

**REQUIREMENTS FOR THE B.S. DEGREE IN MATHEMATICS**  
**DEPARTMENT OF MATHEMATICS**  
**University of Central Arkansas**

**UCA STEM TEACH APPLIED MATHEMATICS OPTION**

**Core Courses (21 Hours)**

COURSE NO.	COURSE	CREDIT HRS	PREREQUISITE	SEMESTER OFFERED
MATH 1496	Calculus I	4	C or better in MATH 1390 and MATH 1392; or C or better in MATH 1580; or equivalent.	Fall, Spring, & Summer
MATH 1497	Calculus II	4	C or better in MATH 1496.	Fall, Spring, & Summer
MATH 2335	Transition to Advanced Math	3	MATH 1497	Fall & Spring
MATH 2471	Calculus III	4	C or better in MATH 1497	Fall, Spring, & Summer
MATH 3320	Linear Algebra [ <b>Upper Core : I</b> ]	3	MATH 1497 or 2330	Fall, Spring, & Summer
MATH 4371	Intro to Probability [ <b>Upper Core:R</b> ]	3	MATH 1497	Fall

**Required Courses (25 Hours)**

MATH 2441	Mathematical Computation	4	MATH 1497	Fall & Spring
MATH 3331	ODE I [ <b>Upper Core : C</b> ]	3	MATH 1497	Fall & Spring
MATH 4305	ODE II	3	MATH 3320, 3331	Fall
MATH 4306	Modeling and Simulation [ <b>Upper Core: Z</b> ]	3	MATH 4305	Spring
MATH 4313	Functions and Modeling	3		Fall
MATH 4345	College Geometry	3	MATH 1496	Spring
MATH 4372	Introduction to Statistical Inference	3	MATH 4371	Spring
MATH 4315 <b>OR</b> MATH 4340 <b>OR</b> MATH 4373	Partial Differential Equations <b>OR</b> Numerical Methods <b>OR</b> Regression Analysis	3	MATH 2471 and 3331 MATH 1497, 3320, & CSCI 1470 or equivalent MATH 4372	

**AND UCA STEM TEACH MINOR**

EDUC 1100	Inquiry Approaches to Teaching	1		Fall/Spring
EDUC 1101	Inquiry Based Lesson Design	1	EDUC 1100	Fall/Spring
EDUC 1301	Knowing and Learning	3	EDUC 1100	Fall/Spring
EDUC 2301	Classroom Interactions	3	EDUC 1301 OR or consent of instructor	Fall/Spring
EDUC 3300	Project-Based Instruction	3	Consent of instructor and admission to teacher ed program	Fall/Spring
STEM 3305	Perspectives on Mathematics & Science	3	EDUC 1301 or consent of instructor	Fall/Spring
STEM 3310	Research Methods in Mathematics & Science	3	EDUC 1301 or consent of instructor	Fall/Spring
STEM 4305	Apprentice Teaching Seminar	3	Completion of all other courses Co-requisite: 4600 Apprentice Teaching	Fall/Spring
<sup>4</sup> STEM 4600	Apprentice Teaching	6	Completion of all other courses Co-requisite: 4305 Apprentice Teaching Seminar	Fall/Spring

**ANCILLARY REQUIREMENTS**

**OTHER REQUIREMENTS**

PHYS 1441 and 1442 **OR**  
 PHYS 1410 AND 1420 **OR**  
 CHEM 1450 and 1451 **OR**  
 ECON 2320 AND ECON 2321

- Must complete 120 semester hours including 38 hours of General Education.
- GPA of 2.5 or better in each of the major and minor fields.
- Must have 40 hours of upper level (3000 or 4000) courses.
- Praxis II content exams must be passed before enrolling in STEM 4600
- At least 15 hours of the major must be earned in residence.