Undergraduate Program

Start here

This page is for current and incoming Binghamton students who need the practical details of the Mathematics & Statistics majors and minor: forms, policies, and course-planning tools. For an overview of the program and tracks, see the university program page.

If you are:

- **A prospective student or still exploring whether to study Math/Statistics at Binghamton.**

Start with the program overview on the university site. To visit the department and talk with faculty, contact the department secretary.

- **Thinking about declaring, dropping, or changing a major or minor in Math/Statistics.**

Go to Section 3, **“Declare, Drop, or Change Major/Minor”**.

- **Already a Math/Statistics major or minor and planning your courses.**

Go to Section 5, **“Course Selection and Registration”**.

Need non-department help? See Harpur Advising (general advising) and Registrar (records/transcripts).

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1. Degree Options and Requirements

The Department of Mathematics and Statistics offers **seven degree options**:

- **BA** and **BS** in **Mathematical Sciences**, each with three tracks:
  - **Mathematics**
  - **Data Science and Statistics (DSS)**
  - **Actuarial Science**
- **Minor** in **Mathematics**

BA vs. BS in Mathematics

Both degrees require the same total credits—the BS simply includes more math courses. Neither is superior; they serve different goals.

- **BA:** Fewer math courses, more flexibility to explore other fields. Often the most efficient path to a double major or dual degree.
- **BS:** More upper-level and proof-oriented coursework. Designed for students aiming at graduate study in mathematics, statistics, or related fields.

> For a comprehensive and official description of all program requirements, consult the Academic Guide (BA, BS, Minor).
>
> Be sure to also review the Harpur College requirements and the grade requirements for courses and prerequisites.

2. Combining Math with Other Fields

A math degree pairs naturally with many disciplines. Common combinations include:

- **Actuarial Science + Economics:** These programs heavily overlap.
- **Mathematics + Computer Science:** A math major with a CS minor, or vice versa.

Students can also pursue a **double degree** across schools—for example, a BS in Business Administration (School of Management) with a BA in Mathematics, or a Watson School CS degree with a math degree. See Harpur's double degree information for details.

> For minors outside our department, consult that department for their requirements.

3. Declare, Drop, or Change Major/Minor

> You must be admitted to Harpur College of Arts and Sciences before declaring a major in Mathematics and Statistics.

To **declare** or **drop** a major or minor, fill in this Google Form.

BS majors: Before declaring, you must meet with a faculty member. If you haven't done so yet but need to declare now, consider declaring a BA first and switching to BS later.

To **change** from one major to another, drop the old major and declare the new one. Note that you can only hold one major from our department at a time.

4. Forms and Resources

Major and Minor

- Major/Minor Declaration, Drop, and Change Form

Course Registration

- Math 225/227 Second Half-Semester Signup Form — For registering in 225 or 227 without the 224/226 co-requisite when the stand-alone section doesn't fit your schedule.
- Prerequisite Exception Request Form
- Request to Take a Graduate Course — You must first obtain the instructor's consent, then visit the math department office for paperwork. To count a graduate course toward your major requirements, email the DUS **after** you have registered.
- Undergraduate Independent Study (Math 497) Form — Find a faculty member willing to supervise, then visit the math department office. Note that there is a limit on how many independent study credits can count toward the major.

5. Course Selection and Registration

Plan your coursework around two things: **prerequisites** (which are strictly enforced in our department) and **semester availability** (some courses are only offered in fall or spring). Missing either can delay graduation.

Advice for New Majors

Complete **Math 330** (Number Systems) as soon as possible — no later than your fourth semester. Finish **Math 304** (Linear Algebra) and **Math 323** (Calculus III) before moving to upper-level courses. Plan for about two math courses per semester and meet with your faculty advisor regularly.

For track-specific course planning, see Course Planning by Track.

Getting Into Closed Courses

If a course has a **waiting list**, add yourself to the waitlist for the section you prefer. When a seat opens, the system emails the student at the top of the list, who has **18 hours to register** from the time the email is sent (not when you open it). If you see an open seat but cannot register, it is likely reserved for someone ahead of you on the waitlist — be patient and check your email frequently. Do **not** try to switch sections while waitlisted; doing so will drop you to the bottom of the list.

If a course is closed with **no waiting list**, monitor the Schedule of Classes during open registration and self-register if a spot appears.

For additional help, contact the **math department secretaries** in Whitney Hall. Neither your instructor nor your faculty advisor can place you in a full course.

Useful Resources

- Prerequisite Dependency Infographic
- Course Planning by Track
- Sample 4-Year Plans by Track
- Unofficial course schedules for the Department of Mathematics and Statistics
- Schedule of Classes — Search for courses by term and subject (Binghamton login required)
- Academic Guide — Official course descriptions and program requirements
- Past course syllabi by semester

6. Summer and Winter Sessions

The department offers online math courses during summer and winter sessions. All courses are **synchronous** (live scheduled meetings, not self-paced). See the department course schedule for current offerings and session dates.

> **Final exams:** Some courses require an **in-person final exam on campus** in Binghamton. The department does not cover travel or lodging costs. A very limited off-campus proctoring exception may be approved in advance. Details and exception request form.
>
> Courses without an in-person final use **Zoom with LockDown Browser** for exams. No remote/virtual proctoring is available for in-person finals.

