



ABOUT THE PROGRAM

As our world becomes more technological, mathematics plays a central role in understanding society. Sophisticated mathematics is essential to the natural sciences, ecology, economics, and our commercial and technical life.

Mathematics is, at the same time, a subject of great depth and beauty, which the major attempts to make manifest. The undergraduate program introduces students to fundamental fields of mathematics — algebra, analysis, geometry and topology — and to the habit of mathematical thought.

Although mathematics majors may go on to graduate school, scientific research, finance, actuarial science or mathematics teaching, many choose the major for its inherent interest.

What makes the program distinctive?

The Department of Mathematics at Brandeis combines the informality, flexibility and general friendliness of a small department with the

intellectual vigor of a faculty whose research accomplishments have placed it among the top departments in the country.

FAST FACTS

Current number of majors and minors: 126

Number of faculty: 14

Can you minor in this program? Yes

Emphasis within the major: algebra, analysis, combinatorics, mathematical physics, number theory, topology

Popular second majors: computer science, economics, physics

Website: www.math.brandeis.edu

ACADEMICS AND RESEARCH

Course offerings

The mathematics curriculum includes courses in calculus, linear algebra, abstract algebra, real and complex analysis, topology, differential geometry, differential equations, number theory, combinatorics, statistics and probability theory.

Research activities

The faculty members of the mathematics department have diverse interests, including areas in the interface of multiple disciplines. Deep problems in geometry and number theory often are tackled with insights from group theory and analysis, as well as physics. Advanced tools from algebra are brought to bear on important and long-standing questions in knot theory and combinatorics. Students also have opportunities to engage in faculty-supervised research projects and directed reading projects with graduate students.

BEYOND THE CLASSROOM

Undergraduate departmental representatives (UDRs)

Two or three UDRs are elected each year among our senior mathematics majors to be a voice for the mathematics student community at Brandeis. They help organize interdisciplinary lectures, student seminars, department parties and other social events. Each December, our mathematics majors also participate in the famed annual William Lowell Putnam Mathematics Competition. Department faculty members run weekly training sessions in the fall to prepare the participating majors for this competition.

AWARDS AND RECOGNITION

Distinguished faculty

Professor Joël Bellaïche was awarded the prestigious one-year American Mathematical Society Centennial Fellowship for 2010-11 for research in mathematics. The primary selection criterion for this fellowship is the excellence of the candidate's research. In recent years, Professor Dmitry Kleinbock was awarded a Sloan Fellowship, and Professor Bong Lian was awarded a Guggenheim Fellowship. In 2012, Professors Ruth Charney and Kiyoshi Igusa were named Fellows of the American Mathematical Society.

Grant recognition

The National Science Foundation has awarded Brandeis an Integrative Graduate Education and Research Traineeship grant in the mathematical sciences. The grant is designed to foster interdisciplinary research and education by and for graduate students across the mathematical and theoretical sciences, including chemistry, economics, mathematics, neuroscience and physics. The Brandeis Mathematics Department has also been awarded several Department of Education grants aimed at enhancing graduate education. In addition, department faculty members hold research grants from the National Science Foundation and Simons Foundation to support their research and training of graduate students.

AFTER BRANDEIS

Graduate programs

The PhD program in mathematics at Brandeis is fairly small and highly selective, and it is designed primarily to lead to the PhD in pure mathematics. Brandeis also offers a Master of Arts degree and a postbaccalaureate certificate in mathematics.

Diverse career fields

In addition to those who go on to graduate programs in mathematics or statistics, recent Brandeis graduates have gone on to become an elementary school math specialist, an actuary at MetLife, a senior financial analyst, an accountant and a speech language pathologist.

Notable mathematicians

Many Brandeis mathematics majors have become well-known mathematicians, including Ruth Charney, professor of mathematics at Brandeis and the former president of the Association for Women in Mathematics; Robert Zimmer, president of the University of Chicago; Ulrike Tillmann, professor of mathematics at the University of Oxford; Harald Helfgott, researcher at CNRS/ENS in Paris and winner of the Leverhulme, Whitehead and Adams prizes; and Thordur Jonsson, chairman of the board, Nordic Institute for Theoretical Physics.

"Pure mathematics is, in its way, the poetry of logical ideas."

Albert Einstein



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