MATHEMATICS EDUCATION (MTHE)

MTHE 235 Mathematics for Elementary Teachers I
3 credits
Mathematical development of arithmetic and problem solving as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk.
Prereq: MATH 143 or sufficient score on SAT, ACT, or COMPASS Math Test.

MTHE 236 Mathematics for Elementary Teachers II
3 credits
Mathematical development of informal geometry, problem solving, and probability and statistics as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk.
Prereq: MTHE 235.

MTHE 301 Early Childhood Mathematics
4 credits
Focus on the mathematics for early childhood: numbers and operations, algebraic thinking, geometry, measurement, probability and statistics. Emphasis will be placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300-level mathematics course in any major or minor in the College of Science.
Prereq: One general education math course.

MTHE 303 Early Childhood Math I
2 credits
Focus on the mathematics of early childhood: numbers and operations. Emphasis is placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300-level mathematics course in any major or minor in the College of Science. Recommended preparation: general education math course.

MTHE 304 Early Childhood Math II
2 credits
Focus on the mathematics of early childhood: algebraic reasoning, geometry, measurement, probability and statistics. Emphasis is placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300-level mathematics course in any major or minor in the College of Science. Recommended preparation: general education math course.

MTHE 409 Algebraic and Functional Reasoning
3 credits
Examines the understandings that are foundational to advanced algebraic concepts, and how grade 5-10 students develop these ideas. Topics include strategies for solving equations and systems, covariational reasoning, properties of linear, quadratic, exponential, and trigonometric functions.

MTHE 410 Proof and Viable Argumentation
3 credits
Develops viable argumentation as it can be found in grades 5-10 as a means of learning content, deepening understanding, and determining what is true and what is false mathematically. Topics include the language of argumentation, argument types, reasoning types, the distinction between proofs and viable arguments. Emphasizes how different argument types can contribute to student learning and increasing student discourse.

MTHE 513 Problem Solving Through History
3 credits
Historical study of approaches to solving problems in geometry, number theory, and set theory. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 514 Foundations of Calculus
3 credits
Real numbers, sequences, topology of the real numbers, continuous functions, differentiation, and integration; emphasis on developing the conceptual understanding needed to teach calculus in secondary school. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 515 Problems in Geometry
3 credits
Exploration of topics in geometry with emphasis on developing geometric reasoning and problem solving. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 516 Groups and Symmetry
3 credits
Exploration of groups, symmetry, and permutations. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 519 (s) Special Topics
Credit arranged
Special topics of interest to mathematics teachers. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.
Prereq: Permission.

MTHE 527 Transformational Geometry
3 credits
Cross-listed with MATH 427. Geometry concepts of congruence, parallelism, and similarity using rigid motions; the group structure of the collection of isometries and their matrix representations. For graduate credit, additional transformational approaches for calculus integration strategies are required. The course is of particular interest to secondary mathematics teaching majors.
Prereq: MATH 330 or equivalent.

MTHE 590 Seminar in Math Education
1-3 credits, max arranged
Topics in Mathematics Education. May be repeated for credit. Cooperative: open to WSU degree-seeking students.