MASTER OF SCIENCE CURRICULUM AND INSTRUCTION-
MASTER MATHEMATICS TEACHER CERTIFICATION

Admission Requirements

- Baccalaureate Degree
- Minimum of cumulative 3.0 GPA or 3.0 GPA in last 60 hours of undergraduate degree program
- Letter of intent completed in the testing center
- Passing Score on the TExES exam
- Resume
- Official Scores on the GRE or MAT
- MMT Certification requires additional application through the TK20 (https://tamut.tk20.com/campustoolshighered/start.do) system.

Requirements must be submitted to the Graduate Studies Office by the designated deadline of first semester of enrollment.

Degree Requirements

Students should refer to their DegreeWorks degree audit in their Web for Students account for more information regarding their degree requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ED 520</td>
<td>Education Research Literature and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ED 547</td>
<td>Evaluating Learning</td>
<td>3</td>
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<tr>
<td>ED 551</td>
<td>Effective Strategies for Student Success</td>
<td>3</td>
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<tr>
<td>or ED 592</td>
<td>Interdisciplinary Curriculum Delivery</td>
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<tr>
<td>ED 573</td>
<td>Leadership and Mentoring in Education</td>
<td>3</td>
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<tr>
<td>ED 590</td>
<td>Curriculum Alignment for School Improvement</td>
<td>3</td>
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<tr>
<td>or ED 591</td>
<td>Interdisciplinary Curriculum Design</td>
<td></td>
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<tr>
<td>ED 577</td>
<td>Public School Law for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>ED 593</td>
<td>Teaching in a Multicultural Setting</td>
<td>3</td>
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<tr>
<td>ITED 520</td>
<td>Instructional Design and Development</td>
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<tr>
<td>MAED 501</td>
<td>Number Concepts and Algebra</td>
<td>3</td>
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<tr>
<td>MAED 502</td>
<td>Patterns and Geometry</td>
<td>3</td>
</tr>
<tr>
<td>MAED 503</td>
<td>Measurement, Probability and Statistics</td>
<td>3</td>
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<tr>
<td>9 semester credit hours in Approved area of concentration</td>
<td>9</td>
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<tr>
<td>Minimum Hours for Degree</td>
<td>36</td>
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</table>

Areas of concentration include education, special education, English, history, mathematics, science, science education, arts, reading, adult education, and instructional technology.

MMT Certification requires additional application through the Teacher Certification Office.

Graduate Courses in Mathematics Education

ED 520. Education Research Literature and Techniques. 3 Hours.
This course addresses the process and tools to locate, read, understand, and critique education research. The fundamental techniques of planning, conducting, and reporting qualitative and quantitative research will also be considered. Prerequisite: Must be admitted into the Alternative Certification Program.

ED 547. Evaluating Learning. 3 Hours.
This course addresses formative and summative assessments of learning. Related statistical analysis concepts are also studied. Prerequisite: ED 520 and must be admitted into the Alternative Certification Program.

ED 551. Effective Strategies for Student Success. 3 Hours.
This course focuses on effective best-practice teaching and learning strategies aligned to the written and assessed curriculum. Emphasis is placed on the use of research-based instructional strategies in the classroom. Prerequisite: ED 520.
ED 573. Leadership and Mentoring in Education. 3 Hours.
This course focuses on building leadership through research-based strategies. The role of the professional as consultant, mentor, and coach is discussed. Prerequisite: ED 520.

ED 577. Public School Law for Teachers. 3 Hours.
This course educates current and future teachers to become legally literate. A study of the federal and state legal framework will serve as the foundation for a more in-depth investigation of the impact of, and relationship between, constitutional, statutory, administrative, and judicial (case) law on a teacher’s personal and professional life. Prerequisite: None.

ED 590. Curriculum Alignment for School Improvement. 3 Hours.
This course addresses theories and related practices of applied curriculum leadership including topological and deep alignment of the written, taught, and tested curriculum. Students will study research-based curriculum-related elements of high performing schools. Prerequisite: ED 520.

