

Learning and Teaching in STEM (PhD): Mathematics and Statistics Education

Degree Requirements

Code	Title	Hours	Counts towards
College Scholar Leader Core Courses		6	
ED 755	Scholar Leader: Diversity and Equity in Schools and Communities		
ED 756	Scholar Leader: Systemic Change in Education		
College Research Methods Courses		15	
Required Introductory Research Methods Courses			
ED 710	Applied Quantitative Methods in Education I		
ED 730	Introduction to Qualitative Research in Education (or equivalent)		
Advanced Research Methods Courses (select one course from the list below)		3	
ED 711	Applied Quantitative Methods in Education II		
ED 731	Advanced Qualitative Research and Data Analysis in Education ¹		
ED 750	Mixed Methods Research in Education		
Advanced Research Methods Electives		6	
Select two courses from the list above or other advanced research courses approved by the student advisor.			
Dissertation Research		9	

EMS 895 Doctoral
Dissertation
Research

¹ Students may also select from a design-based research course or courses in the Department of Statistics or Psychology at the level 500 or above (e.g., ST 505, PSY 880) approved in conjunction with the academic committee.

Mathematics and Statistics Education

Code	Title	Hours	Counts towards
Learning and Teaching in STEM Education Core Courses		6	
EMS 791	Contemporary Research and Critical Issues in STEM Education		
EMS 794	Special Problems in Science Teaching		
Mathematics and Statistics Education Specific Courses		24	
Foundations Course (select one course from the list below)		3	
EMS 770	Foundations Of Mathematics Education		
EMS 792	Special Problems in Math Teaching		
Teaching and Learning Course (select one course from the list below)		3	
EMS 711	Research on the Teaching and Learning of Math at Secondary and Early College Levels		
EMS 712	Teaching Mathematics In Elementary and Junior High School		
Select two Additional Courses in Mathematics and Statistics Education		6	
EMS 704	Curriculum Development and Evaluation In Science and Mathematics		
EMS 705	Education and Supervision Of Teachers Of Mathematics and Science		
EMS 792	Special Problems in Math Teaching		

Experiences in Mathematics Education	3
Select one of the following: ³	
EMS 841	Practicum In Science and Mathematics Education
EMS 851	Internship In Mathematics and Science Education
Seminars and Preliminary Exam	3
EMS 802	Seminar In Mathematics Education (Intro Seminar in Mathematics Education--1 credit, taken within one of the first two semesters at beginning of program)
EMS 802	Seminar In Mathematics Education (Advanced Seminar in Mathematics Education-1 credit, taken near end of program)
EMS 890	Doctoral Preliminary Exam
Specialty Courses	6
Specialty Courses (courses 500 or above level) that deepen or broaden and are determined in conjunction with the academic committee	
Total Hours	60

² Any course not chosen in Foundations or Teaching and Learning categories.

³ These experiences are planned in coordination with an advisor and are meant to enhance a student's applicable experience in educational settings This could be one experience of 3 hours or any combination of hours.