MED 200 FOUNDATIONS OF TEACHING MATHEMATICS 7-12 AND FIELD EXPERIENCE
3, 1.5/0; DI14
Prerequisites: MAT 161 or permission of instructor. Current policies and practices in the field of mathematics education including content and pedagogy, national and state standards, and psychological, social, cultural and gender factors that affect the teaching and learning of mathematics. Field experiences in secondary mathematics classrooms that feature racial and ethnic diversity, diversity in SES, and include students with diverse mathematical abilities as well as those identified as having special needs. Offered every semester. Equivalent Course: SED 200

MED 300 FIELD EXPERIENCE: METHODS IN THE TEACHING OF SECONDARY SCHOOL MATHEMATICS
3, 2/0
Corequisite: MED 308. Supervised field experience at the middle and/or high school level. Emphasis on implementing pedagogical knowledge, understanding, and practice consistent with state and national mathematics teaching standards discussed in MED 308. Students design and deliver lessons and assessments in a variety of settings (i.e. small group, large group) during 30 hours of clinical experience at local schools. Offered every semester. Equivalent Course: MED 308W

MED 307 USES OF TECHNOLOGY IN THE TEACHING OF MATHEMATICS
3, 3/0

MED 308 METHODS IN THE TEACHING OF SECONDARY SCHOOL MATHEMATICS
3, 3/0; CT14, IM14, WIIF
Minimum of 30 hours of MAT courses completed with a GPA of 2.75. Minimum of 9 hours of Professional courses including MED 200 and MED 307 with a GPA of 2.75. Permission of instructor. Corequisite: MED 300. Introduction to the research based practice of classroom teaching for the prospective secondary mathematics teacher. Students create lesson plans for instruction that engages all learners through the use of virtual and concrete models, technology, innovative curricula, and mathematical modeling; evaluation and assessment; meeting the needs of diverse learners; classroom management in a variety of settings (i.e., small group, large group). Lectures, peer presentations, construction and critique of lesson plans, use of media, and research of teaching strategies. Offered every semester. Equivalent Course: MED 308W

MED 309 FIELD EXPERIENCE: METHODS IN TEACHING OF SECONDARY SCHOOL MATHEMATICS
3, 3/0
Prerequisites: Must be enrolled in 0524; a minimum of 24 hours of the math concentration completed with a GPA of 2.5 or higher; a minimum of 6 hours of professional education courses completed with a GPA of 2.5 or higher; permission of instructor. Corequisite: MED 308. Preparation to teach mathematics in grades 5-9. Includes techniques and models used to teach mathematics at the middle-school level in the context of current research on how children learn mathematics. Offered spring only.

MED 383 LEARNING AND TEACHING PROBLEM SOLVING
3, 3/0; WIIF
Prerequisites: CWP 102, MAT 162 or MAT 127, MAT 270, upper-division status. Experiences in mathematical problem-solving; learning through problem-solving; consideration of diverse perspectives and problem-solving approaches; strategies for teaching the use of a problem based approach; the historical and current roles of problem solving in secondary mathematics. Offered every semester. Equivalent Course: MED 383W

MED 385 USES OF TECHNICAL AIDS IN THE TEACHING OF MATHEMATICS
3, 0/0
See the Undergraduate Course Catalog (http://catalog.buffalostate.edu/undergraduate/docs/currentugcat.pdf).
MED 406 STUDENT TEACHING OF MATHEMATICS IN THE LOWER MIDDLE GRADES 5-6
6, 0/0
Prerequisites: Completion of MED 200, MED 307, MED 309, MED 383W, SPF 303, all required mathematics courses, and 6 credit hours of upper-division mathematics courses; minimum GPA of 2.5 in all mathematics and education coursework; senior status. Lower middle school laboratory experiences, goals of lower middle school education, psychological influences, teaching models, assessment techniques, classroom management, total involvement in lower middle school activities, practicum. Offered occasionally.

MED 407 STUDENT TEACHING OF MATHEMATICS IN JUNIOR HIGH/MIDDLE SCHOOL
6, 0/0
Prerequisites: Completion of MED 308 and MED 309 or MED 309 with a minimum grade of C; completion of all mathematics coursework; minimum cumulative GPA of 2.5 in all major mathematics courses; completion of all education courses with a minimum cumulative GPA of 2.5; senior status; and instructor permission. Supervised teaching experience five full days a week for approximately eight consecutive weeks in an early secondary mathematics classroom. Effective demonstration of content knowledge, pedagogical preparation, instructional delivery, classroom management, knowledge of student development, collaboration with school professionals, and reflectivity of practice required. Offered every semester.

MED 408 STUDENT TEACHING OF MATHEMATICS IN HIGH SCHOOL
6, 0/0
Prerequisites: MTS major; completion of MED 308 and MED 300 with a minimum grade of C; completion of all mathematics degree coursework; minimum cumulative GPA of 2.5 in all major mathematics courses; completion of all education courses with a minimum cumulative GPA of 2.5; senior status; and instructor permission. Supervised teaching experience five full days a week for approximately eight consecutive weeks in an early secondary mathematics classroom. Effective demonstration of content knowledge, pedagogical preparation, instructional delivery, classroom management, knowledge of student development, collaboration with school professionals, and reflectivity of practice required. Offered every semester.

MED 495 SPECIAL PROJECT
1-3, 0/0
See the Undergraduate Course Catalog (http://catalog.buffalostate.edu/undergraduate/docs/currentugcat.pdf).

MED 499 INDEPENDENT STUDY
3-12, 0/0
Offered every semester.

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 postbaccalaureate certification program; successful completion of all coursework in the postbaccalaureate certification program; recommendation from a member of the mathematics education graduate faculty committee. Introduction to the practice of classroom teaching for the prospective middle/junior high school mathematics teacher. Field experience with classroom discipline, instructional planning, curricular issues, assessment and testing, field observation and participation, peer presentations, construction and critique of lesson plans, use of media, and research and use of teaching strategies.

MED 502 PRACTICUM III: PRACTICE TEACHING MATHEMATICS IN THE HIGH SCHOOL
3, 0/6
Introduction to the practice of classroom teaching for prospective high school mathematics teachers. Field experience with classroom discipline, instructional planning, curricular issues, assessment and testing, field observation and participation, peer presentations, construction and critique of lesson plans, use of media, and research and use of teaching strategies.

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 594 GRADUATE WORKSHOP
1-3, 0/0
See the Graduate Course Catalog (http://www.buffalostate.edu/graduateschool/documents/courselists.pdf)

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
See the Graduate Course Catalog (http://www.buffalostate.edu/graduateschool/documents/courselists.pdf)

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
Techniques and topics for teaching mathematics in grades 7 through 12.

MED 602 MATHEMATICS FOR THE SECONDARY SCHOOL TEACHER: SELECTED TOPICS
3, 3/0
Prerequisite: Instructor permission. Selected topics in mathematics related to the secondary mathematics curriculum.

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 available for the mathematics classroom: developing classroom lessons using the equipment and software; preparation for adoption of future developments. Students produce projects for use in their classrooms.

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.