Mathematics - Mathematics Emphasis, B.S.

Requirements
Total Program Credits: 120

Matriculation Requirements:
1. Completion of MATH 1210 and MATH 1220 (or equivalent) with an overall GPA of 2.5 or better
2. Student must meet with the Math Department advisor and declare an intent to major in Mathematics

General Education Requirements: 38 Credits
ENGL 1010 Introduction to Writing 3
ENGL 2010 Intermediate Writing--Humanities/Social Sciences 3
ENGL 2020 Intermediate Writing--Science and Technology (3.0)
MATH 1050 College Algebra 4
or MATH 1055 College Algebra with Preliminaries (5.0)
Complete one of the following: 3
HIST 2700 US History to 1877 (3.0)
and HIST 2710 US History since 1877 (3.0)
HIST 1700 American Civilization (3.0)
HIST 1740 US Economic History (3.0)
POLS 1000 American Heritage (3.0)
POLS 1100 American National Government (3.0)
Complete the following:
PHIL 2050 Ethics and Values 3
HLTH 1100 Personal Health and Wellness (2.0)
or PES 1097 Fitness for Life 2

Distribution Courses
Biology 3
PHYS 2210 Physics for Scientists and Engineers I 4
PHYS 2215 Physics for Scientists and Engineers I Lab 1
PHYS 2220 Physics for Scientists and Engineers II (4.0)
and PHYS 2225 Physics for Scientists and Engineers II Lab (1.0)
or One other Biology or Physical Science Distribution (Required for Actuarial Science Emphasis) 3

Humanities Distribution 3
Fine Arts Distribution 3
Social/Behavioral Science 3

Discipline Core Requirements: 28 Credits
Complete the following:
MATH 1210 Calculus I 5
MATH 1220 Calculus II 5
MATH 2210 Calculus III 3
MATH 2270 Linear Algebra 3
MATH 2280 Ordinary Differential Equations 3
MATH 3300 Foundations of Abstract Algebra 3
MATH 3310 Discrete Mathematics 3

Elective Requirements: 23 Credits
Complete 11 credits of upper division electives 11
Complete 12 credits of upper or lower division electives 12

Emphasis Requirements: 11 Credits
Complete all of the following:
MATH 3210 Complex Variables 3
MATH 4220 Advanced Calculus II 3
MATH 4310 Introduction to Modern Algebra I 3
MATH 4999 Mathematics Capstone 2

Emphasis Elective Requirements: 20 Credits
Complete 12 credits chosen from the following: 12
MATH 3100 Foundations of Geometry (3.0)
MATH 3400 Partial Differential Equations (3.0)
MATH 4000 Introduction to Probability (3.0)
MATH 4320 Introduction to Modern Algebra II (3.0) **
MATH 4330 Theory of Linear Algebra (3.0)
MATH 4510 Foundations of Topology (3.0)
MATH 4610 Introduction to Numerical Analysis I (3.0)
MATH 4620 Introduction to Numerical Analysis II (3.0) **
MATH 5510 General Topology (3.0)
Complete 8 additional credits of general electives 8

Graduation Requirements:
1. Completion of a minimum of 120 semester credits with at least 40 credit hours in upper-division courses.
2. Overall grade point average of 2.0 (C) or above, a minimum GPA of 2.4 in all MATH courses listed above, with no grade lower than a "C" in all listed PHYS and MATH courses (substitutions may be granted for some elective courses).
3. Residency hours—minimum of 30 credit hours through course attendance at UVU, with at least 10 hours earned in the last 45 hours.
4. Completion of general education and specified departmental requirements.
5. Complete an exit survey administered by the Mathematics Department Advisor.
6. Successful completion of at least one Global/Intercultural course.

Footnotes:
* Students planning to do graduate work in mathematics should take both of the year-long sequences MATH 4210, 4220, and MATH 4310, 4320, and acquire a reading knowledge of at least one foreign language chosen from French, German, or Russian.
** Requires completion of a prerequisite course, which fulfills elective requirements.
# Mathematics - Mathematics Emphasis, B.S.

## Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in Wolverine Track.

Milestone courses (pre-requisites for a course in one of the subsequent semesters) are marked in red and italicized.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1210</td>
<td>Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 1010</td>
<td>Intro to Writing GE</td>
<td>3</td>
</tr>
<tr>
<td>Humanities GE</td>
<td>Humanities GE (PHIL 1250</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective (any course numbered 1000 or higher)</td>
<td>3</td>
</tr>
</tbody>
</table>

Semester total: 14

<table>
<thead>
<tr>
<th>Semester 2</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1220</td>
<td>Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 2210/2215</td>
<td>Physics for Scientists and</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 2010 or ENGL 2020</td>
<td>Intermediate Writing GE</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective (any course numbered 1000 or higher)</td>
<td>3</td>
</tr>
</tbody>
</table>

Semester total: 16

<table>
<thead>
<tr>
<th>Semester 3</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2210</td>
<td>Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2220/2225</td>
<td>Physics for Scientists and</td>
<td>5</td>
</tr>
<tr>
<td>MATH 2270</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>HLTH 1100 or PES 1097</td>
<td>Personal Health</td>
<td>2</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective (any course numbered 1000 or higher)</td>
<td>3</td>
</tr>
</tbody>
</table>

Semester total: 16

<table>
<thead>
<tr>
<th>Semester 4</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2280</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3300</td>
<td>Foundations of Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>History GE</td>
<td>American Institutions (choose from list)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective (any course numbered 1000 or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>Elective (any course numbered 3000 or higher)</td>
<td>3</td>
</tr>
</tbody>
</table>

Semester total: 15

<table>
<thead>
<tr>
<th>Semester 5</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3310</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3210</td>
<td>Complex Variables</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4310</td>
<td>Introduction to Modern Algebra I</td>
<td>3</td>
</tr>
</tbody>
</table>

Notes: *The four MATH Elective courses must be taken from this set: MATH 3100, MATH 3400, MATH 4000, MATH 4320, MATH 4330, MATH 4340, MATH 4510, MATH 4610, MATH 4620, MATH 5510.

Degree total: 120