

# MATHEMATICS EDUCATION (MATE)

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**MATE 601 Math Topics for Educators** 1-4 cr

Examines topics addressed in middle school mathematics and more advanced math topics, at the sophomore math major level, from one of these four areas: Problem solving, reasoning, and numeration; Properties of patterns and relations, and algebra; Euclidean geometry and measurement; Integration of the above areas with probability and statistics. Not open to math majors.

**Prerequisite:** Instructor Approval

**Repeatable:** Unlimited Credits

**MATE 602 History of Mathematics** 3 cr

Provides an overview of the development of mathematical concepts. The focus will be on those key moments when new discoveries, challenges, and situations expanded or changed the field of mathematics.

**MATE 651 Calculus for High School Teachers** 3 cr

Designed for high school teachers of calculus and precalculus. The key elements of functions, limits, derivatives, and integrals will be reviewed. There will be extensive exploration upon the numerous manners in which these objects can be introduced, defined, depicted, and explained to students. Common areas of difficulty for students will be discussed, along with tricks, proofs, illustrations, and demonstrations designed to overcome these difficulties.

**MATE 652 Understanding Math Concepts Using Technology** 3 cr

Presents content and methods for teaching mathematic concepts to students using technology to enhance understanding. It is designed for teachers who are currently teaching middle and high school mathematics courses or are in a teacher training program.

**MATE 653 Algebra** 3 cr

The key features, formulas and concepts of algebra will be discussed in detail, along with proofs and illustrations. The prerequisite material for algebra learners will be examined, as well as ways to review it efficiently. Common areas of difficulty in Algebra will be discussed, along with tricks, proofs, stories, games, illustrations, activities and demonstrations designed to overcome those difficulties.

**MATE 654 Geometry** 3 cr

Covers vocabulary, formulas, transformations, proofs and compass-and-straight-edge constructions. There will be extensive exploration of the various ways these geometric objects and concepts can be introduced, defined, depicted and explained. Common areas of difficulty in geometry will be discussed, along with tricks, proofs, illustrations and demonstrations designed to overcome these difficulties.