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

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 (CAR) (https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirementstext)

Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 191</td>
<td>Calculus I †</td>
<td>3</td>
</tr>
<tr>
<td>MAT 292</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MAT 293</td>
<td>Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MAT 310</td>
<td>Elementary Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 394</td>
<td>Calculus IV</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>
</tbody>
</table>

† Counts toward GEC GMT requirement.

Statistics Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 130</td>
<td>Introduction to Computer Science or CSC 230 Elementary Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>STA 301</td>
<td>Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>STA 352</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional STA Courses
- Select three additional STA courses at the 300 level or above.
- Select two courses from the following:
  - CSC 523 Numerical Analysis and Computing
  - CSC 524 Numerical Analysis and Computing
  - CSC 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

MAT 516 Intermediate Abstract Algebra
MAT 519 Intuitive Concepts in Topology

Select
- 9
- 6

Select three additional courses of the following or any MAT course 300 level or above:
- CSC 523 Numerical Analysis and Computing
- CSC 524 Numerical Analysis and Computing
- CSC 553 Theory of Computation
- CSC 555 Algorithm Analysis and Design

Select
- 8
- 6

Select one option from the following:

- Physics Option:
  - PHY 291 General Physics I with Calculus
  - PHY 292 General Physics II with Calculus

- Chemistry Option:
  - CHE 111 General Chemistry I
  - CHE 112 General Chemistry I Laboratory
  - CHE 114 General Chemistry II
  - CHE 115 General Chemistry II Laboratory

- Biology Option:
  - BIO 111 Principles of Biology I
  - BIO 111L Principles of Biology I Laboratory
  - BIO 112 Principles of Biology II
  - BIO 112L Principles of Biology II Laboratory

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

Mathematics Concentration Requirements

<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>

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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 541</td>
<td>Stochastic Processes</td>
</tr>
<tr>
<td>MAT 542</td>
<td>Stochastic Processes</td>
</tr>
<tr>
<td>MAT 586</td>
<td>Financial Mathematics for Actuaries</td>
</tr>
</tbody>
</table>

**Recommended**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISM 218</td>
<td>Database Systems</td>
</tr>
<tr>
<td>ENG 327</td>
<td>Writing for Professionals and Entrepreneurs</td>
</tr>
</tbody>
</table>

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).