**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

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

#### Core Courses
- MAT 191 Calculus I †
- MAT 292 Calculus II
- MAT 293 Calculus III
- MAT 310 Elementary Linear Algebra
- MAT 394 Calculus IV
- MAT 490 Senior Seminar in Mathematics
- STA 290 Introduction to Probability and Statistical Inference
- Counts toward GEC GMT requirement.

#### Mathematics Concentration Requirements

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

Select

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

Select

Select one of the following:
- MAT 514 Theory of Numbers

#### Statistics Concentration Requirements

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

Select

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

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

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

- 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

Select

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