

Welcome to Mathematical Sciences

Major Overview:

The Mathematical Sciences Department at Binghamton University offers courses and programs in pure and applied mathematics, statistics and actuarial science. The main areas of concentration in the department are algebra, analysis, combinatorics, geometry/topology and statistics.

The department offers both a flexible curriculum that allows students to construct a course of study that aligns with their own interests and goals, as well as a more intensive theoretical curriculum designed to be especially useful for students who wish to pursue graduate study in mathematics. The department also offers tracks in actuarial sciences that provide strong preparation for an actuarial career.

Research Areas:

The Mathematics Department offers students the potential to engage in research with professors whose research interests cover a range of topics. The five main areas of research concentration are: algebra, analysis, combinatorics, geometry/topology, and statistics.

Visit the [Math Department research page](#) to find out more information about the research interests of specific professors in the department.

[<http://www2.math.binghamton.edu/p/research>]

Post-Graduation:

Students who major in mathematics gain mathematical reasoning and analytical skills that are beneficial in a broad range of careers. For example, mathematics majors can pursue careers in astronomy and space exploration, national security, film, animation, medicine (e.g. data analysis for drug trials), and software development. Mathematics majors who specialize in actuarial science commonly find employment within insurance companies, consulting firms, federal and state insurance departments, universities, banks, investment firms, large corporations, and public accounting firms.

Visit these links to learn more about potential career paths for mathematics majors:

- [American Mathematical Society](http://www.ams.org/profession/career-info/math-work/math-work) [http://www.ams.org/profession/career-info/math-work/math-work]
- [American Statistical Association](http://www.amstat.org/careers/whatdostatisticiansdo.cfm) [http://www.amstat.org/careers/whatdostatisticiansdo.cfm]
- [Be An Actuary](http://www.beanactuary.org/what/do/) [http://www.beanactuary.org/what/do/]

For more resources and information on this major, refer to:

- [Math Department](http://www2.math.binghamton.edu/p/start) [http://www2.math.binghamton.edu/p/start]
- [University Bulletin](http://bulletin.binghamton.edu/) (go to the Undergraduate Fields of Study by Department field and select Mathematical Sciences) [http://bulletin.binghamton.edu/]

For Student Organizations and social involvement options refer to:

- [Student Groups](http://binghamtonsa.org/executive-vp/current-student-groups/) [http://binghamtonsa.org/executive-vp/current-student-groups/]
- [Actuarial Association](http://www2.math.binghamton.edu/p/actuary/actuarial_association) [http://www2.math.binghamton.edu/p/actuary/actuarial_association]

Courses:

Adequate pre-calculus preparation:

MATH 223/224: Introduction to Calculus/Differential Calculus (then take MATH 225 the second semester)

or

MATH 224/225: Differential Calculus/Integral Calculus (first semester)

MATH 226/227: Integration Technique & Application/Infinite Series (second semester)

MATH 304: Linear Algebra (second semester)

***Note:** 223, 224, 225, 226, and 227 are each 2 credit courses taken for a half semester. A placement exam is given to determine which first semester track (223/224 or 224/225) students will start with.*

Adequate calculus preparation:

Math 226+227: Integration Technique & Application/Infinite Series (first semester)

***MATH 222H:** Honors Calculus (first semester)

MATH 323: Calculus III (second semester)

MATH 304: Linear Algebra (first or second semester)

MATH 330: Number Systems should be taken as early as possible, as soon as MATH 226/227 is complete.

***Honors calculus** is directed at students who already have credit for calculus 1 or calculus 2 and a strong record of performance in mathematics (like a high score on the calculus AP exam). It's appropriate for strong and mathematically curious students ready to work hard. It can be taken instead of Math 226/227.

Thank you for watching!

For more information contact the
Department of Mathematical Sciences
at:
(607) 777-2148