Master of Science in Mathematics

Option in Mathematics Education for Secondary School Teachers

(code MATHMS04)

Option in Mathematics Education for Secondary School Teachers is designed for people holding a California Single Subject Teaching Credential in Mathematics and teaching in middle, junior high, or high schools. This option will give students greater expertise in mathematics and mathematics education (curriculum, teaching, learning, assessment and research). The program includes a blend of courses from pure and applied mathematics, statistics, mathematics education, and also may include coursework from the College of Education.

Prerequisites

1. A bachelor’s degree in mathematics or mathematics education, or a bachelor’s degree with at least 24 upper division units in mathematics from an accredited college or university.
2. A California Single Subject Credential in Mathematics.
3. Course work in mathematics should include MATH 247, 310, 341, 355, 361A or 364A, and MATH/STAT 380 or equivalent with a grade of “C” or better.

Advancement to Candidacy

The regulations governing the master's degree are those in effect at the time of advancement to candidacy. In addition to University requirements stated elsewhere in this Catalog, must have completed prerequisites above and must have satisfied the Graduation Writing Assessment Requirement (GWAR). Must file for Advancement to Candidacy after completion of at least 6 units (and recommend filing before completing 9 units) on Program of Study, with an overall 3.0 grade-point average. Program of Study must be approved by Mathematics Education Graduate Advisor, Department of Mathematics and Statistics Chair and Associate Dean in the College of Natural Sciences and Mathematics.

Requirements

1. A minimum of 30 units of graduate level or approved upper division coursework which includes the following:
   • A. A minimum of 9 graduate or approved upper-division units of mathematics, including at least one 500-level mathematics course. If not previously taken for BS or credential, this course of study must include:
     • MATH 410 History of Modern Mathematics (3)
     • MATH 444 Introduction to Abstract Algebra (3)
   • B. A minimum of 15 graduate units of mathematics education including:
     • 1) Take both of the following:
       • MTED 511 Mathematics Teaching and Learning (3)
       • MTED 512 Curriculum and Assessment in Math (3)
     • 2) At least 9 units in mathematics education chosen in consultation with the Mathematics Education Graduate Advisor from the following courses:
       • MTED 540, 550, 560, 580, 590, 695
   • C. A minimum of 6 units of approved upper division or graduate electives from mathematics, mathematics education, or approved College of Education courses, chosen
in consultation with the Mathematics Education Graduate Advisor. If the student plans to teach at the Community College level, she/he must take at least 18 units of graduate or approved upper division mathematics from parts A and C. If the student intends to do a thesis he/she must take EDP 520 or the equivalent.

2. Complete one of the following two options:
   • A. Pass two comprehensive written examinations in mathematics education (one representing MTED 511/512 and one in a selected area - MTED 540, 550, 560, or 580);
   • B. Subject to the approval of the Mathematics Education Committee of the Department of Mathematics and Statistics, write a thesis in mathematics education and defend it orally (MTED 698);

Mathematics Education Thesis

Students choosing the thesis option must consult with the Mathematics Education Graduate Advisor to select a thesis advisor. A proposal is then written in consultation with the mathematics education faculty advisor who will guide the student in choosing the thesis topic and supervise the writing process. After a thesis topic is chosen it must be approved by the Mathematics Education Committee. A thesis committee of three faculty members, including the thesis advisor, is then chosen to approve the final work. During the writing of the thesis report, students must enroll in MTED 698.