ED 593. Teaching in a Multicultural Setting. 3 Hours.
This course surveys the historical, psychological, social, and economic factors influencing pupil behavior in the public school setting. Students investigate in-depth cross-cultural studies and teaching strategies relating to subject matter and social-education experiences of major U.S. minority groups.

ITED 520. Instructional Design and Development. 3 Hours.
This course provides students with experiences necessary to develop the knowledge, skills, and attitudes required for designing effective instruction that meets the needs of the information age. Students will explore the instructional systems development (ISD) process, from analysis through evaluation, and engage in authentic instruction design activities. This course replaces ITED 502 and 503. Prerequisite: Permission of the instructor.

MAED 501. Number Concepts and Algebra. 3 Hours.
This course is for elementary mathematics teachers seeking certification as Master Mathematics Teachers. The course provides a rigorous study of the concepts and applications of number concepts and algebra for the elementary classroom from advanced theoretical, historical, and pedagogical viewpoints. A research component will be required. Appropriate computer software and hand held technologies will be utilized. Prerequisite: Acceptance into the Master Mathematics Teacher Certification Program or instructor approval.

MAED 502. Patterns and Geometry. 3 Hours.
This course is for elementary mathematics teachers seeking certification as Master Mathematics Teachers. The course provides a rigorous study of the concepts and applications of patterns and geometry for the elementary classroom from advanced theoretical, historical, and pedagogical viewpoints. A research component will be required. Appropriate computer software and hand held technologies will be utilized. Prerequisite: Acceptance into the Master Mathematics Teacher Certificate Program or instructor approval.

MAED 503. Measurement, Probability and Statistics. 3 Hours.
This course is for elementary mathematics teachers seeking certification as Master Mathematics Teachers. The course provides a rigorous study of the concepts and applications of measurement, probability and statistics for the elementary classroom from advanced theoretical, historical, and pedagogical viewpoints. A research component will be required. Appropriate computer software and hand held technologies will be utilized. Prerequisite: Acceptance into the Master Mathematics Teacher Certificate Program or instructor approval.

MAED 520. Mathematics Methods for Secondary Education. 3 Hours.
The course is designed to provide experience with methods for teaching mathematics at the secondary level. Course content will focus on mathematics instruction and contemporary topics as outlined by the NCTM Principles and Standards for School Mathematics. Course instruction is designed to help the mathematics teacher understand how to better plan, develop, and implement teaching methods and strategies in the classroom. Appropriate computer software and hand held technologies will be utilized. Offered in the summer as needed. Prerequisite: At least 24 hours of undergraduate mathematics or instructor approval.

MAED 529. Workshop in Mathematics Education. 3 Hours.
This course is designed to provide in-service mathematics teachers with content knowledge and pedagogical techniques for teaching mathematics to grades K-12. Topics include problem solving, numbers and operations, patterns, functions, algebra, geometry and measurement, data analysis, statistics, probability, trigonometry, and calculus. Appropriate computer software and hand held technologies will be utilized. Offered in the summer as needed and may be repeated when topics vary. Prerequisite: At least 12 hours of undergraduate mathematics or instructor approval.

MAED 540. Problem Solving for Elementary Teachers. 3 Hours.
This course is designed to extend the participants’ knowledge and skills in teaching elementary mathematical concepts utilizing exploration, conjecture, communication, and reasoning strategies. There will be an emphasis on using logic and evidence rather than the textbook as authority; critical thinking rather than memorization, and problem solving rather than repetition, and the connection of concepts to real-world applications. Students will be challenged to expand and modify their current notions about effective elementary mathematical teaching. A research component will be required. Appropriate computer software and hand held technologies will be utilized. Prerequisite: At least 12 hours of undergraduate mathematics or instructor approval.

MAED 589. Individual Study. 3 Hours.
This course provides an option for individualized instruction and research. It may be repeated when topics vary. Prerequisite: Instructor approval.

MAED 597. Special Topics. 3 Hours.
This is an organized class and may be repeated when topics vary. Prerequisite: Instructor approval.
Faculty
Dr. Teri Fowler
Associate Professor
Email: teri.fowler@tamut.edu