# APPLIED MATHEMATICS (M.S.) (COMBINED B.S./M.S.)

## Program Requirements

4 courses for 12 credits will be applied from the undergraduate program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMAT 530</td>
<td>Scientific and Numerical Computing I</td>
<td>3</td>
</tr>
<tr>
<td>AMAT 532</td>
<td>Applied Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>AMAT 534</td>
<td>Data-Driven Modeling and Computation</td>
<td>3</td>
</tr>
<tr>
<td>AMAT 536</td>
<td>Applied Probability and Stochastic Processes</td>
<td>3</td>
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</tbody>
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### Core Courses

The following courses are mandatory:

- AMAT 530: Scientific and Numerical Computing I (3 credits)
- AMAT 532: Applied Linear Algebra (3 credits)
- AMAT 534: Data-Driven Modeling and Computation (3 credits)
- AMAT 536: Applied Probability and Stochastic Processes (3 credits)

### Elective Courses

Complete 5 courses from the following: 15 credits

- AMAT 540: Scientific and Numerical Computing II
- AMAT 542: Methods of Applied Mathematics
- AMAT 544: Applied Differential Equations
- AMAT 546: Mathematical Biology
- AMAT 548: Nonlinear Dynamics
- AMAT 649: Independent Study
- AMAT 650: Seminar
- CHEM 540: Advanced Physical Chemistry
- CHEM 544: Chemical Thermodynamics and Electrochemistry
- CSIT 531: Robotics
- CSIT 574: Image Processing
- EAES 530: Numerical Modeling of Earth Systems
- EAES 575: Environmental Economics
- MATH 521: Real Variables I
- MATH 522: Real Variables II
- MATH 525: Complex Variables I
- MATH 526: Complex Variables II
- MATH 562: General Relativity
- STAT 532: Fundamentals of Statistics
- STAT 534: Statistical Computing
- STAT 536: Statistical Theory
- STAT 537: Design and Analysis of Experiments
- STAT 538: Regression Methods

### Culminating Experience

Select one of the following options: 3 credits

- AMAT 696: Internship
- AMAT 697: Capstone
- AMAT 698: Master’s Thesis

Submit the completed Thesis and one copy to the Graduate School. See Thesis Guidelines for details.

- AMAT 550: Mathematics of Investment and Risk Management
- AMAT 552: Stochastic Calculus for Finance

**Total Credits**: 30