School of Natural Sciences and Mathematics

Mathematics (BS)

Degree Requirements (120 semester credit hours)

Four-Year Degree Plan [Example]
These are examples only. Please see advisor to develop your individual plan.

- **Mathematics**
- **Applied Mathematics Specialization**
- **Statistics Specialization**

Mathematics with Mathematics Specialization (BS)

Degree Requirements (120 semester credit hours)

Four-Year Degree Plan [Example]
This is an example only. Please see your advisor to develop your individual plan.

### Freshman Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>SCH</th>
<th>Spring Semester</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIST 1301</strong> U.S. History Survey to Civil War</td>
<td>2</td>
<td><strong>HIST 1302</strong> U.S. History Survey from the Civil War</td>
<td>3</td>
</tr>
<tr>
<td><strong>MATH 2417</strong> Calculus</td>
<td>2</td>
<td><strong>MATH 2419</strong> Calculus</td>
<td>3</td>
</tr>
<tr>
<td><strong>MATH 2370</strong> Introduction to Programming with MATLAB</td>
<td>3</td>
<td><strong>PHYS 2325</strong> Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>or <strong>CS 1325</strong> Introduction to Programming I</td>
<td>2</td>
<td>or <strong>CHEM 1311</strong> General Chemistry</td>
<td>2</td>
</tr>
<tr>
<td>or <strong>CS 1337</strong> Computer Science I</td>
<td>2</td>
<td>or <strong>CHEM 1111</strong> General Chemistry</td>
<td>2</td>
</tr>
<tr>
<td><strong>COMM 1311</strong> Survey of Oral and Technology-based Communication</td>
<td>2</td>
<td>or <strong>PHYS 2421</strong> Honors Physics I - Mechanics and Heat</td>
<td>2</td>
</tr>
<tr>
<td><strong>UNIV 1010</strong> Freshman Seminar</td>
<td>0</td>
<td><strong>ARTS 1301</strong> Exploration of the Arts</td>
<td>3</td>
</tr>
<tr>
<td><strong>NATS 1101</strong> Natural Sciences and Mathematics Freshman Seminar</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td></td>
<td>14</td>
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</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
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<tbody>
<tr>
<td></td>
<td>0</td>
<td><strong>PHYS 2421</strong> Honors Physics I - Mechanics and Heat</td>
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<tr>
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</tr>
</tbody>
</table>

**GOVT 2305** American National Government 3
**MATH 2418** Linear Algebra 7

**PHYS 2326** Electromagnetism and Waves 3-4
or **CHEM 1312** General Chemistry II 2
or **PHYS 2422** Honors Physics II - Electromagnetism and Waves 2

**PHYS 2126** Physics Laboratory II 1
or **CHEM 1112** General Chemistry Lab II 3

**RHET 1302** Rhetoric 3
14-15

**Junior Year**

**Fall Semester**
**SCH**
**Spring Semester**
**SCH**

**MATH 3311** Abstract Algebra I 3
**MATH 4334** Numerical Analysis 3
**Free Elective** 6
**HUMA 1301** Exploration of the Humanities 3
**Free Elective** 9

15
15

**Senior Year**

**Fall Semester**
**SCH**
**Spring Semester**
**SCH**

**MATH 4301** Mathematical Analysis I 3
**MATH 3380** Differential Geometry 3
**STAT 4351** Probability 3
**Elective** 6

15
15-16

NOTES:

1 Incoming freshmen must enroll and complete requirements of UNIV 1010 and the corresponding school-related freshman seminar course. Students, including transfer students, who complete their core curriculum at UT Dallas must take UNIV 2020.

2 Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at UT Dallas.

3 A required Major course that also fulfills Core Curriculum requirements. If semester credit hours are counted in the Core Curriculum, students must complete additional coursework to meet the minimum requirement for graduation. Course selection assistance is available from the undergraduate advisor.

4 Three semester credit hours of Calculus are counted to fulfill the Mathematics Core Requirement with the remaining five semester credit hours to be counted under Component Area Option Core.

5 MATH 2417 and MATH 2419 requirements can be fulfilled by completing MATH 2413, MATH 2414, and MATH 2415.

6
Indicates a prerequisite class to be completed before enrolling in upper-division classes.

Six semester credit hours of Physics or Chemistry are counted under Science core, and one semester credit hour of Physics or Chemistry (PHYS 2125 or CHEM 1111) is counted under Component Area Core.

Approval of Mathematics department advisor required.

