

Master of Science in Mathematics

Degree Codes: ES MS MATH

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Overall requirements for the specific options are as follows. If a student is currently not in the MS Math program (for instance, if they are pursuing a PhD), they first have to apply and be accepted to complete the MS degree in Math.

Requirements for all degree types

Course Category	Number	Course Name	SCH	
Core Courses	Students must take one course out of at least three of the following core areas.		9	
	Applied Mathematics: one of the following.			
	MATH 407	Partial Differential Equations		3
	MATH 414	Numerical Analysis		3
	MATH 415	Numerical Analysis		3
	Pure Mathematics: one of the following.			
	MATH 435	Graph Theory		3
	MATH 460	Number Theory		3
	MATH 482	Introduction to Real Analysis		3
	Statistics: one of the following.			
	STAT 506	Regression Analysis		3
	STAT 507	Design and Analysis of Experiments		3
	STAT 520/620	Applied Probability and Mathematical Statistics/Theory of Probability		3
	STAT 521/621	Theory of Statistics		3
	Computing: one of the following.			
	CSC 520	Advanced Analytical Algorithms and Complexity		3
	CSC 521	Advanced Computer Architecture		3
	CSC 532	Advanced Topics: Software Engineering		3
MATH 574	Numerical Solution for PDE I	3		
Total			9	

Thesis Option (in addition to the courses above)

Course Category	Number	Course Name	SCH
Electives¹	Five courses (15 semester hours) approved by the student's advisory committee		15
Thesis²	MATH 551	Research & Thesis (6 SCH are required with at least 3 SCH taken in the quarter the thesis is reviewed and approved)	6
Total			30

Practicum Option (in addition to the courses above)

Course Category	Number	Course Name	SCH
Electives¹	Eight courses (24 semester hours) approved by the student's advisory committee		24
Practicum³	MATH 555	Practicum	3
Total			36

No Coursework Only Option Available

¹A total of at least 15 SCH of courses need to be 500 level or above. The maximum number of variable credit Directed Study courses that can be applied towards the degree is 6 SCH. A total of up to 9 SCH on the entire plan of study may be chosen from a related field if approved by the Advisory Committee.

²The **Thesis** is a document that encompasses approximately fifty pages on a student's research, and a defense in front of their committee (see *). MATH 551 will be taken for a few quarters as shown above.

³There are two options for the **Practicum** option:

(1) A formal Practicum: working up to 100 hours to prepare an approximately twenty-five paged document on a specific topic, and defending the document in front of the student's committee (see *). When the student is ready to defend, only then they must take MATH 555 in the quarter and defend the document by presenting a 30-min talk that must be completed a week or more before the end of the quarter.

(2). Pass two of the MATH/STAT qualifiers for the CAM program (ask Dr. Dai, the CAM Program Coordinator for details) and take MATH 555 during the last quarter of the MS program. No major document is required, but the student has to present a 20-min presentation on a graduate mathematics or statistics topic of the student's choice to assure their communication skills in Mathematics and Statistics is sufficient. This presentation will be in front of their committee (see *) and must be completed a week or more before the end of the quarter.

Additionally, the student will have to answer the mandatory questionnaire on Moodle to pass MATH 555.

*The student's Thesis or Practicum Committee must consist of their advisor, and at least two other Math faculty, all of whom must be Graduate Faculty.

Plan of Study Important Information: When entering information in the plan of study, it is important to note that only core courses and all core courses need to be put in section 1.1, while all others are put in section 1.2 (i.e. special topics, seminar, and research courses).

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