MASTER LEARNING GOALS & OUTCOMES

KNOWLEDGE:

* Master students are required to demonstrate a broad and deep knowledge in Algebra, Topology, Geometry and Analysis. This is done by passing with a high mark the exams of the seven fundamental courses offered every year in those fields (Algebra I and II, Topology I and II, Real Analysis, Complex Analysis, Geometric Analysis)

* A wide array of more advanced or more specialized elective courses is also offered, as well as reading courses, and Master students are required to take at least two of them.

* Seminars, colloquium and special lectures are also regularly given by scholars from all over the world, and allow the students to be exposed to current-research mathematics.

CORE SKILLS:

Students graduating with a master in mathematics at Brandeis possess a rigorous foundation in modern mathematics.

OUTCOME:

Students graduating with a master are ideally prepared to apply for a PhD program in pure or applied mathematics, physics, and other science. They also have competencies in mathematics that are in high demand in many industries, or for certain jobs in the government.
PhD LEARNING GOALS & OUTCOMES

KNOWLEDGE:

- PhD students are required, before they begin to work on their dissertation, to demonstrate a broad and deep knowledge in Algebra, Topology, Geometry and Analysis. This is done by passing with a high mark the exams of the seven fundamental courses offered every year in those fields (Algebra I and II, Topology I and II, Real Analysis, Complex Analysis, Geometric Analysis)

- A wide array of more advanced or more specialized elective courses is also offered, and students are required to take a certain number of them, according to their taste and to the needs of their progress toward their dissertation.

- Many reading courses, where one or a small group of students read a research paper or a mathematical book under the guidance of a professor, are offered, often on demand. They allow the students to acquire progressively the knowledge necessary to enter current research.

- Seminars, colloquium and special lectures are also regularly given by scholars from all over the world, and allow the students to learn more current-research mathematics.

CORE SKILLS:

Students graduating with a PhD in mathematics at Brandeis

- have learnt to read and understand research papers, both in English and in another language of their choice;

- have learnt how to present mathematical materials, in particular their own results, in seminars and other expositions destined to fellow graduate students and researchers;

- have participated, as a teaching fellow, in a structured program of undergraduate teaching, giving them the skills and experience necessary to teach successfully mathematics at various undergraduate levels;

- have attained research expertise and completed a significant body of original research that advances a specific field of study in mathematics;

- have written and defended a PhD dissertation.

OUTCOME:

Students graduating with a PhD have been trained to be effective teachers and cutting-edge researchers. They may work in academia, either in a research-oriented institution or in a teaching-oriented one, in many industries, or in the government.