MATHEMATICS, B.S.

Mathematics is an excellent major for the student whose immediate objective is to acquire a strong liberal arts education. Graduates may go on to work as an actuary with insurance companies; as a data analyst with pharmaceutical, biotechnology, or health care companies; as a quality assurance specialist with engineering companies; or in government agencies such as FDA, EPA, NSA, or USDA.

The B.S. program is more technically oriented than the B.A. program. It provides solid preparation for work or study in mathematics or a related field. Students wanting to go to graduate school are encouraged to consider the Accelerated Master's Program (AMP) (p.) to earn a B.S. and M.A. in 5 years. Strong students can graduate with Disciplinary Honors (p. 2).

An undergraduate degree in mathematics also provides excellent preparation for graduate studies in many areas, including actuarial sciences, computer science, economics, engineering, law, mathematics, operations research, and statistics. The major can be specialized to allow preparation for any of these goals.

Overall Requirements

- 120 credit hours, to include at least 36 credits at or above the 300 course level.
- Students planning to pursue graduate study should contact their advisor as soon as possible to prepare a plan of study.
- A minimum grade of C (2.0) is required for all CSC, MAT, and STA courses to count towards the major core and the concentration.

Degree Program Requirements

Code	Title	Credit Hours
University Requirements (https://catalog.uncg.edu/academic-regulations-policies/undergraduate-requirements/undergraduate-degrees-and-degree-requirements/)		
General Education Requirements (MAC) (https://catalog.uncg.edu/academic-regulations-policies/undergraduate-requirements/general-education-program/#generaleducationcorerequirementstext)		
College of Arts and Sciences Additional Requirements (CIC) (https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirementstext)		

Major Requirements

Code	Title	Credit Hours
Calculus Sequence		**12**
Select one of the following calculus sequences: [*]		
MAT 196	Calculus A	
& MAT 296	and Calculus B	
& MAT 396	and Calculus C	
or MAT 191	Calculus I	
& MAT 292	and Calculus II	
& MAT 293	and Calculus III	
& MAT 394	and Calculus IV	
Core Courses		**21**
MAT 253	Discrete Mathematical Structures	
MAT 310	Elementary Linear Algebra	
MAT 311	Introduction to Abstract Algebra	
MAT 390	Ordinary Differential Equations	
MAT 395	Introduction to Mathematical Analysis	
MAT 490	Senior Seminar in Mathematics	
STA 290	Introduction to Probability and Statistical Inference	
Programming Course		**3**
CSC 120	Introduction to Computer Programming for Non-Majors	
or CSC 130	Introduction to Computer Science	
or CSC 230	Elementary Data Structures and Algorithms	
Mathematical Sciences Courses		**9**
Select three of the following:		
MAT or STA courses at the 300 or 400 level		
CSC 427	Numerical Analysis and Computing	
CSC 452	Theory of Computation	
CSC 454	Algorithm Analysis / Design	
Advanced Mathematics Courses		**6**
Select two MAT courses at the 400 level		
Interdisciplinary Courses [**]		**6 or 8**
Select one of the following fields of study:		
Biology		
BIO 111 & 111L	Principles of Biology I and Principles of Biology I Laboratory	
BIO 112 & 112L	Principles of Biology II and Principles of Biology II Laboratory	
Chemistry		
CHE 111 & CHE 112	General Chemistry I and General Chemistry I Laboratory	
CHE 114 & CHE 115	General Chemistry II and General Chemistry II Laboratory	
Computer Science		
CSC 220	Elementary Data Structures-A Transition	
or CSC 230	Elementary Data Structures and Algorithms	
CSC 330	Advanced Data Structures	
Economics		
ECO 201	Principles of Microeconomics	
ECO 202	Principles of Macroeconomics	
Education		
Select two of the following:		
TED 222	Mathematics for Teaching	
TED 223	Mathematics for Teaching Middle Grades	
TED 535	Literacy in the Content Area	
TED 545	Human Diversity, Teaching, and Learning	
Physics		
PHY 291 & 291L	General Physics I with Calculus and General Physics I with Calculus Lab	
PHY 292 & 292L	General Physics II with Calculus and General Physics II with Calculus Lab	

* *If you need to take a combination of courses from both sequences contact your advisor.*

** *Students select a field of study and take 6 or 8 hours of specified coursework.*

Electives

Electives sufficient to complete the 120 credit hours required for degree.

Disciplinary Honors in Mathematics

Requirements

- A minimum of 12 credit hours as detailed below.
- UNC Greensboro cumulative GPA of 3.30 or better or, for transfer students, cumulative GPA of 3.30 or better from all prior institutions.
- A grade of B or higher in all course work used to satisfy the Honors requirement in Mathematics

Code	Title	Credit Hours
Required		**6-9**
MAT 493	Honors Work *	
HSS 490	Senior Honors Project	
Select two courses from the following:		**6**
MAT 310	Elementary Linear Algebra	
MAT 311	Introduction to Abstract Algebra	
MAT 390	Ordinary Differential Equations	
MAT 395	Introduction to Mathematical Analysis	

* *To be taken before* HSS 490

Recognition

Receive a Certificate of Disciplinary Honors in Mathematics; have that accomplishment, along with the title of the Senior Honors Project, noted on the official transcript; and be recognized at a banquet held at the end of the spring semester.

Honors Advisor

Contact Richard Fabiano at fabiano@uncg.edu for further information and guidance about Honors in Mathematics.

To apply: https://honorscollege.uncg.edu/lloyd-international-honors-college/academics/admissions-scholarships/disciplinary-honors-admissons/.

Application and Admission

Qualified UNC Greensboro undergraduate students who are pursuing the B.A. in Mathematics, the B.S. in Mathematics, or the B.S. in Statistics may be nominated to participate in the Accelerated Master's Program (AMP) by the Graduate Program Director. Students must have completed a minimum of 60 credit hours with at least 30 credits and a cumulative undergraduate GPA of at least 3.5 at UNC Greensboro.

Courses

Admitted students may apply up to 12 credits of graduate-level course work toward completion of both the undergraduate and graduate degree, provided that they earn a grade of B (3.0) or better in the course and fulfill graduate-level requirements. The graduate courses the student will take within the Accelerated Master's Program in Applied Statistics must be approved by the Graduate Program Director, must be specified on the Accelerated Master's Program request, and must be selected from the following list.

Code	Title	Credit Hours
STA 602	Statistical Methods for Data Analytics	3
STA 606	Solving Problems with Data Analytics	3
STA 631	Introduction to Probability	3
STA 632	Introduction to Mathematical Statistics	3
STA 642	Statistical Computing	3
STA 670	Categorical Data Analysis	3

Please consult with your undergraduate advisor to determine how the courses taken at the graduate level will meet requirements in the bachelor's degree program. All requirements for the M.S. in Applied Statistics remain the same.