Master of Science in Mathematics

Degree Codes: <u>ES</u> <u>MS</u> <u>MATH</u>

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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 four courses from at least three of the four areas listed below.**			12
	Applied Mathematics Area			
	MATH 407	Partial Differential Equations	3	
	MATH 414	Numerical Analysis	3	
	MATH 415	Numerical Analysis	3	
	Pure Mathematics Area			
	MATH 435	Introduction to Graph Theory	3	
	MATH 535	Graph Theory	3	
	MATH 460	Number Theory	3	
	MATH 482	Introduction to Real Analysis	3	
	Statistics Area			
	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 Area			
	CSC 520	Advanced Analytical Algorithms and Complexity	3	
	MATH 574	Numerical Solution for PDE I	3	
	MATH 575	Numerical Solution for PDE II	3	

Total 12

Thesis Option (in addition to the courses above)

Course Category	Number	Course Name		SCH
Electives[1]	Four courses (12 semester hours) approved by the student's advisory committee			12
Thesis[2]	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
Electives[1]	Seven courses (21 semester hours) approved by the student's advisory committee			21
Practicum[3]	MATH 555	Practicum		3

Total 36

Coursework Only Option (in addition to the courses above)

Course Category	Number	Course Name		SCH
Electives[1]		Eight courses (24 semester hours) approved by the student's advisory committee		24
				Total 36

[1]The maximum number of variable credit Directed Study courses that can be applied towards the degree is 6 SCH. *Only* a total of up to 9 SCH in the entire curriculum may be chosen from a related field outside Math and Statistics if approved by the Advisory Committee.

[2]The **Thesis** is a document that encompasses approximately fifty pages on a student's research, and a defense in front of their committee (see *). IMPORTANT that students in accelerated Masters program will need a total of at least 144 credits earned towards undergraduate and graduate degrees.

[3]There 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 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 show proficiency in communicating mathematics and statistics concepts. 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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