### MAE Mathematics Teacher Preparation

**MAE 301 Foundations of Secondary School Mathematics**
A re-examination of elements of school mathematics, including topics in algebra, geometry, and elementary functions. Competence in basic secondary-level ideas and techniques are tested.

*Prerequisites:* MAT 200 and 211; admission to mathematics or applied mathematics secondary teacher preparation program

*Corequisite:* MAE 311

3 credits

**MAE 302 Methods and Materials for Teaching Secondary School Mathematics**
The goals of mathematics education, learning theories, mathematics curricula, lesson planning, evaluation and teaching strategies. Lesson plans are drawn up and presented to the group.

*Prerequisites:* MAE 301 and C or higher in MAE 311

*Pre- or Corequisite:* MAE 312

3 credits

**MAE 311 Introduction to Methods of Teaching Secondary School Mathematics**
Aspects of teaching mathematics on the secondary school level, including lesson designs based on the NCTM standards, cooperative learning, and technology in mathematics education. Students observe classes in middle school and high school settings.

*Prerequisites:* MAT 211; admission to mathematics or applied mathematics secondary teacher preparation program; department consent

*Corequisite:* MAE 301

3 credits

**MAE 312 Micro-Teaching**
Twice-weekly supervised classroom experience, tutoring, or working with small groups of students as a teacher’s aide.

*Prerequisite:* C or higher in MAE 311

*Pre- or Corequisite:* MAE 312

2 credits

**MAE 330 Technology in Mathematics Education**
Introduces students in the secondary mathematics teacher preparation program to techniques and requirements for effective use of technology in the mathematics classroom. Emphasis on projects. Use of graphing calculators and computer software such as Geometer’s Sketchpad.

*Prerequisites:* MAE 301 and 311

3 credits

**MAE 412 Issues in Teaching and Learning in Collegiate Mathematics**
Investigation of the issues involved in the teaching and learning of introductory collegiate mathematics. A supervised teaching internship of undergraduate mathematics accompanies this seminar.

*Prerequisite:* MAE 302

4 credits

**MAE 447 Directed Readings in Mathematics Education**
Tutorial studies in recent advances in mathematics education.

*Pre- or Corequisite:* MAE 312

1 credit

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**MAE 451 Supervised Teaching-Middle School Level Grades 7-9**
Intensive supervised teaching in secondary schools. Students work in the school under the supervision of an experienced teacher.

*Prerequisites:* MAE 312; MAT 312, 319 and 360; AMS 310; permission of director of mathematics teacher education program

*Corequisites:* MAE 452 and 454

6 credits, S/U grading

**MAE 452 Supervised Teaching-High School Grades 10-12**
Intensive supervised teaching in secondary schools. Students work in the school under the supervision of an experienced teacher.

*Prerequisites:* MAE 312; MAT 312, 319 and 360; AMS 310; permission of director of mathematics teacher education program

*Corequisites:* MAE 451 and 454

6 credits, S/U grading

**MAE 454 Student Teaching Seminar**
Weekly discussions of teaching techniques and experiences, learning theory, curriculum content, and classroom problems.

*Corequisites:* MAE 451 and 452

3 credits