Mathematics & Statistics
Departmental Information
https://www.bu.edu/math/

Major Requirements:
● BA in Mathematics (all specializations):
  https://www.bu.edu/academics/cas/programs/mathematics-statistics/ba/
● BA in Economics and Mathematics:
  https://www.bu.edu/academics/cas/programs/economics/ba-mathematics/
● BA in Mathematics and Philosophy:
  https://www.bu.edu/academics/cas/programs/mathematics-statistics/ba-mathematics-philosophy/
● BA in Mathematics and Computer Science:
  https://www.bu.edu/academics/cas/programs/mathematics-statistics/ba-mathematics-computer-science/
● BA in Mathematics and Math Education:
  https://www.bu.edu/academics/cas/programs/mathematics-statistics/ba-mathematics-education/
● BA in Statistics and Computer Science:

Specializations:
Students majoring in Mathematics are required to choose a specialty in either Pure Math, Applied Math, or Statistics before the start of their junior year. A specialization can be chosen before junior year. Information on the
different specializations can be found below. To declare your specialty, please fill out this form:
https://www.bu.edu/cas/cas-advising-major-declaration-form/

Pure Math Specialization:
- Pure mathematics is the study of structures and concepts that underlie mathematics. This specialization will include the acquisition of skills such as solving problems beyond those of an algorithmic nature, engaging in rigorous thought, using language precisely, working with abstraction, and writing rigorous mathematical proofs. Pure mathematics is generally divided into three fields: analysis, algebra, and geometry.

Applied Math Specialization:
- Applied mathematics is the mathematical study of general concepts and principles. This will emphasize the acquisition of skills such as problem solving, mathematical modeling, numerical computation, and applying mathematical techniques to problems arising in many fields.

Statistics Specialty:
- Statistics is the science and, arguably, also the art of learning from data. As a discipline it is concerned with the collection, analysis, and interpretation of data, as well as the effective communication and presentation of results relying on data. Statistics lies at the heart of the type of quantitative reasoning necessary for making important advances in the sciences, such as medicine and genetics, and for making important decisions in business and public policy.
Advising

All first-years and sophomores are assigned to our Undergraduate Program Admin, Chelsey Edwards. She can be reached at chelseye@bu.edu. All juniors and seniors are assigned a faculty advisor within their chosen speciality. Their contact information can be found on the Student Link under Advising.

Tutoring

Our department offers free tutoring for Math & Stats students in MCS B36. It is open Monday-Friday from 9am-5pm. The tutoring room is staffed by our experienced PhD students. The schedule and tutor specializations can be found on our website.

Academic Opportunities

- **Honors in the Major**: Exceptional Math & Stats students are able to apply to do independent work for distinction. Students are encouraged to apply during the junior year to complete the work during their senior year. The content requires two courses taken in consecutive semesters where the student will work on diving into a topic of their choosing along with an assigned faculty advisor. For more information or to apply for this program, please email out Director of Undergraduate Studies at kspiliop@bu.edu.

- **Directed Studies**: Directed study courses are designed to enable advanced undergraduates to pursue independent research under the guidance of a faculty member. Directed Study courses offer students the opportunity to work in a focused area and in an environment that allows for considerable individual attention. Since Directed Study courses also demand a great deal of time and energy on the part of
the faculty member, students applying should observe the following guidelines:

- Carefully choose a topic for Directed Study. Students may choose to pursue in depth an area covered more generally in a course, or to explore a topic not normally covered in the curriculum. In either case, it is the student’s responsibility to identify the topic fully and to acquire enough information to ensure its worthiness for independent research.

- Decide how much time should be devoted to the Directed Study. Unlike most courses, a Directed Study may be tailored so that the student may earn from one to six credits, depending upon the amount of time spent.

- Identify key references (books, journal articles, or other sources) pertinent to the start of the project.

- Arrange a meeting with a faculty member sponsoring your project. Review with the faculty member the necessary information for general supervision, suggestions of references, help with understanding of the readings, and/or feedback from the papers. The design of a clear, explicit plan for the completion of the course is the main purpose of this initial conference. Often, but not necessarily in every case, the work entails a major paper or a series of papers.

- Email kspiliop@bu.edu along with the sponsoring faculty member to be approved and registered for the course.
- **Putnam Mathematics Competition:** The Putnam exam this year will occur in December and is being organized by Professor Jared Weinstein. Please reach out to the front office with inquiries.

- **BA/MA Program:** Students entering the BA/MA in Mathematics program elect one of two track options: mathematics or statistics. Both options emphasize breadth of coverage of basic topics of current general importance, as opposed to narrow specialization. The objective of the program in statistics is to train general practitioners capable of making immediate contributions in industry, the medical sciences, government, or private educational and research institutions. Potential applicants must first complete at least one upper-level course (400 level or higher statistics course for the statistics option, and 500 level or higher mathematics course for the mathematics option). As part of the application, one of the letters of recommendation should be provided by the instructor of such a course.

