

# CHECK SHEET FOR MASTER'S DEGREE IN MATHEMATICS (AY 2024 - 25)

DEPARTMENT OF MATHEMATICS

University of Central Arkansas



## M.A. MATHEMATICS EDUCATION (30 HRS)

### Core Courses (9 Hours)

COURSE NO.	COURSE	CREDIT HRS	PREREQUISITE	SEMESTER OFFERED
MATH 6310	Advanced Algebra for Mathematics Educators	3	Consent of instructor	Three semester rotation
MATH 6350	Advanced Geometry for Mathematics Educators	3	Consent of instructor	Three semester rotation
MATH 6370	Advanced Calculus for Mathematics Educators	3	Consent of instructor	Three semester rotation

### Electives (21 Hours)

MATH 5300	Professionalized Subject Matter	3	Consent of instructor	Alternating Falls
MATH 5345	College Geometry	3	MATH 1496	Spring
MATH 6305	Mathematical Reasoning & Proof	3	Consent of instructor	Spring (Even Years)
MATH 6307	Advanced Topics for Mathematics Educators	3	Consent of instructor	Spring (Odd Year)
MATH 6325	Problem Solving & Modeling for Mathematics Educators	3	Consent of instructor	Summer (Even Years)
MATH 6335	Technological Tools for Mathematics Educators	3	Consent of instructor	Summer (Even Years)
MATH 6340	Historical Perspectives of Mathematics	3	Consent of instructor	Summers (Odd Years)
MATH 6395	Probability & Statistics for Mathematics Educators	3	Consent of instructor	Fall (Even Years)
MATH 6V82	Independent Study		Consent of advisor AND instructor	On Demand
MATH 6V96	Thesis (Variable credit up to six hours)		Consent of advisor AND instructor	As needed

With approval from the advisor, MA students may choose MS courses listed below as electives.

MATH 5306	Modeling and Simulation	3	MATH 2341, 3320, 3331, and 4371	Spring
MATH 5315	Introduction to Partial Differential Equations	3	MATH 2471 and 3331	Fall
MATH 5340	Numerical Methods	3	MATH 2341 and 3331	Spring
MATH 5362	Advanced Calculus I	3	MATH 2471	Spring (Even Years)
MATH 5371	Introduction to Probability	3	MATH 1497	Fall
MATH 5372	Introduction to Statistical Inference	3	MATH 5371	Spring
MATH 5373	Regression Analysis	3	MATH 5372 or Consent of instructor	Spring
MATH 5385	Complex Analysis	3	MATH 2371	Spring
MATH 5391	Machine Learning	3	MATH 5373 or Consent of instructor	Spring
MATH 5392	Time Series and Forecasting	3	MATH 5373 or Consent of instructor	Spring
MATH 5330	Mathematical Modeling in Biology	3	MATH 2341 and 3331	On Demand
MATH 5375	Introduction to Topology	3	Consent of instructor	On Demand
MATH 6315	Introduction to Number Theory	3	Consent of instructor	On Demand
MATH 6342	Mathematical Modeling	3	Consent of instructor	Spring
MATH 6345	Advanced Ordinary Differential Equations	3	MATH 3331 or equivalent	Fall
MATH 6357	Nonlinear Partial Differential Equations	3	MATH 4315/5315 or equivalent	Spring (Even Years)

### OTHER INFORMATION

**Thesis Option:** A candidate must earn at least 30 hours: a minimum of 24 hours of course work and a minimum of 6 thesis hours with at least 15 hours at the 6000 level. The candidate will select a thesis advisor at the time the Petition for Candidacy is submitted. At the end of the thesis hours, a candidate must produce a written thesis and present results. If a candidate who has selected the thesis option wishes to change to the non-thesis option, no credit will be granted for thesis courses.

**Non-Thesis Option:** A candidate must earn at least 30 hours with at least 15 hours at the 6000 level. All non-thesis option candidates for the MA degree will be required to pass a comprehensive examination. This examination will include two parts. The first is mathematical content from the three required courses, and the second is from selected topics in mathematics education.

**Requires a GPA of 3.0 or better to graduate**