

# Mathematics MS

## Master of Science in Mathematics - Option I Thesis

The MS in Mathematics requires 8 courses and a thesis (6 credit hours), a total of 30 credit hours, as follows:

### Thesis (6 semester hours)

MATH 518	Thesis	6
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Only 6 semester hours of credit for 518 per degree will be given upon satisfactory completion of the requirement.

### Required Courses (15 semester hours):

MATH 501	Mathematical Statistics I	3
MATH 502	Mathematical Statistics II	3
MATH 511	Real Analysis I	3
MATH 531	Theory of Matrices	3
MATH 537	Theory of Numbers	3

### Required Electives (9 semester hours)

Any MATH courses except MATH 500, MATH 550, MATH 560, MATH 572, and MATH 580	9
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<b>Total Hours</b>	<b>30</b>
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## Master of Science in Mathematics Option II Non-Thesis

The MS in Mathematics requires 11 courses and a project (Math 595, 3 credit hours), a total of 36 credit hours, as follows:

### Research Project (3 semester hours)

MATH 595	Research Literature & Techniques (3 semester hours required)	3
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### Required Courses: (15 semester hours)

MATH 501	Mathematical Statistics I	3
MATH 502	Mathematical Statistics II	3
MATH 511	Real Analysis I	3
MATH 531	Theory of Matrices	3
MATH 537	Theory of Numbers	3

### Required Concentration Courses (6 semester hours)

MATH 538	Functions of Complex Variables I	3
MATH 543	Abstract Algebra I	3

### Electives (12 semester hours)

Any MATH or MTE courses, or courses approved by the Math Department	12
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<b>Total Hours</b>	<b>36</b>
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## Master of Science in Mathematics Fast-Track Bachelors + Masters Option II Non-Thesis

The Fast-Track Bachelors + Masters degree program allows undergraduate students in the Mathematics program to begin coursework towards the non-thesis option of the Master of Science in Mathematics program during their senior year at East Texas A&M University. Students can earn a B.S. and M.S. degree in five years upon completion of degree requirements for both degrees. For this Fast-Track Bachelors + Masters program, 6 credits of graduate coursework can be applied to both the BS and MS degrees. Once admitted, the Fast-Track Bachelors + Masters candidate must maintain a 3.00 Undergraduate GPA. In the final semester of the student's undergraduate program, a new online Apply Texas Application for the master's Fast-Track Bachelors + Masters program must be submitted to gain admission and continue taking classes to complete the master's program.

### Research (3 semester hours required)

MATH 595	Research Literature & Techniques (3 semester hours required)	3
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### Required Courses (15 semester hours)

MATH 501	Mathematical Statistics I	3
MATH 502	Mathematical Statistics II	3
MATH 511A	Real Analysis I *	3
MATH 531	Theory of Matrices	3

MATH 537	Theory of Numbers	3
<b>Required Concentration Courses (6 semester hours)</b>		
MATH 538A	Functions of Complex Variables I *	3
MATH 543	Abstract Algebra I	3
<b>Electives (12 semester hours)</b>		
Any MATH or MTE courses, or courses approved by the Math Department		12
<b>Total Hours</b>		<b>36</b>

\* Courses shared with the BS program.

## Master of Science in Mathematics w/Concentration in Data Science Non-Thesis

### Research Project (3 semester hours)

MATH 595	Research Literature & Techniques	3
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### Required Courses (15 hours)

MATH 501	Mathematical Statistics I	3
MATH 502	Mathematical Statistics II	3
MATH 511	Real Analysis I	3
MATH 531	Theory of Matrices	3
MATH 537	Theory of Numbers (MATH 537 can be replaced with MATH 563 for Data Science)	3

### Required Concentration Courses (12 hours)

CSCI 556	Data Analysis & Visualization	3
CSCI 560	Neural Networks and Deep Learning	3
CSCI 573	Big Data Computing and Analytics	3
CSCI 574	Machine Learning	3

### Electives (6 semester hours) from:

MATH 561	Regression Analysis	3
MATH 563	Image Processing with Elements of Learning (MATH 563 can replace MATH 537 for the Data Science emphasis)	3

MATH 569 Image Analysis is recommended

<b>Total Hours</b>		<b>36</b>
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## Master of Science in Mathematics w/Concentration in Mathematics Education Option II Non-Thesis

The MS degree in Mathematics with a concentration in mathematics education is to prepare students to teach math courses at middle/high schools and institutions of higher education at the undergraduate level. Students will take 9-15 graduate hours in Math Teacher Education (MTE) in order to learn and understand the Principles and Standards of the National Council of Teachers of Mathematics (NCTM) and high impact teaching practices.

<http://catalog.tamuc.edu/grad/colleges-and-departments/science-engineering/mathematics/#programstext>

### Research Project (3 hours)

MATH 595	Research Literature & Techniques (3 semester hours required)	3
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### Required Courses (15 semester hours)

MATH 501	Mathematical Statistics I	3
MATH 502	Mathematical Statistics II	3
MATH 511	Real Analysis I	3
MATH 531	Theory of Matrices	3
MATH 537	Theory of Numbers	3

### Math Education Concentration (12 semester hours) from:

MTE 555	Research Techniques for STEM and Education (Required)	3
Choose two (6 semester hours) from: MTE 551, MTE 552, MTE 553, MTE 554, MTE 556, or MTE 557		6
Choose one (3 semester hours) from: MATH 512, MATH 522, MATH 538, MATH 543, MATH 546, MATH 560, MATH 561, or MATH 580		3

### Electives (6 semester hours)

Six hours of any MATH or MTE courses, or courses approved by the Math Department.	6
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<b>Total Hours</b>	<b>36</b>
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**Note:** Successful completion of the Comprehensive Exam is required of all students.