MATHEMATICS MAJOR (B.A.)

https://ceps.unh.edu/mathematics-statistics/program/ba/mathematics

Description

The bachelor of arts degree with the mathematics major may offer a broader liberal arts program than the bachelor of science degree programs. By a careful selection of electives, students can shape this major into a preparation for graduate school, business, or industry.

Requirements

Degree Requirements

Minimum Credit Requirement: 128 credits

Minimum Residency Requirement: 32 credits must be taken at UNH

Minimum GPA: 2.0 required for conferral*;

Core Curriculum Required: Discovery & Writing Program Requirements

Foreign Language Requirement: Yes

All Major, Option and Elective Requirements as indicated.

*Major GPA requirements as indicated.

Major Requirements

In all courses used to satisfy the requirements for its major programs, the Department of Mathematics and Statistics requires that a student earn a grade of C- or better and have an overall grade-point average of at least 2.00 in these courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 425</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 426</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 445</td>
<td>Mathematics and Applications with MATLAB or CS 410P</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 410P</td>
<td>Introduction to Scientific Programming/Python</td>
<td></td>
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<tr>
<td>or MATH 410C</td>
<td>Introduction to Scientific Programming/C</td>
<td></td>
</tr>
<tr>
<td>MATH 527</td>
<td>Differential Equations with Linear Algebra 1</td>
<td>4</td>
</tr>
<tr>
<td>MATH 528</td>
<td>Multidimensional Calculus 1</td>
<td>4</td>
</tr>
<tr>
<td>MATH 531</td>
<td>Mathematical Proof</td>
<td>4</td>
</tr>
<tr>
<td>MATH 539</td>
<td>Introduction to Statistical Analysis</td>
<td>4</td>
</tr>
<tr>
<td>MATH 545</td>
<td>Introduction to Linear Algebra 2</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 645</td>
<td>Linear Algebra for Applications</td>
<td></td>
</tr>
<tr>
<td>MATH 761</td>
<td>Abstract Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 767</td>
<td>One-Dimensional Real Analysis</td>
<td>4</td>
</tr>
<tr>
<td>THREE approved MATH courses, selected in consultation with the academic advisor</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Capstone: Select one of the following

| MATH 797   | Senior Seminar                                     | 4       |
| MATH 799   | Senior Thesis                                      | 4       |
|            | or                                                 |         |

Total Credits 58-60

1 The full Linearity sequence, MATH 525 and MATH 526, may be used to replace the MATH 527, MATH 528, and MATH 545 / MATH 645 requirements.

Degree Plan

Course Title Credits

First Year
Fall
MATH 425 Calculus I 4
Language Course 4
Discovery Course 4
Inquiry Course 4
MATH 400 Freshman Seminar 1

Credits 17

Spring
MATH 426 Calculus II 4
MATH 445 or CS 410C Mathematics and Applications with MATLAB or Introduction to Scientific Programming/C or Introduction to Scientific Programming/Python 4
ENGL 401 First-Year Writing 4

Credits 16

Second Year
Fall
MATH 528 Multidimensional Calculus 4
MATH 539 Introduction to Statistical Analysis 4
Discovery Course 4

Credits 16

Spring
MATH 527 Differential Equations with Linear Algebra 4
MATH 531 Mathematical Proof 4
Discovery Course 4
Discovery Course 4

Credits 16

Third Year
Fall
MATH 545 or MATH 645 Introduction to Linear Algebra or Linear Algebra for Applications 4
MATH 761 Abstract Algebra 4
Discovery Course 4
Writing Intensive Course 4

Credits 16

Spring
MATH 767 One-Dimensional Real Analysis 4
MATH Elective Course 4
Discovery Course 4
Writing Intensive Course 4

Credits 16
Fourth Year

Fall
MATH 797 Senior Seminar 4
or MATH 799 or Senior Thesis
Elective Course 4
Elective Course 4

Credits 16

Spring
MATH Elective Course 4
Elective Course 4
Elective Course 4
Elective Course 4

Credits 16

Total Credits 129

Student Learning Outcomes

• Students can explain core concepts from a range of different branches of mathematics, including analysis, algebra, calculus and statistics.
• Students can correctly interpret mathematical definitions and construct simple proofs which use definitions and logical arguments to establish properties of mathematical objects.
• Students are aware that mathematical objects may have multiple representations and are able to select representations which clarify problems and simplify calculations.
• Students can recognize valid and invalid mathematical arguments.