7. Information Regarding Calculus

- The Calculus Overview
- Calculus placement test
- Math 227 place-out exam
- How to register for calculus classes

- Help room schedules

More details about some important Calculus courses

- Introduction to Calculus (Math 223)
- Calculus I (Math 224/225)
- Calculus II (Math 226/227)
- Calculus III (Math 323)
- Calculus for Business and Management (Math 220)

8. Credit Transfer and Exam Credit

Exam Credit (AP / IB / CLEP)

Binghamton's policies and equivalencies are maintained by Harpur Advising:

- Advanced Placement (AP) equivalencies
- International Baccalaureate (IB)
- CLEP exam credit

Transfer Credit from Another Institution

First, check the Pre-Approved Transfer Table — select the institution and course. If your course appears with the correct BU equivalent, you typically do not need a separate petition.

If not pre-approved, get department approval **before** registering for the course:

1. Fill out the Harpur Transfer Credit Petition form and save as a PDF (not a photo/screenshot).
2. Email it to the Director of Undergraduate Studies, Prof. Vladislav Kargin (vkargin@binghamton.edu), and include:
   - Current syllabus
   - Link to the course catalog or department page
   - When you plan to take the course

- **Online asynchronous courses** are generally not approved for transfer.
- **Upper-level courses** (Math 330 and above) are rarely approved for transfer.
- **Courses from non-US institutions** are generally not approved unless part of a regular degree-granting curriculum or an approved Binghamton-affiliated program (e.g., BU study abroad). Standalone summer or winter courses abroad are not accepted.

9. Accelerated (4+1) Programs

Binghamton's 4+1 programs let qualified students earn a bachelor's + master's degree in about five years. See

Combined Degree Programs (4+1) for general eligibility and policies.

Math-related options include:

- BA/BS Mathematical Sciences → MS in Data Science and Statistics (DSS)
- Harpur/MBA 4+1 program
- BA Mathematical Sciences → MAT Mathematics (Adolescent Education)

10. Planning for Graduate School

If you are considering graduate school in mathematics, statistics, or a related field, start planning early.

Choose the right courses. Performance in **Real Analysis I and II** (Math 478/479) is widely used by admissions committees to gauge a student's potential — even for statistics and applied math programs. Beyond Real Analysis, the courses that matter most depend on the discipline you're targeting:

- **Mathematics:** The BS track is strongly recommended. Its required courses (Modern Algebra, Topology, Real Analysis) form the standard preparation.
- **Statistics or Actuarial Science:** A BA may be sufficient, but a BS or additional coursework beyond BA requirements is preferred. Do well in **Math 447** (Probability) and **Math 448** (Mathematical Statistics).
- **Data Science:** In addition to probability and statistics, consider extra coursework in computer science and computational methods.

Pursue research experience. REU (Research Experiences for Undergraduates) programs are competitive summer research opportunities funded by the NSF and hosted by universities across the country. They strengthen graduate applications significantly and give you a taste of what research is like. Most REU applications are due in **January–February** for the following summer, so start looking in the fall. Sophomores and juniors are the strongest candidates. You can also approach faculty in our department directly to ask about research projects suitable for undergraduates. See this list of REU programs for current and past opportunities.

Plan your recommendation letters. You will need letters from faculty who know your work well. Think ahead about which courses and professors will give you that opportunity — a professor who taught a course in which you earned a B or lower may decline to write, or write a letter that does not help your application.

Explore your options. Math majors pursue graduate degrees in many fields, including mathematics, statistics, actuarial science, computer science, data science, operations research, economics, finance, and management science. Talk with your faculty advisor and read about programs early in your junior year.

11. Faculty Advisors

You can get advising in several ways, depending on the question:

- **Faculty advisor (assigned when you declare the major).**
  - Every major is assigned a faculty advisor at the time of declaration.
  - Meet with your advisor to plan courses, choose electives, and discuss goals (graduate school, careers, etc.).
  - You may switch to another faculty advisor later, after you get to know the faculty.
- **Advising Liaison (especially for pre-majors / lower-division).**

- **David Biddle** (biddle@math.binghamton.edu) is the department's Coordinator of Undergraduate Advising.
- He is the primary contact for students exploring the major (not yet declared) and for majors still completing mostly lower-level coursework.

- **Director of Undergraduate Studies (DUS) — policies and exceptions.**
  - The DUS handles department decisions such as transfer-course approvals, prerequisite exceptions, and DegreeWorks exceptions.
  - Current DUS: **Prof. Vladislav Kargin** (vkargin@binghamton.edu).

12. Honors, Awards and Scholarships

We recognize students through **graduation with departmental honors** and several **annual awards/scholarships**.

- Honors Criteria and Award Descriptions
- Honors and Award Recipients by Year

13. Student Organizations and Activities

The students in the Department of Mathematics and Statistics frequently participate in the following organizations and in a wide range of activities.

- The Undergraduate Math Club and MAA student chapter
- The Association for Women in Mathematics Student Chapter
- The Data Science and Analytics Club
- The Actuarial Association
- The Binghamton Chapter of Pi Mu Epsilon, the National Mathematics Honor Society.