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.A. program is more flexible than the B.S. program. It allows one to specialize in mathematics and at the same time either to follow a broad liberal arts program or to specialize in a second area (possibly even taking a second major). Students wanting to go to graduate school are encouraged to consider the Accelerated Degree Program (ADP) (https://catalog.uncg.edu/arts-sciences/mathematics-statistics/mathematics-bs/#acceleratedbaorbstomatext) to earn a B.A. and M.A. in 5 years. Strong students can graduate with Disciplinary Honors (p. )

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
- A minimum grade of C (2.0) is required for all CSC, MAT, and STA courses to count towards the major core and the concentrations

### Degree Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Requirements (<a href="https://catalog.uncg.edu/academic-regulations-policies/undergraduate-requirements/undergraduate-degrees-and-degree-requirements/">https://catalog.uncg.edu/academic-regulations-policies/undergraduate-requirements/undergraduate-degrees-and-degree-requirements/</a>)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Education Requirements (MAC) (<a href="https://catalog.uncg.edu/academic-regulations-policies/undergraduate-requirements/general-education-program/#generaleducationcorerequirementstext">https://catalog.uncg.edu/academic-regulations-policies/undergraduate-requirements/general-education-program/#generaleducationcorerequirementstext</a>)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>College of Arts and Sciences Additional Requirements (CIC) (<a href="https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirementstext">https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirementstext</a>)</td>
<td></td>
</tr>
</tbody>
</table>

### Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 310</td>
<td>Elementary Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 490</td>
<td>Senior Seminar in Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>STA 290</td>
<td>Introduction to Probability and Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Calculus Sequence</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one of the two calculus sequences below:*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Four three-credit hour courses</td>
<td></td>
</tr>
</tbody>
</table>

**Concentrations**

Select one of the concentrations as detailed following the major requirements.
- General Mathematics
- Health Informatics
- Statistics

**Electives**

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

#### General Mathematics Concentration Requirements
- 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 120</td>
<td>Introduction to Computer Programming for Non-Majors</td>
<td>3</td>
</tr>
<tr>
<td>CSC 130</td>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CSC 230</td>
<td>Elementary Data Structures and Algorithms</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Additional Mathematics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 253</td>
<td>Discrete Mathematical Structures</td>
<td>3</td>
</tr>
<tr>
<td>MAT 311</td>
<td>Introduction to Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 390</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MAT 395</td>
<td>Introduction to Mathematical Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Advanced Mathematics Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 406</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 465</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Health Informatics Concentration Requirements
- 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA 301</td>
<td>Statistical Methods</td>
<td>13</td>
</tr>
</tbody>
</table>

* If you need to take a combination of courses from both sequences contact your advisor.
Advanced Mathematics Courses 3

Select one of the following:

MAT 427 Numerical Methods
MAT 451 Topological Data Analysis
STA 442 Statistical Computing
STA 465 Analysis of Survival Data
STA 481 Introduction to Design of Experiments

Computing Courses 12

Select one of the following:

CSC 330 Advanced Data Structures
CSC 120 Introduction to Computer Programming for Non-Majors
& CSC 220 and Elementary Data Structures-A Transition
CSC 130 Introduction to Computer Science
& CSC 230 and Elementary Data Structures and Algorithms

Health Sciences Courses 15

BIO 111 Principles of Biology I
& 111L and Principles of Biology I Laboratory
CHE 111 General Chemistry I
& CHE 112 and General Chemistry I Laboratory
CHE 114 General Chemistry II
& CHE 115 and General Chemistry II Laboratory
HEA 308 Introduction to Public Health

Statistics Concentration Requirements

- 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

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 493</td>
<td>Honors Work *</td>
<td>6-9</td>
</tr>
<tr>
<td>HSS 490</td>
<td>Senior Honors Project</td>
<td></td>
</tr>
</tbody>
</table>

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: http://honorscollege.uncg.edu/forms/disc-application.pdf

Accelerated B.A. or B.S. to M.A. in Mathematics

Application and Admission

Qualified UNC Greensboro undergraduate students who are pursuing the B.A. or B.S. in Mathematics may apply for admission to the Accelerated Master’s Program (AMP) and the M.A. in Mathematics program. A cumulative undergraduate GPA of at least 3.5 based on at least 30 credits earned at UNC Greensboro is required. Applicants must have completed at least 60 credits and may not apply for admission to the AMP before the first semester of the junior year. All applicants must submit the Accelerated Master’s Program information when applying for admission to the M.A. in Mathematics, submitting all application materials excluding GRE scores.

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 Mathematics must be approved by the Graduate Program Director and selected from the following:*
Mathematics, B.A.

**Code** | **Title** | **Credit Hours**
--- | --- | ---
MAT 627 | Numerical Methods | 3
MAT 630 | Computational Discrete Mathematics | 3
MAT 653 | Foundations of Mathematical Data Science | 3
MAT 695 | Mathematical Analysis | 3
STA 631 | Introduction to Probability | 3

* Or other 600-level MAT courses with the Graduate Program Director’s approval. Excluding MAT 601 Seminar in the Teaching of Mathematics I, MAT 602 Seminar in Mathematical Software, and MAT 603 Practicum in the Teaching of Mathematics.

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.A. in Mathematics remain the same.

**Application and Admission**

Qualified UNC Greensboro undergraduate students who are pursuing the B.A. or B.S. in Mathematics may apply for admission to the Accelerated Master’s Program (AMP) and the M.S. in Applied Statistics program. A cumulative undergraduate GPA of at least 3.5 based on at least 30 credits earned at UNC Greensboro is required. Applicants must have completed at least 60 credits and may not apply for admission to the AMP before the first semester of the junior year. All applicants must submit the Accelerated Master’s Program information when applying for admission to the M.S. in Applied Statistics.

**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

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.