# APPLIED MATHEMATICS, B.S.

## Requirements for a Major in Applied Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 1321</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 1322</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 2311</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MTH 2321</td>
<td>Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>MTH 3300</td>
<td>Foundations of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>STA 3381</td>
<td>Probability and Statistics</td>
<td>3</td>
</tr>
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One of the following:

- MTH 3312 Foundations of Combinatorics and Algebra
- MTH 3323 Introduction to Analysis
- MTH 4314 Abstract Algebra
- MTH 4326 Advanced Calculus I

Nine semester hours from one of the following groups: 9

### Statistical

- STA 4382 Intermediate Statistical Methods
- STA 4385 Mathematical Statistics I
- STA 4386 Mathematical Statistics II
- STA 4387 Introduction to Probability Models

### Differential

- MTH 3325 Ordinary Differential Equations
- MTH 3326 Partial Differential Equations
- MTH 4329 Theory of Functions of a Complex Variable

### Numerical

- MTH 3324 Numerical Methods
- MTH 4322 Numerical Analysis
- MTH 4328 Numerical Linear Algebra

Nine semester hours of 3000-4000 level MTH or STA courses 9

A grade of "C" or better in thirty-nine hours of MTH and STA courses used for the major.

Subtotal 39

## Required Courses in Other Fields

Eight semester hours of science courses with appropriate labs (with no more than 4 hours of GEO) selected from the following: 8

- CSI 1401 Introduction to Programming I
- or CSI 1430 Introduction to Computer Science I with Laboratory
- or STA 2450 Introduction to Computing for the Mathematical and Statistical Sciences

- CSI 1402 Introduction to Programming II
- or CSI 1440 Introduction to Computer Science II with Laboratory
- or STA 4330 SAS Programming for Statistical Science
- or STA 4350 Statistical Machine Learning
- or STA 4373 Computational Methods in Statistics

### Biological Sciences

- BIO 1305 & BIO 1105 Modern Concepts of Bioscience and Modern Concepts of Bioscience Laboratory
- BIO 1306 & BIO 1106 Modern Concepts of Bioscience, continued and Modern Concepts of Bioscience Laboratory
- CHE 1301 & CHE 1101 Basic Principles of Modern Chemistry I and General Chemistry Laboratory I
- CHE 1302 & CHE 1102 Basic Principles of Modern Chemistry II and General Chemistry Laboratory II
- ENV 1301 & ENV 1101 Exploring Environmental Issues and An Introduction to Environmental Analysis (Lab)
- GEO 1306 & GEO 1106 The Earth Through Time and The Earth Through Time, Laboratory
- or GEO 1307 & GEO 1106 Evolution and Extinction and The Earth Through Time, Laboratory
- GEO 1401 Earthquakes and Other Natural Disasters
- GEO 1402 World Oceans
- GEO 1403 Environmental Geology
- GEO 1405 The Dynamic Earth
- GEO 1408 Earth Science
- NSC 1306 & NSC 1106 Introduction to Neuroscience and Introduction to Neuroscience Laboratory
- PHY 1420 General Physics I
- PHY 1430 General Physics II

Total Hours 55

1 A student applying for medical school is recommended to select Statistical and take MTH 3325 Ordinary Differential Equations as a 3000-level course.