

MATHEMATICS FOR MIDDLE SCHOOL TEACHING (MMT)

MMT 401 | FOUNDATIONS OF MATHEMATICAL THINKING AND LEARNING IN THE MIDDLE SCHOOL | 4 quarter hours (Graduate)

This course is designed to help participants construct meaningful connections between being a learner of mathematics (i.e., a person who can solve problems, reason mathematically, communicate findings and thinking, and make connections) and being a teacher of mathematics (i.e., a person who can help others understand, use, and apply mathematical ideas). The course will begin the process (which will be continued throughout the remainder of the Master of Arts in Middle School mathematics Education program) of having students explore the interplay between narratives describing their own classroom experiences as well as literature and research about others' experiences in order to analyze the impact of developmental and interpersonal experiences on the learning and teaching of mathematics.

MMT 410 | THE DEVELOPMENT OF MIDDLE SCHOOL MATHEMATICS LEARNERS | 4 quarter hours (Graduate)

Critical to the success of middle school mathematics learners, is their teachers' understanding of the multiple perspectives that research has taught us, as educators, about how people learn. In this course, participants will engage with the history and evolution of how the fields of educational psychology, cognitive science, applied developmental psychology, and mathematics education have contributed to a modern understanding of what constitutes effective practice for middle school mathematics teaching. Major theoretical positions and their seminal architects will be highlighted, examined and discussed. A particular emphasis will be put on each position's impact on curriculum development and classroom pedagogy for middle school mathematics.

MMT 420 | TEACHING, LEARNING, AND ASSESSMENT OF MIDDLE SCHOOL MATHEMATICS | 4 quarter hours (Graduate)

This course will examine, in the context of classroom practice, the following themes: 1) How students can learn mathematics with conceptual understanding; 2) How to teach mathematics so that students learn with understanding; 3) How to assess students' mathematical knowledge to inform instruction and determine their growth; 4) The nature and content of innovative curriculum projects designed to teach mathematics for conceptual understanding.

MMT 430 | APPLIED PROJECT IN MATHEMATICS EDUCATION | 4 quarter hours (Graduate)

This course will span the three quarters of the second academic year of the program and will be partnered with the three content-focused courses offered during the second year. Participants will be introduced to the field of educational inquiry through a study of various designs and methods of doing educational research. In addition, this course will help participants consider current issues in mathematics education in relationship to their own teaching and learning of mathematics and what it means to transfer the mathematics learned in other courses into one's practice as a math teacher. They will identify concrete changes they want to implement in their teaching during the years following their completion of the program based on the new content and ideas to which they have been exposed. As part of the course, the teachers will design an action research project during the first quarter, implement the project during the second quarter, and analyze the data during the third quarter.