## MATHEMATICS (M.S.)

### Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

#### Core Courses

- Complete 15 credits from the list below.
- **Electives**
- **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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 515</td>
<td>Intermediate Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 516</td>
<td>Intermediate Analysis II</td>
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<tr>
<td>MATH 518</td>
<td>Foundations of Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 522</td>
<td>Real Variables II</td>
<td>3</td>
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<tr>
<td>MATH 525</td>
<td>Complex Variables I</td>
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</tr>
<tr>
<td>MATH 526</td>
<td>Complex Variables II</td>
<td>3</td>
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<tr>
<td>MATH 530</td>
<td>Mathematical Computing</td>
<td>3</td>
</tr>
<tr>
<td>MATH 532</td>
<td>Abstract Algebra II</td>
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<tr>
<td>MATH 536</td>
<td>Linear Algebra II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 541</td>
<td>Topology</td>
<td>3</td>
</tr>
<tr>
<td>MATH 544</td>
<td>Projective Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 548</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 551</td>
<td>General Relativity</td>
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</tr>
<tr>
<td>MATH 560</td>
<td>Ordinary Differential Equations</td>
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</table>

#### Electives

- Students may take up to 2 of the following if equivalent courses have not been taken previously:
- 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 564: 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 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: Special Topics in Advanced Mathematics
- MATH 591: Applied Industrial Mathematics
- MATH 595: Seminar
- 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: Special 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: Special Topics in Advanced 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

Total Credits: 30

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**Notes:**
- Students must complete a total of 30 credits.
- Elective courses are chosen to complement the student's interests and career goals.
- The culminating experience can be fulfilled through a thesis, a project, or other approved activities.
- Students are encouraged to work closely with their advisors to select courses that align with their academic and professional aspirations.
- For more information, please consult the university's graduate program handbook or contact the Mathematics Department directly.