

# MATHEMATICS (B.A.)

BA-NS MAT

## Mathematics Department Bachelor of Arts (HEGIS 1701)

Buckham A238  
(716) 878-5621

Pure mathematics studies the basic concepts and structures that underlie all of mathematics. Traditionally, pure mathematics has been classified into two general fields: analysis and algebra. Analysis deals with the continuous aspects of mathematics and algebra is concerned with sets of objects and operations on these objects. Our undergraduate program is designed so that students will become familiar with each of these fields. Students may also explore other topics such as logic, number theory, and subjects within applied mathematics.

### Admission Requirements

High school mathematics through Algebra 2 / Trigonometry Regents is recommended.

### Program Requirements

Code	Title	Credit Hours
Intellectual Foundations Requirements ( <a href="http://ecatalog.buffalostate.edu/undergraduate/collegewide-degree-requirements-baccalaureate-degrees/#IF_Courses">http://ecatalog.buffalostate.edu/undergraduate/collegewide-degree-requirements-baccalaureate-degrees/#IF_Courses</a> )		
30-36 credit hours		30-36
<b>Mathematics Major Requirements (51 credit hours)</b>		
<i>Required Courses (39 credit hours)</i>		
MAT 161	CALCULUS I	4
MAT 162	CALCULUS II	4
MAT 163	USING TECHNOLOGY TO EXPLORE CALCULUS I	1
MAT 164	USING TECHNOLOGY TO EXPLORE CALCULUS II	1
MAT 202	INTRODUCTION TO LINEAR ALGEBRA	3
MAT 263	CALCULUS III	4
MAT 264	USING TECHNOLOGY TO EXPLORE CALCULUS III	1
MAT 270	DISCRETE MATHEMATICS	3
MAT 300	TECHNIQUES OF PROOF	3
MAT 301	FUNDAMENTALS OF ABSTRACT ALGEBRA	3
MAT 381	PROBABILITY THEORY	3

MAT 411	COMPLEX VARIABLES	3
MAT 417	INTRODUCTION TO REAL ANALYSIS I	3
MAT 491	CAPSTONE RESEARCH IN MATHEMATICS	3
<i>Electives Selected by Advisement (12 credit hours)</i>		
Select four from the following:		12
MAT 302	ABSTRACT ALGEBRA II	
MAT 309	DISCRETE MATHEMATICS II	
MAT 315	DIFFERENTIAL EQUATIONS	
MAT 316	INTERMEDIATE DIFFERENTIAL EQUATIONS	
MAT 351	ELEMENTARY THEORY OF NUMBERS	
MAT 370	APPLIED NETWORKS	
MAT 382	MATHEMATICAL STATISTICS	
MAT 383	APPLIED STATISTICS I	
MAT 401	INTRODUCTION TO COMPUTABILITY	
MAT 404	APPLICATIONS OF LINEAR ALGEBRA	
MAT 418	INTRODUCTION TO REAL ANALYSIS II	
MAT 430	SET THEORY	
MAT 431	MATHEMATICAL LOGIC	
MAT 461	NUMERICAL ANALYSIS	
MAT 471	INTRODUCTION TO TOPOLOGY	
MAT 481	STOCHASTIC PROCESSES	
MAT 484	APPLIED STATISTICS II	
MAT 490	SEMINAR	
MAT 495	SPECIAL PROJECT	
MAT 499	INDEPENDENT STUDY	

### All College Electives

33-38	33-38
Total Credit Hours	120