MATHEMATICS, B.S.

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

Degree Program Requirements

University Requirements
University Requirements (https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies)

General Education Core Requirements (GEC)
General Education Core Requirements (GEC) (https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies/general-education-program/#generaleducationcorerequirementstext)

College of Arts and Sciences Additional Requirements
College of Arts and Sciences Additional Requirements (LEC) (https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirements)  

Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Courses</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>MAT 191</td>
<td>Calculus I †</td>
<td></td>
</tr>
<tr>
<td>MAT 292</td>
<td>Calculus II</td>
<td></td>
</tr>
<tr>
<td>MAT 293</td>
<td>Calculus III</td>
<td></td>
</tr>
<tr>
<td>MAT 310</td>
<td>Elementary Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MAT 394</td>
<td>Calculus IV</td>
<td></td>
</tr>
<tr>
<td>MAT 490</td>
<td>Senior Seminar in Mathematics</td>
<td></td>
</tr>
<tr>
<td>STA 290</td>
<td>Introduction to Probability and Statistical Inference</td>
<td></td>
</tr>
</tbody>
</table>

† Counts toward GEC GMT requirement.

Mathematics Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>MAT 253</td>
<td>Discrete Mathematical Structures</td>
<td></td>
</tr>
<tr>
<td>MAT 311</td>
<td>Introduction to Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>MAT 390</td>
<td>Ordinary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MAT 395</td>
<td>Introduction to Mathematical Analysis</td>
<td></td>
</tr>
</tbody>
</table>

Select 3
Select one of the following:
MAT 522 Introductory Functional Analysis
MAT 525 Intermediate Mathematical Analysis
MAT 540 Introductory Complex Analysis

Select 3
Select one of the following:
MAT 514 Theory of Numbers
MAT 515 Numerical Analysis and Computing
MAT 516 Intermediate Abstract Algebra
MAT 519 Intuitive Concepts in Topology

Statistics Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>CSC 130</td>
<td>Introduction to Computer Science</td>
<td></td>
</tr>
<tr>
<td>CSC 230</td>
<td>Elementary Data Structures and Algorithms</td>
<td></td>
</tr>
<tr>
<td>STA 301</td>
<td>Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>STA 352</td>
<td>Statistical Inference</td>
<td></td>
</tr>
</tbody>
</table>

Select 6
Select three additional STA courses at the 300 level or above.

Additional STA Courses

Select 6
Select two courses from the following:
MAT 523 Numerical Analysis and Computing
MAT 524 Numerical Analysis and Computing
MAT 526 Bioinformatics
MAT 253 Discrete Mathematical Structures
MAT 311 Introduction to Abstract Algebra
MAT 353 Introduction to Discrete Mathematics
MAT 390 Ordinary Differential Equations
MAT 395 Introduction to Mathematical Analysis
MAT 531 Combinatorial Analysis

The following courses are not eligible:
- MAT 303 Topics in Mathematics
- MAT 304 Introduction to the Foundations of Geometry
- MAT 503 Problem Solving in Mathematics
- MAT 504 Foundations of Geometry for Teachers
- MAT 505 Foundations of Mathematics for Teachers
- MAT 513 Historical Development of Mathematics
MAT 541  Stochastic Processes
MAT 542  Stochastic Processes
MAT 586  Financial Mathematics for Actuaries

Recommended 3  6
ISM 218  Database Systems
ENG 327  Writing for Professionals and Entrepreneurs

1 One of the courses must be at the 500 level.
2 Or any STA course at the 300 level or above.
3 The department also recommends these courses and course work in an area of application beyond the GEC requirements (e.g., Biology, Psychology, etc.)
† Counts toward GEC GMT requirement.

Electives
Electives sufficient to complete the 122 credit hours required for degree.

Mathematics as a Second Major
Requirements for a Second Major in Mathematics are the same as for the Mathematics Major (B.A. or B.S. degree).

Accelerated B.A. to B.S. to M.A.
Application and Admission
Qualified UNCG undergraduate students who are pursuing the B.A. or B.S. in Mathematics may apply for admission to the Accelerated Degree and the M.A. in Mathematics program. A cumulative undergraduate GPA of at least 3.5 based on at least 30 hours earned at UNCG is required. Applicants must have completed at least 60 semester credits and may not apply for admission to the ADP before the first semester of the junior year. Applicants are also required to take the Graduate Record Examination. All applicants must submit the Request for Accelerated Degree Program to the Graduate School and must simultaneously apply for admission to the M.A. program in Mathematics.

Admitted students may apply up to 12 semester hours of graduate-level coursework 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 Degree Program in Mathematics must be approved by the Director of Graduate Study, must be specified on the Request for Accelerated Degree Program, and must be chosen from among the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 595</td>
<td>Mathematical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MAT 596</td>
<td>Mathematical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STA 551</td>
<td>Introduction to Probability</td>
<td>3</td>
</tr>
<tr>
<td>STA 552</td>
<td>Introduction to Mathematical Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STA 661</td>
<td>Advanced Statistics in the Behavioral and Biological Sciences I</td>
<td>3</td>
</tr>
<tr>
<td>STA 662</td>
<td>Advanced Statistics in the Behavioral and Biological Sciences II</td>
<td>3</td>
</tr>
</tbody>
</table>

Degree Program Requirements
Please consult with an advisor to determine how the courses taken at the graduate level will meet requirements in the bachelor’s degree program.

All degree requirements for the M.A. in Mathematics will remain the same.