

MATHEMATICS EDUCATION (MED)

MED 500 PRACTICUM I: GRADUATE FIELD EXPERIENCE IN SECONDARY MATHEMATICS EDUCATION

3, 1/4

Current school mathematics practices; related mathematics teaching periodicals and policy documents; affective and societal issues surrounding teaching; reflective observation of teaching and learning and the classroom, school, and community contexts in which they occur.

MED 501 PRACTICUM II: PRACTICE TEACHING MATHEMATICS IN THE MIDDLE SCHOOL

3, 0/6

Prerequisites: Admission to the MS. Ed. Adolescence Education certification program; successful completion of all coursework preceding student teaching; Introduction to the practice of classroom teaching for the prospective middle school mathematics teacher. Eight weeks (40 days) of classroom practice including experiences with classroom discipline, instructional planning, curriculum, assessment and testing, field observation, peer presentations, construction and critique of lesson plans, unit designs, uses of technology and media, and research and use of successful teaching strategies for the mathematics classroom in early and middle adolescence.

MED 502 PRACTICUM III: PRACTICE TEACHING MATHEMATICS IN THE HIGH SCHOOL

3, 0/6

Prerequisites: Admission to the MS. Ed. Adolescence Education certification program; successful completion of all coursework preceding student teaching; Introduction to the practice of classroom teaching for the prospective high school mathematics teacher. Eight weeks (40 days) of classroom practice including experiences with classroom discipline, instructional planning, curriculum, assessment and testing, field observation, peer presentations, construction and critique of lesson plans, unit designs, uses of technology and media, and research and use of successful teaching strategies for the mathematics classroom for mid and late adolescence.

MED 524 MATHEMATICS INSTRUCTION AT THE SECONDARY LEVEL

1, 1/0

Prerequisite: Education major or mathematics education postbaccalaureate certification program major. Content, teaching methods, activities, and evaluation procedures typically used in mathematics instruction at the secondary level.

MED 588 TOPICS COURSE

3, 3/0

MED 590 INDEPENDENT STUDY

1-3, 0/0

MED 595 RESEARCH METHODS AND TECHNIQUES IN MATHEMATICS EDUCATION

3, 3/0

Prerequisite: 9 credit hours of graduate-level coursework in mathematics. Nature of educational research; problem analysis; descriptive and inferential statistics; experimental design; strategy of historical, descriptive, and experimental studies.

MED 598 MICRO COURSE

1-3, 0/0

Examination of significant disciplinary issues, topics, or practices

MED 600 CONTEMPORARY MATHEMATICS CURRICULUM DEVELOPMENT

3, 3/0

Contemporary mathematics curricular developments in the United States and other countries, and the forces that shape these developments; historical background influencing current curricular developments; mathematics curricula and their relation to school and society.

MED 601 SEMINAR IN THE TEACHING OF MATHEMATICS

3, 3/0

This course provides an introduction to the theory and practice of classroom teaching for prospective secondary mathematics teachers. Topics include learning theory, construction and critique of lesson and unit plans, use of technology, research on teaching and learning that includes addressing the needs of students with diverse mathematical abilities and English Language Learners, assessment, classroom management, state and national standards, and curricular issues.

MED 602 MATHEMATICS FOR THE SECONDARY SCHOOL TEACHER: SELECTED TOPICS

3, 3/0

This selected topics course will focus on the classroom implementation of high quality mathematics materials that include assessment of prior knowledge, development of conceptual understanding and procedural knowledge, and provide ongoing opportunities for formative assessment through a problem-based approach to teaching and learning mathematics.

MED 604 TEACHING OF GEOMETRIC CONCEPTS

3, 3/0

Prerequisite: Acceptance to the mathematics master's degree program. Traditional Euclidean approach; transformational, computer-based, and integrated approaches to the teaching and learning of geometric concepts in high school; learning theory, pedagogy, mathematical models, and new developments specific to the teaching of geometric concepts in the high school curriculum.

MED 605 TEACHING OF ALGEBRAIC CONCEPTS

3, 3/0

Prerequisite: Acceptance to the mathematics master's degree program. Structuralist, intuitive, historical, and applied approaches to the teaching of concepts of algebra; learning theory, pedagogy, mathematical models, and new developments specific to the teaching of algebraic concepts in the high school curriculum.

MED 606 LOGO AND MATHEMATICS LEARNING

3, 3/0

History of LOGO language development; use of LOGO in the secondary and elementary schools; turtle graphs and the use of LOGO in problem solving. Appropriate for teachers of math and science, as well as teachers of other subjects.

MED 607 TECHNOLOGY IN MATHEMATICS EDUCATION

3, 3/0

Use and evaluation of equipment and software for the mathematics classroom: developing classroom lessons using technology for mathematics; investigating the uses of adaptive technology in mathematics. Student produce projects for use in their classrooms and learn how to assess accessibility in software design.

MED 683 PROBLEM SOLVING AND PROBLEM POSING

3, 3/0

Prerequisite: Acceptance to the mathematics master's degree program. Techniques of problem solving and problem posing in mathematics: role of teaching problem solving in the high school setting.

MED 690 MASTER'S PROJECT

1-9, 0/0

Study undertaken by one or more individuals, under the supervision of a member of the graduate mathematics faculty, on a problem of special interest submitted in acceptable form according to directions given by the Mathematics Department.

MED 721 THESIS/PROJECT CONTINUATION

0, 0/0

MED 722 THESIS/PROJECT EXTENDED

0, 0/0

MED 795 MASTER'S THESIS IN MATHEMATICS EDUCATION

3, 3/0

Individual investigation of original problem, conducted under the supervision of a member of the graduate mathematics faculty, submitted in acceptable form according to directions given by the Graduate School.