MATHEMATICS EDUCATION (MTHE)

MTHE 2350 Mathematics for Elementary Teachers I (3 credits)
Mathematical development of arithmetic and problem solving as those subjects are currently taught in elementary schools. Three lectures and one 1-hour lab per week. Typically Offered: Fall and Spring.

MTHE 2360 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 lectures and one 1-hour lab per week.
Prereqs: MTHE 2350

MTHE 4090 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 4100 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, and the distinction between proofs and viable arguments. Emphasizes how different argument types can contribute to student learning and increasing student discourse.

MTHE 5130 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 M. A. T. program in Mathematics and will not satisfy the requirements of other mathematics degree programs.

MTHE 5160 Groups and Symmetry (3 credits)
Exploration of groups, symmetry, and permutations. This course is specifically designed for the M. A. T. program in Mathematics and will not satisfy the requirements of other mathematics degree programs.

MTHE 5270 Transformational Geometry (3 credits)
Joint-listed with MATH 4270
Geometry concepts of congruence, parallelism, and similarity using rigid motions; the group structure of the collection of isometries and their matrix representations. The course is of particular interest to secondary mathematics teaching majors.