on the manner in which other requirements are fulfilled. Please consult your math major adviser when choosing math electives and cognates.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2021 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.