EDUTL course offerings relevant for MMS-Edu students

EDUTL 7715 - Learning Progressions in Mathematics Education
Examine the construction, use, and research on learning progressions in mathematics education.

EDUTL 7716 - Conceptual and Procedural Knowledge in Mathematics Education: Theory, Research, and Controversy
Examine research on students' learning of conceptual and procedural knowledge. We will carefully examine the nature of each type of knowledge, how they are acquired, how they are used, and how they are related.

EDUTL 7717 - Teaching Mathematics
Designed to provide an expanded view of the teaching of mathematics in grades 7-16 and current theories regarding best practices.

EDUTL 7718 - Student Learning Processes in Mathematics
Student cognition and learning. The topics of arithmetic, algebra and geometry will be used to explore issues of student thinking. We will investigate how the nature of these topics affect students' reasoning and problem solving and thinking.

EDUTL 7732 - Robotics and Automation for STEM Educators
An introduction to robotics and automation systems, their applications, and methods of teaching about and with them. Will include experiences related to the design, selection, set-up, and programming of robotic and automation systems.

EDUTL 7741 - Advanced Study of Learning and Cognition in STEM
Theories of learning and cognition as applied to learning, teaching and research in the STEM Education areas. Additional focus may be on affective issues.

EDUTL 7742 - Knowledge Representations in STEM Learning
Theory and classroom practices to promote various physical, visual, symbolic and mental representations of STEM knowledge structures.

EDUTL 7743 - Curriculum across Secondary and Post-Secondary STEM Education
Examining key ideas of Arithmetic, Algebra, Pre-calculus and calculus, Abstract algebra, Number theory, Linear Algebra and Geometry in order to trace the development trajectory of specific concepts.

EDUTL 7744 - Problem Solving in STEM
Help students gain a deeper understanding of the process of mathematical problem solving from an epistemological standpoint. Current theories and perspectives associated with teaching and learning problem solving will be studied.

EDUTL 7745 - Classroom Discourse in STEM Learning
Theory and practice on discourse patterns in STEM classrooms, including speaking, reading and writing to learn STEM subject matter in schools or colleges.
EDUTL 7731 - Multimedia Tools For STEM Education
Introduction to a wide variety of multimedia tools for use in STEM Education. The tools are constantly changing but some of the areas included are sensors, data collection, graphics, animation, presentation, audio, video, and multimedia authoring.