

MATHEMATICS, MS

Requirements for Students Matriculating in or before Academic Year 2024-2025. Learn more about Graduate College Academic Regulation 7.0 (<http://catalog.okstate.edu/graduate-college/#70>).

Thesis Option

Total Hours: 33

Code	Title	Hours
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Core Courses

Choose one of the following tracks: 18

Applied Track

Select one of the following two courses:

MATH 5023	Advanced Linear Algebra
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MATH 5043	Advanced Calculus I
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Select one of the following two courses:

MATH 5543	Numerical Analysis for Differential Equations
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MATH 5553	Numerical Analysis for Linear Algebra
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Select four of the following courses:

MATH 4233	Intermediate Differential Equations
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MATH 4513	Introduction to Numerical Analysis
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MATH 4553	Introduction to Optimization
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MATH 5213	Fourier Analysis and Wavelets
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MATH 5233	Partial Differential Equations
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MATH 5243	Ordinary Differential Equations
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MATH 5253	Advanced Ordinary Differential Equations
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MATH 5543	Numerical Analysis for Differential Equations
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MATH 5553	Numerical Analysis for Linear Algebra
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MATH 5563	Finite Element Methods for Partial Differential Equations
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MATH 5580	Case Studies in Applied Mathematics
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MATH 5593	Methods of Applied Mathematics
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Pure Track

Option 1

Required:

MATH 5043	Advanced Calculus I
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MATH 5053	Advanced Calculus II
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MATH 5003	Abstract Algebra I
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MATH 5013	Abstract Algebra II
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MATH 5303	General Topology
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MATH 4283	Complex Variables
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Option 2

Required:

MATH 5043	Advanced Calculus I
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MATH 5053	Advanced Calculus II
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MATH 5003	Abstract Algebra I
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MATH 5013	Abstract Algebra II
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Select two of the following courses:

MATH 5143	Real Analysis I
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MATH 5153	Real Analysis II
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MATH 5283	Complex Analysis I
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MATH 5293	Complex Analysis II
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MATH 5313	Geometric Topology
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MATH 6323	Algebraic Topology I
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MATH 5613	Algebra I
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MATH 5623	Algebra II
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Math Education Track

Required:

MATH 5043	Advanced Calculus I
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MATH 5913	Introduction to Research in Mathematics Education
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Select one of the following courses:

MATH 4713	Number Theory
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MATH 4753	Introduction to Cryptography
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MATH 5003	Abstract Algebra I
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MATH 5013	Abstract Algebra II
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MATH 5023	Advanced Linear Algebra
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Select three of the following (with exactly two in one area):

Discrete Math

MATH 4513	Introduction to Numerical Analysis
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MATH 4553	Introduction to Optimization
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MATH 4663	Combinatorics
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MATH 5543	Numerical Analysis for Differential Equations
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MATH 5553	Numerical Analysis for Linear Algebra
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CS 4793	Artificial Intelligence I
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Geometry

MATH 4423	Geometry and Algorithms in Three-Dimensional Modeling
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MATH 4813	Groups and Representations
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CS 4143	Computer Graphics
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Statistics

STAT 4043	Applied Regression Analysis
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STAT 5123	Probability Theory
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STAT 5223	Statistical Inference
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STAT 5013	Statistics for Experimenters I
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STAT 5023	Statistics for Experimenters II
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STAT 5043	Sample Survey Designs
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STAT 5063	Statistical Machine Learning with R
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STAT 5303	Experimental Designs
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Hours Subtotal	18
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Additional Graduate Courses

Electives

Select 9 hours of electives (no more than 6 hours can be outside MATH, STAT or CS). 9

Thesis/Report

MATH 5000	Master's Research and Thesis	6
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Hours Subtotal	15
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Total Hours	33
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Non-Thesis Option

Total Hours: 33

Code	Title	Hours
Core Courses		
Choose one of the following tracks:		18
<i>Applied Track</i>		
Select one of the following two courses:		
MATH 5023	Advanced Linear Algebra	
MATH 5043	Advanced Calculus I	
Select one of the following two courses:		
MATH 5543	Numerical Analysis for Differential Equations	
MATH 5553	Numerical Analysis for Linear Algebra	
Select four of the following courses:		
MATH 4233	Intermediate Differential Equations	
MATH 4513	Introduction to Numerical Analysis	
MATH 4553	Introduction to Optimization	
MATH 5213	Fourier Analysis and Wavelets	
MATH 5233	Partial Differential Equations	
MATH 5243	Ordinary Differential Equations	
MATH 5253	Advanced Ordinary Differential Equations	
MATH 5543	Numerical Analysis for Differential Equations	
MATH 5553	Numerical Analysis for Linear Algebra	
MATH 5563	Finite Element Methods for Partial Differential Equations	
MATH 5580	Case Studies in Applied Mathematics	
MATH 5593	Methods of Applied Mathematics	
<i>Pure Track</i>		
Option 1		
Required:		
MATH 5043	Advanced Calculus I	
MATH 5053	Advanced Calculus II	
MATH 5003	Abstract Algebra I	
MATH 5013	Abstract Algebra II	
MATH 5303	General Topology	
MATH 4283	Complex Variables	
Option 2		
Required:		
MATH 5043	Advanced Calculus I	
MATH 5053	Advanced Calculus II	
MATH 5003	Abstract Algebra I	
MATH 5013	Abstract Algebra II	
Select two of the following courses:		
MATH 5143	Real Analysis I	
MATH 5153	Real Analysis II	
MATH 5283	Complex Analysis I	
MATH 5293	Complex Analysis II	
MATH 5313	Geometric Topology	
MATH 6323	Algebraic Topology I	
MATH 5613	Algebra I	
MATH 5623	Algebra II	
<i>Math Education Track</i>		
Required:		
MATH 5043	Advanced Calculus I	

MATH 5913	Introduction to Research in Mathematics Education	
Select one of the following courses:		
MATH 4713	Number Theory	
MATH 4753	Introduction to Cryptography	
MATH 5003	Abstract Algebra I	
MATH 5013	Abstract Algebra II	
MATH 5023	Advanced Linear Algebra	
Select three of the following (with exactly two in one area):		
Discrete Math		
MATH 4513	Introduction to Numerical Analysis	
MATH 4553	Introduction to Optimization	
MATH 4663	Combinatorics	
MATH 5543	Numerical Analysis for Differential Equations	
Artificial Intelligence I		
Geometry		
MATH 4423	Geometry and Algorithms in Three-Dimensional Modeling	
MATH 4813	Groups and Representations	
Computer Graphics		
Statistics		
STAT 4043	Applied Regression Analysis	
STAT 5123	Probability Theory	
STAT 5223	Statistical Inference	
STAT 5013	Statistics for Experimenters I	
STAT 5023	Statistics for Experimenters II	
STAT 5043	Sample Survey Designs	
STAT 5063	Statistical Machine Learning with R	
STAT 5303	Experimental Designs	
Hours Subtotal		18
Additional Graduate Courses		
<i>Electives</i>		
Select 9 hours of electives (no more than 6 hours can be outside MATH, STAT or CS).		9
<i>Thesis/Report</i>		
MATH 5000	Master's Research and Thesis	6
Hours Subtotal		15
Total Hours		33

Graduate College Master's Program Requirements

Learn more about Graduate College 2024-2025 Master's Degree Program Requirements (<http://catalog.okstate.edu/graduate-college/>). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.