

# MATHEMATICS EDUCATION (MTED)

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## **MTED 290. EARLY MATH PRACTICUM. 3 Credits.**

**Pre-requisites:** MATH 208 or MATH 141 or placement into  $\geq$  MATH 161.

An early field experience for students majoring in mathematics education. Students are in a classroom, co-plan and co-teach lessons, tutor students and participate in seminar.

## **MTED 299. DIRECTED STUDY. 1-5 Credits.**

Independent/Directed Study.

## **MTED 300. MATHEMATICS FIELD EXPERIENCE. 2-5 Credits.**

**Notes:** may be repeated for credit.

**Pre-requisites:** junior standing.

Provides extra support and practice for teacher candidates preparing to teach mathematics. Students plan and teach mathematics lessons, discussing the lessons with the instructor before and after teaching. Course instructor observes at least one lesson, and videotapes other lessons.

## **MTED 396. EXPERIMENTAL. 1-5 Credits.**

Experimental.

## **MTED 399. DIRECTED STUDY. 1-6 Credits.**

Independent and directed study.

## **MTED 400. MATHEMATICS STUDENT TEACHING. 1 Credit.**

**Pre-requisites:** MTED 490A or MTED 490B; concurrent enrollment in EDUC 423.

Provides aspects of support for full-time student teachers to develop their teaching and learning of mathematics, such as to engage students in tasks that promote reasoning and facilitate discourse that moves students toward shared understanding of mathematics. Teacher candidates (1) participate in weekly seminars with practice-based topics related to mathematics teaching and (2) turn in lesson plans and reflections to receive feedback on how to improve their lessons.

## **MTED 425. ASSESSMENT IN THE MATHEMATICS CLASSROOM. 3 Credits.**

**Notes:** may be repeated for credit.

**Pre-requisites:** junior standing.

Focuses on the relationship between classroom assessment and mathematics learning through readings, discussion, and practice-based methods. Addresses the forms and purposes of assessment in the mathematics classroom including the alignment of assessment to mathematics instruction, use of multiple sources of assessment information as evidence of learning, students' roles in assessment, and reflecting on effective methods. Students use assessment to evaluate the effectiveness of lessons.

## **MTED 429. TOPICS IN MATHEMATICS EDUCATION. 1-3 Credits.**

**Notes:** May be repeated for credit with different topics (specified in the section title).

**Pre-requisites:** junior standing.

Includes topics regarding the teaching and learning of mathematics selected depending on the interest of the class and instructor. Possible topics may include (but are not limited to): history and culture of mathematics, history of mathematics education, systems theory and learning, and equity.

## **MTED 476. MATHEMATICAL PROGRESSIONS. 4 Credits.**

**Notes:** may be repeated for credit.

**Pre-requisites:** junior standing.

Focuses on the practical development of conceptually connected lesson sequences. Students plan a sequence of lessons that meet state standards and is mathematically coherent. This plan addresses the conceptual development of the topics. Throughout, students explore the mathematical derivation of this and related topics, anticipate students' future development and history with the topic, adapt their lesson plans to be suitable for the students in their classroom, and assess its effectiveness.

## **MTED 477. MATHEMATICAL DISCUSSIONS. 4 Credits.**

**Pre-requisites:** junior standing or permission from the instructor.

Focuses on the development of implementing student-centered lesson plans to learn how to plan and lead effective mathematical discussions for both small groups and the whole class. Students learn how to implement inquiry-based teaching techniques to plan and facilitate productive discussions in a mathematics classroom through readings, discussion, lesson planning, and in-class teaching simulations.

## **MTED 490A. SENIOR CAPSTONE: ELEMENTARY PRACTICUM. 5 Credits.**

**Notes:** MTED 490A fulfills the Capstone requirement for the Math/Elementary majors, and MTED 490B fulfills the Capstone requirement for the Math/Secondary majors.

**Pre-requisites:** senior standing.

**Satisfies:** a university graduation requirement—senior capstone.

Practicum for Mathematics Education majors. Students complete a pre-student teaching classroom experience in a K–12 mathematics classroom (3 credits) and participate in a seminar (2 credits). Lessons are planned and taught. Emphasis is on putting educational theory into practice and reflecting on the process, particularly in the areas of problem solving, the NCTM Standards, use of manipulative materials, and assessment.

**MTED 490B. SENIOR CAPSTONE: SECONDARY PRACTICUM. 5 Credits.**

**Notes:** MTED 490A fulfills the Capstone requirement for the Math/Elementary majors, and MTED 490B fulfills the Capstone requirement for the Math/Secondary majors.

**Pre-requisites:** senior standing; MTED 425 or MTED 476.

**Satisfies:** a university graduation requirement—senior capstone.

Practicum for students majoring in Mathematics Education. Students complete a pre-student teaching classroom experience in a K–12 mathematics classroom (3 credits) and participate in a seminar (2 credits). Lessons are planned and taught. Emphasis is on putting educational theory into practice and reflecting on the process, particularly in the areas of problem solving, the NCTM Standards, use of manipulative materials, and assessment.

**MTED 492. UNDERGRADUATE RESEARCH IN MATHEMATICS EDUCATION. 1-4 Credits.**

**Notes:** may be repeated for credit.

**Pre-requisites:** junior standing; at least one prior MTED course is highly recommended.

Students read current research in mathematics education, write research questions, design a research project, carry out the project, and present their results to an audience either as a presentation or as a written report submitted to a journal.

**MTED 496. EXPERIMENTAL COURSE. 1-5 Credits.**

Experimental.

**MTED 499. DIRECTED STUDY. 1-5 Credits.**

Directed Study.

**MTED 599. INDEPENDENT STUDY. 1-6 Credits.**

Independent study.