# Bachelor of Science in Mathematics

## General Education Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1550</td>
<td>Writing 1</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1551</td>
<td>Writing 2</td>
<td>3</td>
</tr>
<tr>
<td>CMST 1545</td>
<td>Communication Foundations</td>
<td>3</td>
</tr>
</tbody>
</table>

## Core Competencies

- Arts and Humanities: 6
- Natural Science: 7
- Social Science: 6
- Social and Personal Awareness: 6
- First-Year Experience Course: 3

## Mathematics Requirement

### Arts and Humanities: 6
### Natural Science: 7
### Social Science: 6
### Social and Personal Awareness: 6
### First-Year Experience Course: 3

## Major Requirements

### Core Courses
- Foreign Language 1550: 4
- Foreign Language 2600: 4
- MATH 1571: Calculus 1: 4
- MATH 1572: Calculus 2: 4
- MATH 2673: Calculus 3: 4
- MATH 3715: Discrete Mathematics: 3
- MATH 3720: Linear Algebra and Matrix Theory: 3
- MATH 3721: Abstract Algebra 1: 3
- MATH 3751: Real Analysis 1: 3
- STAT 3743: Probability and Statistics: 3
- CSIS 2610: Programming and Problem-Solving: 3

### Select one of the following: 2
- MATH 4896: Senior Undergraduate Research Project
- MATH 4897H: Thesis
- STEM 4890: STEM Internship

Select two 3700-level MATH courses: 6
Select two 4800-level MATH courses: 6
Minor Courses: 18
Select any discipline: 9
Select three upper division electives: 9

### Total Semester Hours: 120

Suggested minors include biology, chemistry, computer science, economics, geology, physics, psychology, one engineering specialty (from chemical, civil, electrical, industrial, mechanical), or statistics. The total number of required semester hours of credit in mathematics (excluding statistics courses) for this track is 40.

## Year 1

### Fall
- MATH 1571: Calculus 1: 4
- ENGL 1550: Writing 1: 3
- GER domain (AH): 3
- GER domain (SS): 3
- Foreign Language 1550: 4

### Spring
- MATH 1572: Calculus 2 (Prerequisite): 4
- CSIS 2610: Programming and Problem-Solving: 4

### Total Semester Hours: 17

## Year 2

### Fall
- MATH 2673: Calculus 3 (Prerequisite): 4
- MATH 3715: Discrete Mathematics (Prerequisite): 3
- Minor Course: 3
- GER domain (NS with lab): 4
- GER domain (AH): 3

### Spring
- MATH 3720: Linear Algebra and Matrix Theory (Prerequisite): 3
- STAT 3743: Probability and Statistics (Prerequisite): 4
- Minor Course: 3
- CMST 1545: Communication Foundations: 3
- GER domain (SS): 3

### Total Semester Hours: 16

## Year 3

### Fall
- MATH 3721: Abstract Algebra 1 (Prerequisite): 4
- Minor Course: 3
- GER domain (SP): 3
- GER domain (NS): 3

### Spring
- MATH 3751: Real Analysis 1 (Prerequisite): 4
- MATH Elective (Upper Division): 3
- Minor Course (Upper Division): 3
- GER domain (SP): 3
- GER domain (AH, NS, SS, SP): 3

### Total Semester Hours: 13

## Year 4

### Fall
- MATH 4896: Senior Undergraduate Research Project (Prerequisite): 2
- MATH Elective (Upper Division): 3
- Minor Course (Upper Division): 3
- Elective (Upper Division): 3

### Spring
- MATH elective (4800 level or higher): 3
- MATH elective (4800 level or higher): 3
- Minor Course (Upper division): 3
- Elective (Upper Division): 3

### Total Semester Hours: 12

### Total Semester Hours: 120

## Learning Outcomes

The student learning outcomes for a BS in mathematics are as follows:

- Students will develop and demonstrate the ability to reason mathematically by constructing mathematical proofs and recognizing and accurately analyzing numerical data in all core courses. Students will learn that truth in mathematics is verified by careful argument, and will
demonstrate the ability to make conjectures and form hypotheses, test the accuracy of their work, and effectively solve problems.

- Students will learn to identify fundamental concepts of mathematics as applied to science and other areas of mathematics, and to interconnect the roles of pure and applied mathematics.
- Students will demonstrate that they can communicate mathematical ideas effectively by completing a senior capstone project involving an investigative mathematical project and presenting their findings and results in both a written format and as an oral presentation to faculty and other students.