# Mathematics (M.S.)

## Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 521</td>
<td>Real Variables I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 531</td>
<td>Abstract Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 535</td>
<td>Linear Algebra I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 540</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete 15 credits from the list below.</td>
<td>15</td>
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</tbody>
</table>

### Culminating Experience

Complete one of the following options:

- MATH 697 Culminating Experience for PSM
- MATH 698 Master's Thesis

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

Total Credits: 30

### Electives

- Students may take up to 2 of the following if equivalent courses have not been taken previously:
  - MATH 515 Intermediate Analysis I
  - MATH 516 Intermediate Analysis II
  - MATH 518 Foundations of Abstract Algebra

Select 9-15 credits from the following:

- AMAT 530 Scientific and Numerical Computing I
- AMAT 532 Applied Linear Algebra
- AMAT 534 Data-Driven Modeling and Computation
- AMAT 536 Applied Probability and Stochastic Processes
- 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
- CSIT 515 Software Engineering
- CSIT 540 Computer Networks
- CSIT 555 Database Systems
- CSIT 571 Computer Algorithms and Analysis
- MATH 522 Real Variables II
- MATH 525 Complex Variables I
- MATH 526 Complex Variables II
- MATH 530 Mathematical Computing
- MATH 532 Abstract Algebra II
- MATH 536 Linear Algebra II
- MATH 551 Topology
- MATH 554 Projective Geometry
- MATH 560 Numerical Analysis
- MATH 562 General Relativity
- MATH 564 Ordinary Differential Equations
- MATH 566 Partial Differential Equations
- MATH 568 Applied Mathematics: Continuous
- MATH 569 Applied Mathematics: Discrete
- MATH 580 Combinatorial Mathematics
- MATH 581 Graph Theory
- MATH 584 Operations Research
- MATH 585 Fundamentals of Scientific Computing
- MATH 586 Fundamentals of Mathematical Models
- MATH 587 Fundamentals of Optimization
- MATH 590 Advanced Topics
- MATH 591 Applied Industrial Mathematics
- MATH 595 Seminar
- MATH 690 Independent Study in Mathematics
- STAT 532 Fundamentals of Statistics
- STAT 534 Statistical Computing
- STAT 536 Statistical Theory
- STAT 537 Design and Analysis of Experiments
- STAT 538 Regression Methods
- STAT 545 Practicum in Statistics I
- STAT 546 Non-Parametric Statistics
- STAT 549 Sampling Techniques
- STAT 561 Statistical Data Mining I
- STAT 562 Statistical Data Mining II
- STAT 570 Statistical Consulting
- STAT 595 Topics in Statistics
- STAT 597 Research Methods in Statistical Science
- STAT 640 Biostatistics: Categorical Data Analysis
- STAT 641 Biostatistics: Clinical Trials and Survival Analysis
- STAT 642 Introduction to Stochastic Processes
- STAT 645 Advanced Topics in Statistics
- STAT 646 Multivariate Analysis
- STAT 647 Practicum in Statistics II
- STAT 648 Advanced Statistical Methods
- STAT 649 Independent Study in Statistics
- STAT 656 Functional Analysis
- STAT 657 Advanced Design and Analysis of Experiments