

MATHEMATICS (B.A.)

Bachelor of Arts Program

Program Code: BA-AS

Major Code: MAT

Mathematics Department

SAMC 159

(716) 878-5621

mathematics.buffalostate.edu/ (<http://mathematics.buffalostate.edu/>)

This program is for students passionate about mathematics. Students develop the ability to think abstractly and explore multiple facets of mathematics through courses in calculus, linear algebra, probability, statistics, abstract algebra, and real analysis. This program provides the theoretical foundation, analytical skills, and problem-solving abilities for a range of careers.

Admission Requirements

- The department strongly recommends first time freshmen and current and transfer students applying for the mathematics major with less than 30 credits to have completed three years of Regents high school mathematics plus a high school course in pre-calculus or AP Statistics.
- Transfer students and current students applying for the mathematics major with at least 30 credits are required to have completed a minimum of one semester of calculus with a minimum grade of C and have a cumulative gpa of 2.0.

Program Requirements

Code	Title	Credit Hours
General Education 23 Requirements (http://ecatalog.buffalostate.edu/undergraduate/collegewide-degree-requirements-baccalaureate-degrees/#IF_Courses)		
33 credit hours		33
Mathematics Major Requirements (42 credit hours)		
<i>Required Courses (33 credit hours)</i>		
MAT 161	CALCULUS I	4
MAT 162	CALCULUS II	4
MAT 202	INTRODUCTION TO LINEAR ALGEBRA	3
MAT 263	CALCULUS III	4
MAT 300	TECHNIQUES OF PROOF	3
MAT 301	INTRODUCTION TO GROUP THEORY	3
MAT 325	PROBABILITY AND STATISTICS	3

MAT 417	INTRODUCTION TO REAL ANALYSIS I	3
MAT 491	CAPSTONE RESEARCH IN MATHEMATICS	3
CIS 151	COMPUTER PROGRAMMING I	
or MAT 2: COMPUTATIONAL TOOLS FOR APPLIED MATHEMATICIANS I		
<i>Elective major courses (9 credit hours)</i>		
Select three from the following:		9
MAT 302	ABSTRACT ALGEBRA II	
MAT 309	COMBINATORICS	
MAT 315	DIFFERENTIAL EQUATIONS	
MAT 316	INTERMEDIATE DIFFERENTIAL EQUATIONS	
MAT 319	MATHEMATICAL BIOLOGY	
MAT 322	MODERN GEOMETRY	
MAT 351	ELEMENTARY THEORY OF NUMBERS	
MAT 370	APPLIED NETWORKS	
MAT 383	APPLIED STATISTICS I	
MAT 404	APPLICATIONS OF LINEAR ALGEBRA	
MAT 411	COMPLEX VARIABLES	
MAT 461	NUMERICAL ANALYSIS	
MAT 490	SEMINAR	
MAT 495	SPECIAL PROJECT	
MAT 499	INDEPENDENT STUDY	

All College Electives		
48 credit hours		48

Total Credit Hours		120
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- Mathematics majors (MAT) will master a rich and diverse set of mathematical ideas and techniques from across the core areas of single and multivariable calculus, discrete mathematics, linear algebra, probability, modern algebra, and real analysis and complex variables.
- Mathematics majors (MAT) will understand the nature of proof and construct well-structured and valid mathematical arguments.
- Mathematics majors (MAT) will choose appropriate mathematical approaches for analyzing new situations and solving multi-step and open-ended problems, including the use of appropriate technology.
- Mathematics majors (MAT) will communicate mathematical ideas and results, both orally and in writing, with clarity and precision.