Students in the BA/MA program must complete all the requirements for:

- the CAS BA major in mathematics
- the GRS MA degree in mathematics, which consist of a coherent program of eight graduate-level (500 or above) mathematics courses and comprehensive exams

No overlap is permitted between mathematics courses taken to satisfy the BA requirements and those taken to satisfy the MA requirements. The BA/MA program requires that students complete the CAS BA requirements (e.g., the Hub and the requirements of the mathematics major), as well as 8 additional courses at the 500 level or above for the MA which do not overlap with the courses used in
completing the major requirements. The total number of credits required for the BA and MA degree is 144 (or 36 4-credit courses). In addition, students must pass the comprehensive exams at the MA level. For more information, or to apply for the program, please email kspiliop@bu.edu.

- **Directed Reading Program (DRP):** A DRP pairs enthusiastic undergraduate Math and Stats students with graduate student mentors for an independent reading project outside the scope of their current coursework. Over the course of the semester, mentor-mentee pairs will read a mathematics text (or a portion of a text), meeting weekly to discuss and review the readings, culminating in a short presentation at the end of the semester. This is a great opportunity to learn new and interesting mathematics outside the realm of your normal coursework, in a way where your interests drive your learning experience! Please visit the website for more information: [https://www.bu.edu/math/directed-reading-program/](https://www.bu.edu/math/directed-reading-program/).

**Departmental Policies:**

- The Calculus course sequence (MA123, MA124, MA225, and MA226) must be taken in numerical order. You may not go backwards once you have taken a higher level course. If you have questions around this, please reach out to your advisor to develop a plan.
- The policy above also applies to the Statistics sequence MA213, MA214 and MA115, MA116.
- Prerequisite courses are required unless permission from the instructor is granted.
- During the Add/Drop period, section changes will not be permitted for courses listed as “Class Closed” unless there is a direct conflict with
another course here at BU. For extenuating circumstances, please reach out to the department at mathdept@math.bu.edu.

- Advising Codes are required for registration for first year and senior students. You must meet with your advisor to make sure you are on track with the major and receive your advising code.

Transfer Credits

- To check if a course is a pre-approved transfer credit, please check on this website:
  https://tes.collegesource.com/publicview/TES_publicview01.aspx?rid=f3c0908c-8809-4592-a06a-2ec9c2c3acc8&aid=adbaa968-6ce9-47a6-9b99-43d30cdd2d67. Simply click on the college or university you are planning to take the external course at, and you will see a list of pre-approved transfer credits from that institution. If your course is listed, please fill out the CAS Advising Transfer Course Pre-Screen Request Form (https://www.bu.edu/cas/cas-advising-transfer-credit-pre-approval-form/) to let BU know that you are taking the course. Once your course is completed, you are responsible for sending the transcript to BU CAS Advising.

- If your course is not pre-approved, you must send a copy of the course syllabus and a completed Transfer Credit Form to the front office. The form can be found on our website: https://www.bu.edu/biology/files/2015/08/TRANSFER-COURSE-EQUIVALENCY-FORM-July-2015.pdf. Once the form is completed and a syllabus has been obtained, please send both items to mathdept@math.bu.edu for processing. Once the course is completed, you are responsible for sending the transcript to BU CAS Advising.
Clubs and Organizations:

- **BU Mathematical Association of America Chapter (BU MAA):** Boston University Mathematical Association of America Chapter (BUMAA) aims to create a close-knit community among all students interested in mathematics, statistics, and mathematical sciences. BUMAA is part of the national MAA society dedicated to mathematics accessible at the undergraduate level. BUMAA aspires to offer a variety of academic, professional, and social events catering to the interests of BU undergraduate mathematics & statistics community. For more information, please email bumaa@bu.edu

- **BU Association of Women in Mathematics (AWM):** The primary goal of BU’s Association of Women in Mathematics (AWM) chapter is to promote the values of the AWM organization, and to promote the benefits and wonderment of mathematics through community outreach, student-led activities, and professional development. The group’s personal hope is to have fun and foster enjoyment and involvement, tapping the huge pool of expertise, creativity, and terrific people here at BU, as well as bringing back alums, inviting experts and networking globally through digital initiatives. For more information, please email yaggia@bu.edu.

- **Bu Statistics Club:** For more information, please email: bustats@bu.edu

- **BU American Statistical Association:** For more information, please email: bucsa@bu.edu

- **Math Social Club:** Math Social Club is run by the Math & Stats Department to foster community for our undergraduate students. Activities include games, mathematical discourse, and student led
presentations. This year, the club is led by Kyle Mickelson and Ryan Lee. For more information, please reach out to kylejm@bu.edu.

- **Departmental Events:** The department will regularly send out emails regarding upcoming events we will have throughout the year. Be sure to keep an eye out for emails from Chelsey Edwards!