B. S. Mathematics (MAT)  
**College: Arts & Sciences**  
Option 1: General Mathematics or Option 2: Applied Mathematics  

Course requirements for all UNCW degrees include: (1) University Studies, (2) specific major requirements, and (3) sufficient elective hours for a combined total of a minimum of 120 hours.

### MAJOR REQUIREMENTS - MAT (Minimum 57 hours)

**Core Courses:** (36 hours)
- **+MAT 161** Calculus with Analytical Geometry I (4) Prerequisite: MAT 112 or 115 or equivalent preparation
- **MAT 162** Calculus with Analytical Geometry II (4) Prerequisite: MAT 161
- **+MAT 261** Multivariate Calculus (4) Prerequisite: MAT 162
- **MAT 275** Axiomatic Systems (3) Prerequisite: MAT 152 or 161
- **MAT 311** Intermediate Analysis (3) Prerequisites: MAT 261 and 275
- **MAT 335** Linear Algebra and Matrices (3) Prerequisite: MAT 162
- **MAT 336** Abstract Algebra (3) Prerequisite: MAT 275 and MAT 335
- **MAT 361** Differential Equations (3) Prerequisite: MAT 261
- **MAT 365** Vector Calculus (3) Prerequisite: MAT 261 and 335
- **Option 1:** Mathematics (21 hours)
  - **MAT 375** Combinatorics (3) Prerequisite: MAT 275 or CSC 133
  - **MAT 436** Abstract Algebra II (3) Prerequisite: MAT 336
  - **MAT 411** Real Analysis I (3) Prerequisite: MAT 311 and MAT 335.

Choose 12 additional hours in the Dept. of Math and Statistics at the 300-400 level, at least 6 hours in Math. Suggested courses for a pure mathematics concentration for those planning to attend a graduate program in mathematics: MAT 321, MAT 415, and MAT 451

### Option 2: Applied Mathematics: (21 hours)
- **MAT 301** Introduction to Math Modeling (3) Prerequisite: MAT 162
- **MAT 325** Computational Mathematics (3) Prerequisite: MAT 162
- **MAT 365** Vector Calculus (3) Prerequisite: MAT 261 and 335

Choose 12 additional hours in the Dept. of Mathematics and Statistics at the 300-400 level at least 6 hours in mathematics.  
Suggested concentrations:
- __MAT ____  **Actuarial Science**: MAT 381, 468, STT 412  
- __MAT ____  **Biomathematics**: MAT 463, MAT 467, BIO 366  
- __MAT ____  **Mathematical Physics**: MAT 367, 415, 418, PHY 201  
- __MAT ____  **Optimization**: MAT 375, 376, 465  
- __MAT ____  **Probability and Statistics**: MAT 465, STT 350, 411, 412  

Students interested in the degree program in MAT are encouraged to begin with MAT 161. Initial placement is based on high school background and the MAT Placement Test. Students not prepared for MAT 161 should begin with MAT 115 or 111-112, as appropriate.

**NOTE:** It is strongly recommended that a student either complete a minor in a discipline that applies mathematics or elect advanced coursework involving mathematical applications in another discipline. A list of recommended courses in biology, chemistry, computer science, economics, geography and geology, information systems and operations management, and physics. For the teacher licensure option, the licensure requirements fulfill this recommendation. A student who plans to pursue graduate study in mathematics is urged to take MAT 411-412.

**NOTE:** MAT 495 (Seminar in Mathematics) or MAT 499 (Honors Work in Mathematics) meet the Applied Learning and Oral Communication Requirement.

An overall average of “C” (2.00) or better is required with no grade lower than a “C-” is required for all 300-400 level MAT or STT courses counted toward the major.

*These courses require a lab  
+May also be used to satisfy University Studies Foundations & Approaches and Perspectives requirements  

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**Requirements to declare MAT:** Completion of 24 hours. For further information, see the MAT website: [http://www.uncw.edu/math](http://www.uncw.edu/math)  
This document is considered an unofficial guide. Please refer to your degree audit for the latest updates.