MASTER OF SCIENCE IN TEACHING, LEARNING, AND LEADERSHIP
Option: Mathematics/Science Education

REQUIRED OF ALL STUDENTS FOR ADMISSION:
Undergraduate degree in education or related field; vita/resume; typewritten goals statement (about 500 words) consistent with mission of graduate degree program and program option; the equivalent of an undergraduate major or minor in mathematics or science OR a satisfactory score on the quantitative portion of the Graduate Record Exam. Faculty in each program option will review admissions materials once a month, make admissions recommendations, and assign a temporary advisor to admitted students in that program option. The review process may take 4-6 weeks fall and spring semesters or longer during summer session.

A minimum of 36 hours beyond the Bachelor’s degree is required.

COMMON CORE 6 hours
CIED 5053 Curriculum Issues®
CIED 5813 Educational Advocacy and Leadership®

RESEARCH REQUIREMENT 6 hours
SCFD 5913 Introduction to Qualitative Research OR
CIED 5073 Pedagogical Research OR
REMS 5953 Statistical Methods in Education OR
STAT 5013 Statistics for Experimenters I

PROGRAM CORE 6 hours
CIED 5623 Multicultural and Diversity Issues in Curriculum ® OR
SPED 5993 Culturally Responsive Teaching in Special Education AND
CIED 5293 Teaching and Learning Mathematics with Technology OR
CIED 5223 Teaching Science in Schools ®

AREAS OF EMPHASIS 12 hours
Mathematics Education
Choose 6 hours from the following:
CIED 5050 Integrating Mathematics and Science Applications
CIED 5253 Intermediate Mathematics Education®
CIED 5263 Assessment and Evaluation in Mathematics and Science Education
CIED 5270 Practicum in School Math
CIED 5273 Kindergarten-Primary Mathematics Education
CIED 5283 Problem-Centered Learning in Mathematics®
CIED 5293 Teaching and Learning Mathematics with Technology®
CIED 5613 Effective Teaching of Mathematics®
CIED 5750 Seminar in Mathematics Education

Choose 6 hours from courses with a MATH prefix that carry graduate credit:
(not an exhaustive list)
MATH 4013 Calculus of Several Variables
MATH 4033 History of Mathematics
MATH 4403 Geometry
MATH 4553 Linear and Nonlinear Programming
MATH 4583 Introduction to Mathematical Modeling
MATH 4463 Combinatorial Mathematics
MATH 4713 Number Theory
MATH 4813 Groups and Representations
MATH 6990 Topics in Collegiate Mathematics Education
Science Education
Choose 6 hours from the following:
CIED 5050  Integrating Mathematics and Science Applications
CIED 5223  Teaching Science in Schools®
CIED 5243  Environmental Education in the Curriculum
CIED 5263  Assessment and Evaluation in Mathematics and Science Education®
CIED 5280  Workshop in Science Education
CIED 5283  Problem Centered Learning in Mathematics®

Choose 6 hours of courses with science prefixes (BIO, CHEM, etc) that carry graduate credit:
(not an exhaustive list)
BIO 5100  Current Topics in Biology for Teachers
BIO 5117  Gross and Developmental Anatomy
BIO 5134  Neuroanatomy
BIO 6113  Human Embryology
BIO 6175  Cellular and Molecular Biology
BIO 6223  Medical Genetics
BIO 6263  Techniques in Molecular Biology
CHEM 5220  Modern Topics for Teachers
CHEM 5223  Chemistry of High Polymers
CHEM 5260  Inorganic Chemistry
CHEM 5283  Solid-State Chemistry
CHEM 5323  Reactions of Organic Compounds
CHEM 5443  Mechanism and Structure of Organic Chemistry
PHYS 5220  Modern Topics for Teachers
PHYS 5263  Particle Physics
PHYS 5313  Electromagnetic Theory

Integrated Math and Science
Choose 6 hours from the following:
CIED 5050  Integrating Mathematics and Science Applications
CIED 5243  Environmental Education in the Curriculum
CIED 5253  Intermediate Mathematics Education®
CIED 5263  Assessment and Evaluation in Mathematics and Science Education
CIED 5270  Practicum in School Math
CIED 5280  Workshop in Science Education
CIED 5283  Problem Centered Learning in Mathematics®
CIED 5613  Effective Teaching of Mathematics®
CIED 5750  Seminar in Mathematics Education

Choose 3 hours of courses with science prefixes and 3 hours of mathematics courses that carry graduate credit.

ELECTIVES or THESIS (Select thesis OR creative component and 6 hours of courses)  6 hours

® Indicates courses with at least one-third research content. Students in this program must complete at least three courses with an ®.

Faculty contact: Juliana Utley, 405-744-8111.