PHYS 2421 Honors Physics I may be electively substituted for PHYS 2325. (Requires a minimum grade of B+ in either MATH 2413 or MATH 2417)

PHYS 2422 Honors Physics II may be electively substituted for PHYS 2326. Needed prerequisites are satisfied if above degree program is followed in the sequence as indicated. Otherwise please see the catalog for prerequisite requirements.

51 Hours of upper division courses (course numbers beginning with 3 or greater) are required for all degrees.

Be sure to check prerequisites of Level 2 courses

Research Experiences for Undergraduates (REUs) during the summer are highly recommended for Mathematics majors planning to continue their education in graduate school, whether in Mathematics or another discipline. Formal REU programs exist at many universities, national laboratories, and even overseas, and usually offer a stipend typical of a graduate teaching assistantship. Announcements for REU programs usually appear online in December and application deadlines usually range from late January to early March. Requirements vary, but students are often eligible if they have completed their freshman year.

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Mathematics with Applied Mathematics Specialization (BS)

Degree Requirements (120 semester credit hours)

Four-Year Degree Plan [Example]

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<tr>
<td>MATH 2370 Introduction to Programming with MATLAB</td>
<td>3</td>
<td>PHYS 2325 Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>or CS 1325 Introduction to Programming</td>
<td>3</td>
<td>and PHYS 2125 Physics Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>or CS 1337 Computer Science</td>
<td>3</td>
<td>or CHEM 1311 General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>COMM 1311 Survey of Oral and Artistic Communications</td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td>or ARTS 1301 Exploration of the Arts</td>
<td>3</td>
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</table>

### Technology-based Communication

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<th>Notes</th>
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<tbody>
<tr>
<td>UNIV 1010</td>
<td>Freshman Seminar 1</td>
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### Sophomore Year

#### Fall Semester

- **GOVT 2305** American National Government
- **MATH 2418** Linear Algebra
- **PHYS 2326** Electromagnetism and Waves
- or **CHEM 1312** General Chemistry II
- or **PHYS 2422** Honors Physics II - Electromagnetism and Waves
- **PHYS 2126** Physics Laboratory II
- **RHET 1302** Rhetoric

#### Spring Semester

- **GOVT 2306** State and Local Government
- **MATH 2420** Differential Equations with Applications
- **MATH 3310** Theoretical Concepts of Calculus
- **MATH 2451** Multivariable Calculus with Applications
- **PSY 2301** Introduction to Psychology

### Junior Year

#### Fall Semester

- **MATH 3311** Abstract Algebra I
- **MATH 4334** Numerical Analysis
- **Free Elective**
- **HUMA 1301** Exploration of the Humanities

#### Spring Semester

- **MATH 3312** Abstract Algebra II
- **MATH 3379** Complex Variables
- **Free Elective**

### Senior Year

#### Fall Semester

- **MATH 4301** Mathematical Analysis I
- **MATH 4341** Topology
- **STAT 4351** Probability
- **Free Elective**

#### Spring Semester

- **MATH 4302** Mathematical Analysis II
- **MATH 4355** Methods of Applied Mathematics
- **STAT 4382** Stochastic Processes
- **Free Elective**

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Mathematics with Statistics Specialization (BS)

Degree Requirements (120 semester credit hours)

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or CS 1325 Introduction to Programming I

or CS 1337 Computer Science I

COMM 1311 Survey of Oral and Technology-based Communication

UNIV 1010 Freshman Seminar

NATS 1101 Natural Sciences and Mathematics Freshman Seminar

COMM 1311 Survey of Oral and Technology-based Communication

PHYS 2125 Physics Laboratory I

or CHEM 1311 General Chemistry I

and CHEM 1111 General Chemistry Lab

or PHYS 2421 Honors Physics I - Mechanics and Heat

ARTS 1301 Exploration of the Arts

Sophomore Year

Fall Semester

GOVT 2305 American National Government

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Spring Semester

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Junior Year

Fall Semester

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MATH 4334 Numerical Analysis

Free Elective

HUMA 1301 Exploration of the Humanities

Spring Semester

MATH 3379 Complex Variables

STAT 3355 Data Analysis for Statisticians and Actuaries

Free Elective

Free Elective

Senior Year

Fall Semester

MATH 4301 Mathematical Analysis I

STAT 4351 Probability

Free Guided Elective

Free Elective

Spring Semester

MATH 4302 Mathematical Analysis II

STAT 4352 Mathematical Statistics

STAT 4382 Stochastic Processes

Free Elective

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