Why Mathematics at Brandeis?

Brandeis offers students the unique opportunity to study mathematics in a setting that combines the informality, flexibility, and warmth of a small department with the intellectual vigor of a highly accomplished faculty. Courses range from introductory classes to seminars on topics at the forefront of current research. Our flexible program is designed to meet the needs and interests of all students, from those interested in attending graduate school in mathematics to those interested in pursuing a career in fields as varied as law, teaching, medicine, and business.

Curriculum Overview

Students have the option of completing a major or a minor in mathematics.

The major leads to a bachelor of arts in mathematics and requires courses in four core areas of mathematics:

- Linear algebra
- Multivariable calculus
- Analysis
- Abstract algebra

Additionally, four upper-level elective courses are required, and each major must take a course in the art of writing mathematical proofs.

Students majoring in mathematics may graduate with honors if they take six upper-level elective courses instead of four. We offer honors versions of several core courses. Graduate courses are also available for advanced students.

A teacher preparation track is offered for majors who wish to become licensed to teach secondary school. Majors in this track must complete the following:

- Four core courses and two upper-level electives
- A course in the art of writing mathematical proofs
- Introduction to Probability and Statistics (MATH 8a)
- One computer science course
- High School Teacher Licensure Program

Students may complete a minor in mathematics by taking a course in linear algebra, a course in multivariable calculus, and three additional upper-level courses.
Electives for the mathematics program cover the main areas of the field:

- Topology
- Differential geometry
- Number theory
- Combinatorics
- Differential equations
- Probability and statistics

Other Features of the Program

Undergraduate Research Experience
Students may carry out original research projects either by taking the undergraduate research course, or through individual work with a faculty member.

Putnam Exam
We offer problem sessions to help students prepare for the William Lowell Putnam Competition, a national undergraduate mathematics competition.

Interdisciplinary Lecture Series
This cross-discipline lecture series explores the relationship between mathematics and art, music, the sciences, and the social sciences. Faculty from other departments, including economics, music, biology, anthropology, and English have given talks in our series.

Career and Education Options
The study of mathematics can lead not only to a career in mathematics, computers, actuarial science, or other sciences, but is also an excellent background for law, business, economics, finance, and medicine.

Faculty
Following is a list of department faculty members and their areas of specialization:

- Ruth Charney, chair
  Geometric group theory, topology
- Mark Adler
  Analysis, differential equations
- Fred Diamond
  Number theory
- Ira Gessel, graduate advising head
  Combinatorics, computer science
- Edward Goldstein
  Differential geometry, special structures on manifolds
- Kiyoshi Igusa
  Differential topology, homological algebra
- Dmitry Kleinbock
  Dynamical systems, ergodic theory
- Bong Lian
  Representation theory, Calabi-Yau geometry, string theory
- Alan Mayer
  Classical algebraic geometry
- Susan Parker, elementary mathematics coordinator
  Combinatorics, elementary mathematics instruction
- Daniel Ruberman
  Geometric topology and gauge theory
- Gerald Schwarz
  Algebraic groups, transformation groups
- Pierre van Moerbeke
  Stochastic processes, Korteweg-deVries equation