

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	3-6
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Only 6 semester hours of credit for 518 per degree will be given upon satisfactory completion of the requirement.

Core Courses (12 semester hours) including one complete sequence from:

MATH 501	Mathematical Statistics I	3
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MATH 502	Mathematical Statistics II	3
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or

MATH 511	Real Analysis I	3
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MATH 512	Real Analysis II	3
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or

MATH 522	General Topology I	3
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MATH 523	General Topology II	3
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or

MATH 538	Functions of Complex Variables I	3
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MATH 539	Functions of Complex Variables II	3
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or

MATH 543	Abstract Algebra I	3
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MATH 544	Abstract Algebra II	3
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Complete (12 semester hours) from either the core section or from the following:

MATH 515	Dynamical Systems	3
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MATH 517	Calculus of Finite Differences	3
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MATH 531	Theory of Matrices	3
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MATH 532	Fourier Analysis and Wavelets	3
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MATH 533	Linear and Nonlinear Optimization	3
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MATH 536	CRYPTOGRAPHY	3
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MATH 537	Theory of Numbers	3
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MATH 546	Numerical Methods and Learning	3
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MATH 561	Regression Analysis	3
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MATH 563	Image Processing with Elements of Learning	3
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MATH 569	Image Analysis and Recognition with Learning	3
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MATH 580	Topics in the History of Mathematics	3
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MATH 597	Special Topics (approval by the math department)	3
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Total Hours		30
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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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Core Courses: (12 semester hours) including one complete sequence from:

MATH 501	Mathematical Statistics I	3
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MATH 502	Mathematical Statistics II	3
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or

MATH 511	Real Analysis I	3
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MATH 512	Real Analysis II	3
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or

MATH 522	General Topology I	3
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MATH 523	General Topology II	3
or		
MATH 538	Functions of Complex Variables I	3
MATH 539	Functions of Complex Variables II	3
or		
MATH 543	Abstract Algebra I	3
MATH 544	Abstract Algebra II	3
Complete (9 semester hours) from either the core section or from the following:		
MATH 515	Dynamical Systems	3
MATH 517	Calculus of Finite Differences	3
MATH 531	Theory of Matrices	3
MATH 532	Fourier Analysis and Wavelets	3
MATH 533	Linear and Nonlinear Optimization	3
MATH 536	CRYPTOGRAPHY	3
MATH 537	Theory of Numbers	3
MATH 546	Numerical Methods and Learning	3
MATH 561	Regression Analysis	3
MATH 563	Image Processing with Elements of Learning	3
MATH 569	Image Analysis and Recognition with Learning	3
MATH 580	Topics in the History of Mathematics	3
MATH 597	Special Topics (approval by the math department)	3
Electives (12 semester hours)		
An additional 12 semester hours (4 graduate level electives) from any graduate courses offered by the mathematics department, or outside courses with the approval of the mathematics department.		12
Total Hours		36

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 (3 semester hours)

MATH 595	Research Literature & Techniques (3 semester hours required)	3
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Math Core Courses (12 semester hours)

MATH 501	Mathematical Statistics I	3
MATH 502	Mathematical Statistics II	3
MATH 511	Real Analysis I	3
and (3 semester hours) from: MATH 512, MATH 522, MATH 538, MATH 543		3

Math Education Concentration (12 semester hours) from:

MTE 555	Research Techniques for STEM and Education	3
Choose (6 semester hours) from: MATH 531, MATH 537, MATH 546, MATH 561, MATH 580		6
Choose (3 semester hours) from: MTE 551, MTE 552, MTE 553, MTE 554 or MTE 556		3

Electives (9 semester hours) from:

3 semester hours - MTE courses (choose from any remaining graduate level MTE course, not previously taken)		3
6 semester hours - MATH or MTE (choose from any remaining graduate level MATH and/or MTE courses, not previously taken)		6

Total Hours		36
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Note: Successful completion of the Comprehensive Exam is required of all students.