Master of Science in Education: Secondary Mathematics Teaching

33 hours; Contact persons: Dr. Moriah Smothers or Dr. Tori Colson

Delivery: Online Asynchronous

Website

Required Mathematic Courses: (18 hours) *Take 6 of the 7 courses listed

MATH 603 - Fundamental Concepts of Algebra Credits: 3
The conceptual framework of algebra, recent developments in algebraic theory and advanced topics in algebra for teachers and curriculum supervisors.

MATH 604 - Fundamental Concepts of Geometry Credits: 3
The conceptual framework of many different geometries, recent developments in geometric theory, and advanced topics in geometry for teachers and curriculum supervisors.

MATH 605 - Problem Solving in Mathematics Credits: 3
Theory and practice in mathematical problem-solving; exploration of a variety of techniques; and finding solutions to problems in arithmetic, algebra, geometry, and other mathematics for teachers of mathematics and curriculum supervisors.

MATH 611 - Introduction to Analysis for Secondary Teachers Credits: 3
A study of continuity, differentiability, and integrability of a function of a real variable particularly as these properties appear in the secondary school mathematics curriculum.

MATH 621 - Technology for Teaching Mathematics Credits: 3
This course prepares mathematics teachers to use technology to make instructional decisions and support students in solving mathematical problems in the secondary mathematics curriculum, including problems in geometry, algebra, functions, data analysis, probability, and calculus.

MATH 641 - Number Theory and Applications Credits: 3
In this course, students are expected to prove theorems in elementary number theory; apply number theoretic concepts to solve various types of problems; communicate about various topics in elementary number theory using appropriate notation and terminology. This course will cover various topics in number theory such as divisibility, modular arithmetic, arithmetic functions, continued fractions, and cryptology.

STAT 638 - Fundamental Models in Statistical Inference Credits: 3
This class emphasizes the study of probability models that form the basis of standard statistical techniques. Statistical techniques considered include inferences involving measures of central tendency and measures of variability, linear regression model estimation and goodness of fit hypothesis testing.

Education Core (6 hours)

EDUC 604 - Equity Education Credits: 3
The purpose of this course is to examine interactions between social groups, including norms and values, and disparate educational goals. Students are introduced to theories relevant to equity in schooling and American society. Students will explore critical frameworks that focus on issues of race and ethnicity, language, gender, transnationalism, immigration, and cultural diversity in modern schools.

EDUC 523 - Collaborative Partnerships Credits: 3

This course defines, studies, and applies the skills necessary for teaching collaboratively. It presents a paradigm that adheres to the belief that close working relationships between teachers serving the same students are an absolute necessity. Emphasis will be placed on the need for close communication between professionals, the challenges of scheduling and instructional coordination, and interpersonal problem solving. Field experiences required.

Research Sequence (9 hours)

EDUC 601 - Research in Education Credits: 3

Introduces the field of educational research. The course emphasizes the understanding of quantitative and qualitative research, teacher action-research, and the evaluation of research reports.

EDUC 699 - Supervised Research Credits: 3

Advanced research in a specific area of education. Topics arranged to meet the needs and interests of the student, subject to availability of graduate faculty to supervise the research.