Courses

**MTHT 400. Methods of Teaching Secondary Mathematics I. 3 or 4 hours.**
Philosophies, issues, techniques, and styles of teaching high school mathematics. Implications of psychological models. Mathematics in the evolving curriculum. Preparation of lessons. Course Information: 3 undergraduate hours. 4 graduate hours. To be taken in the year prior to student teaching. Prerequisite(s): Grade of C or better in MTHT 410, enrollment in B.S. or M.S. in the Teaching of Mathematics program in Secondary Mathematics Education, and a 2.50 grade point average in mathematics courses at the level of calculus or above.

**MTHT 401. Methods of Teaching Secondary Mathematics II. 3 or 4 hours.**
Philosophies, issues, techniques and styles of teaching high school mathematics. Preparation of diverse lessons. Supervised teaching experience. Course Information: 3 undergraduate hours. 4 graduate hours. To be taken in year prior to student teaching. Prerequisite(s): Grade of C or better in MATH 210 and enrollment in the B.S. or M.S. in the Teaching of Mathematics program in Secondary Mathematics Education; and a 2.50 grade point average in mathematics courses at the level of calculus or above.

**MTHT 411. Advanced Euclidean Geometry. 3 or 4 hours.**
Axioms for Euclidean geometry are developed based upon reflections. Further concepts in Euclidean geometry which arise from these axioms are explored. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): Grade of C or better in MATH 215.

**MTHT 420. Computers in Secondary School Mathematics. 3 or 4 hours.**
An overview of techniques, topics and tools for teaching secondary level mathematics using computers. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): Grade of C or better in MATH 210.

**MTHT 430. Real Analysis for Teachers I. 3 or 4 hours.**
Major topics include real number system with emphasis on the completeness axiom, limits of sequences and functions, derivatives, Riemann integrals and the Fundamental Theorem of Calculus. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): Grade of C or better in MATH 210 and MATH 215.

**MTHT 435. Abstract Algebra. 3 or 4 hours.**
Sets, properties of integers, groups, rings, fields. Focus on concepts applicable to high school teaching. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): MATH 210 and MATH 215.

**MTHT 438. Educational Practice with Seminar I. 6 hours.**
The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in grades six through twelve. Course Information: Graduate credit only with approval of the department. Prerequisite(s): 2.50 grade point average in mathematics courses at the level of calculus or above, successful completion of 100 clock hours of pre-student-teaching field experiences, and approval of the department. Class Schedule Information: To be properly registered, students must enroll in one Lecture-Discussion and one Practice.

**MTHT 439. Educational Practice with Seminar II. 6 hours.**
The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in grades six through twelve. Course Information: Graduate credit only with approval of the department. Prerequisite(s): Credit or concurrent registration in MTHT 438; and approval of the department and a 2.50 grade point average in mathematics courses at the level of calculus or above and successful completion of 100 clock hours of pre-student teaching field experiences. Class Schedule Information: To be properly registered, students must enroll in one Conference and one Practice.

**MTHT 450. Concepts and Methods in Elementary and Middle School Mathematics I. 3 or 4 hours.**
Advanced analysis of concept development and teaching methods. Sorting, classifying, counting, number tracking, addition, subtraction, group, place value, length, area and alternative teaching strategies. Course Information: 3 undergraduate hours. 4 graduate hours. For elementary school teachers. Prerequisite(s): Graduate standing and admission to the M.S. in the Teaching of Mathematics program (Option for Elementary School Teachers) or consent of the instructor.

**MTHT 465. Teaching Algebra for Understanding. 3 or 4 hours.**
Manipulatives and other representations of mathematical concepts used for teaching algebra to middle grade students. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): Admission to the M.S. in the Teaching of Mathematics program (Option for Elementary School Teachers) or consent of the instructor.

**MTHT 466. Introduction to Calculus and the Graphing Calculator. 4 hours.**
Problem solving using derivatives, differentials, and their applications followed by integrals and their applications. Maximum minimum problems solved directly by graphs, then by derivatives. Course Information: Prerequisite(s): Admission to the Mathematics Education Concentrators Program or consent of the instructor.

**MTHT 467. Introduction to Number Theory with Application. 4 hours.**
Classical topics of elementary number theory and how they pertain to teaching the upper grades. Primes, GCF, LCM, divisibility, floor and ceiling functions, Gaussian Residue, lattices. Course Information: Prerequisite(s): Admission to the Mathematics Education Concentrators Program or consent of the instructor.

