

**AUSTIN PEAY STATE UNIVERSITY
MASTER IN EDUCATION
CURRICULUM AND INSTRUCTION
MATHEMATICS**

Advisor: Dr. Mary Lou Witherspoon 931-221-1005

PROGRAM DESCRIPTION:

The Mathematics Specialization is an advanced degree appropriate for licensed teachers of elementary school, middle school, or high school.

ADMISSION REQUIREMENTS:

- Undergraduate GPA of 2.75
- A calculated index score of 600 based upon the cumulative GPA attained on undergraduate courses taken as part of the bachelor's degree, times 100, plus the score attained on the verbal section of GRE.
- A calculated index score of 600 based upon the cumulative GPA attained on undergraduate courses taken as part of the bachelor's degree, times 100, plus the score attained on the quantitative section of GRE.
- Three recommendations for graduate work
- Teacher Licensure is required

APPLICATION REQUIREMENTS:

Degree: Master of Arts in Education (M.A. Ed.)

Major: Curriculum and Instruction

Specialization: Mathematics

MAJOR REQUIREMENTS:

Educ 5000 Research in Education (3)

MATH 5090 Research in Mathematics Education (3)

MATH 5940 Mathematics Education Research Paper (3)

MATH 5080 Mathematics in a Technological World (3)

MATH 5070 Methods, Materials, and Strategies in Teaching Mathematics (3)

Choose 2 courses:

Educ 6500 Seminar on Curriculum Improvement and Construction (3)

Educ 5200 Evaluation of Teaching and Learning (3)

Educ 6800 Seminar on Teaching Effectiveness (3)

Choose 3 courses:

MATH 5040 Number Theory for Elementary and Middle School Teachers (3)

MATH 5050 History of Mathematics for Elementary and Middle School (3)

MATH 5060 Probability and Statistics for Elementary and Middle School Teachers (3)

MATH 5020 Geometry for Elementary and Middle School Teachers (3)

MATH 5030 Problem Solving (3)

Milestone Review:

Students must complete three milestones while completing this program. Milestone I will be completed while in the first term of enrollment. Milestone II must be completed before enrolling capstone course. Milestone III occurs at graduation.

Portfolio Requirement:

Rather than completing comprehensive exams, candidates will complete a LiveText portfolio based on the standards of the National Board for Professional Teaching Standards - Mathematics

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**CURRICULUM AND INSTRUCTION – MATHEMATICS
 ALIGNMENT OF NATIONAL BOARD MATHEMATICS STANDARDS, COURSES, KEY
 ASSESSMENT, AND PORTFOLIO REVIEW**

MATHEMATICS STANDARDS	COURSES	KEY ASSESSMENT	PORTFOLIO
<p>Standard 1: Knowledge of Mathematics Accomplished mathematics teachers draw on their broad knowledge of mathematics to shape their teaching and set curricular goals. They understand significant connections among mathematical ideas and the application of those ideas not only within mathematics but also to other disciplines and the world outside of school.</p>	<p>MATH 5020 MATH 5030 MATH 5040 MATH 5050 MATH 5060</p>	<p>GPA in content courses, (Chosen from among MATH 5020, MATH 5030, MATH 5040, MATH 5050, MATH 5060, or appropriate substitutions)</p> <p>Solution of three problems from different content areas supported by an explanation of the significance of the problem and what was learned from it</p>	<p>Milestone III</p>
<p>Standard 2: Knowledge of Teaching Practice Accomplished mathematics teachers rely on their extensive pedagogical knowledge to make curricular decisions, select instructional strategies, develop instructional plans, and formulate assessment plans.</p>	<p>MATH 5070 MATH 5090 EDUC 6800 EDUC 6500</p>	<p>MATH UNIT Designed in MATH 5070</p>	<p>Milestone III</p>

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<p>Standard 3: Using Mathematics Accomplished mathematics teachers help students develop a positive disposition for mathematics and foster the development of all students' abilities to use mathematics as a way to understand the world around them. They focus instruction on developing students' mathematical power by providing opportunities for students to understand and apply mathematical concepts; investigate, explore, and discover structures and relationships; demonstrate flexibility and perseverance in solving problems; create and use mathematical models; formulate problems of their own; and justify and communicate their conclusions.</p>	<p>MATH 5020 MATH 5030 MATH 5070 MATH 5090</p>	<p>Grade in MATH 5090 Action Research Project from MATH 5090</p>	<p>Milestone III</p>
<p>Standard 4: Technology and Instructional Resources Accomplished mathematics teachers are knowledgeable about and, where available, use current</p>	<p>MATH 5080</p>	<p>MATH 5080 project that reflects an appropriate use of technology or other mathematical resources</p>	<p>Milestone III</p>

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<p>technologies and other resources to promote student learning in mathematics. They select, adapt, and create engaging instructional materials and draw on human resources from the school and the community to enhance and extend students' understanding and use of mathematics.</p>			
<p>Standard 5: Assessment Accomplished mathematics teachers integrate assessment into their instruction to promote the learning of all students. They design, select, and employ a range of formal and informal assessment tools to match their educational purposes. They help students develop self-assessment skills, encouraging them to reflect on their performance.</p>	<p>MATH 5940 MATH 5070</p>	<p>Artifact that shows the ability to create and use formal and informal assessments and to interpret statistics from standardized tests</p>	<p>Milestone III</p>

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Standard 6: Reflection and Growth Accomplished mathematics teachers regularly reflect on teaching and learning. They keep abreast of changes in mathematics and in mathematical pedagogy, continually increasing their knowledge and improving their practice.	MATH 5090 EDUC 5000 MATH 5940	Literature review from MATH 5090 or EDUC 5000	Milestone III
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