**MTHT 468. Geometry with Applications for Middle Grade Teachers. 4 hours.**
Plane and solid figures and their properties. Polygons and polyhedra. Euler's formula. Volume versus surface area. Spatial visualization; two dimensional representations of three dimensional figures. Course Information: Prerequisite(s): Admission to the Mathematics Education Concentrators Program or consent of the instructor.

**MTHT 470. Teaching Mathematics with Science: An Activity Approach I. 3 or 4 hours.**
Introduction to basic variables (length, area, volume, mass, time) and the Scientific Method (picture, table, graph, questions). Extensive use of TIMS project curriculum. Course Information: 3 undergraduate hours. 4 graduate hours. For elementary school teachers. Prerequisite(s): Admission to the M.S. in the Teaching of Mathematics program (Option for Elementary School Teachers) or consent of the instructor.

**MTHT 490. Topics in Teaching Secondary Mathematics. 1-5 hours.**
Course content is announced prior to each term in which it is given. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Prerequisites may vary according to topic.
MTHT 491. Topics in Teaching Elementary/Junior High School Mathematics. 1-5 hours.
Course content is announced prior to each term in which it is given. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Prerequisites may vary according to topic.

MTHT 496. Independent Study. 1-4 hours.
Reading course supervised by a faculty member. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Approval of the instructor and the department. Class Schedule Information: This course counts toward the limited number of independent study hours accepted toward the degree and the major.

MTHT 510. Introduction to Higher Geometry. 4 hours.
Projective geometry, as an extension of Euclidean geometry, treated synthetically and/or algebraically. Desargues’ and Pappus’ theorems, subgeometries, conics and the underlying skew field. Course Information: For graduate students in mathematics teacher education programs. Other students enroll in MATH 440. Prerequisite(s): Grade of C or better in MATH 330.

MTHT 530. Mathematical Analysis for Teachers II. 4 hours.
Derivatives, inverse functions, Riemann integral, trigonometric functions, logarithmic and exponential functions. Course Information: Prerequisite(s): Grade of C or better in MTHT 430 or consent of the instructor.

MTHT 550. Concepts and Methods in Elementary and Middle School Mathematics II. 4 hours.
Methods of teaching middle school mathematics: concept development; focus on classroom materials to promote learning. Area, volume, rational numbers, decimals, function machines. Course Information: Prerequisite(s): MTHT 450 or consent of the instructor.

MTHT 560. Introduction to Analytic Geometry and Calculus. 4 hours.
Programmable calculators used to investigate ideas and applications of analytic geometry, differential and integral calculus. Examples and ideas relevant to elementary mathematics and science curricula. Course Information: For elementary school teachers. Do not purchase a calculator until after the first day of class. Prerequisite(s): MTHT 460 or consent of the instructor.

MTHT 565. Teaching Geometry: An Activity Approach. 4 hours.
Informal geometry using manipulatives, elementary topological concepts, polygons, polyhedra, metric geometry, motion geometry, geometric constructions, spherical geometry, introduction to research on the learning of geometry. Course Information: For elementary school teachers. Enrollment in the M.S. in the Teaching of Mathematics program (Option for Elementary School Teachers) or consent of the instructor.

MTHT 575. Principles of Probability and Statistics. 4 hours.
Probability, descriptive and inferential statistics, implications for teaching. Emphasis on collection and analysis of data, classroom activities and software. Course Information: For elementary school teachers. Prerequisite(s): Admission to the M.S. in the Teaching of Mathematics program (Option for Elementary School Teachers) or approval of the department.

MTHT 589. Practicum in Teaching Elementary School Mathematics. 4 hours.
Culminating experience for students in the M.S. in the Teaching of Mathematics (Option for Elementary School Teachers). Major project is required. Supervised weekly seminars. Course Information: Prerequisite(s): Admission to the M.S. in the Teaching of Mathematics program (Option for Elementary School Teachers) and consent of the instructor.

MTHT 590. Topics in Teaching Secondary Mathematics. 1-5 hours.
Course content is announced prior to each term in which it is given. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Prerequisite may vary according to topic.

MTHT 591. Topics in Teaching Elementary/Junior High School Mathematics. 1-5 hours.
Course content is announced prior to each term in which it is given. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Prerequisite may vary according to topic.

MTHT 592. Topics in Advanced Mathematics for Teachers. 1-5 hours.
Course content is announced prior to each term in which it is given. Course Information: May be repeated. Students may register in more than one section per term. For students in the M.S. in the Teaching of Mathematics program. Prerequisite(s): Prerequisite may vary according to topic.

MTHT 596. Independent Study. 1-4 hours.
Reading course supervised by a faculty member. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Approval of the instructor and the department.