Academic Map: Mathematics, STEMteach Applied Mathematics

Department: Mathematics **Degree:** BS
Program/Major: Mathematics
Track/Emphasis: STEMteach Applied Mathematics
Does this program require a minor? (Yes/No) Yes

Important program information in the online *Undergraduate Bulletin*:

UCA Core Requirements:	http://uca.edu/ubulletin2015/general-policies-information/uca-core/
LD Core Check Sheet:	http://uca.edu/ubulletin/ldcore/
Degree Requirements:	http://uca.edu/ubulletin2015/general-policies-information/degree-requirements/
Program Description:	http://uca.edu/ubulletin2015/colleges-departments-programs/college-of-natural-sciences-and-mathematics/department-of-mathematics/
Course Descriptions:	http://uca.edu/ubulletin2015/courses/

This degree program requires a total of 120 semester credit hours, including at least 40 upper-division credit hours.

Comparable courses in the Arkansas Course Transfer System (ACTS) are cross-referenced in the ACTS column of each semester block below; a core link (http://uca.edu/ubulletin/ldcore/) takes the user to the *Undergraduate Bulletin*'s UCA Lower-Division Core check sheet, where LD UCA Core options and ACTS course numbers are listed in full; an acts link takes the user to the *Undergraduate Bulletin*'s ACTS page (http://uca.edu/ubulletin/arkansas-course-transfer-system/) for additional information and a UCA-ACTS crosswalk.

Year 1

Fall – Semester 1 (credit hours: 14)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	1496	Calculus I	4	MATH2405
WRTG	1310	Introduction to College Writing or Approved alternative (LD UCA Core: Writing Foundation)[1]	3	ENGL1013 core link
		LD UCA Core[1]	3	core link
		LD UCA Core[1]	3	core link
EDUC	1100	Inquiry Approaches to Teaching (UCA STEMteach)[2]	1	

Spring – Semester 2 (credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	1497	Calculus II	4	MATH2505
WRTG ENGL	1320 1320	Academic Writing and Research or Interdisciplinary Writing and Research or Other approved alternative (LD UCA Core: Research/Writing)[1]	3	ENGL1023 ENGL1023 core link
		LD UCA Core[1]	3	core link
		LD UCA Core (Natural Sciences)[1, 3]	4	core link
EDUC	1101	Inquiry Based Lesson Design (UCA STEMteach)[2]	1	

Year 2

Fall – Semester 3 (credit hours: 17)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	2335	Transition to Advanced Mathematics	3	
MATH	2471	Calculus III	4	MATH2603
EDUC	1301	Knowing and Learning (UCA STEMteach)[2]	3	
		LD UCA Core (Natural Sciences)[1, 3]	4	core link
		General Elective[3]	3	

Spring – Semester 4 (credit hours: 16/17)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	2441	Mathematical Computation	4	
MATH	3320	Linear Algebra (UD UCA Core: I)	3	
		LD UCA Core[1]	3	core link
		Program Requirement[4]	3 or 4	
EDUC	2301	Classrooms Interactions (UCA STEMteach)[2]	3	

Year 3

Fall – Semester 5 (credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4371	Introduction to Probability (UD UCA Core: R)	3	
MATH	3331	Differential Equations (UD UCA Core: C)	3	
		LD UCA Core[1]	3	core link
		LD UCA Core[1]	3	core link
EDUC	3300	Project-Based Instruction (UCA STEMteach)[2]	3	

Spring – Semester 6 (credit hours: 15/16)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4372	Introduction to Statistical Inference	3	
MATH	4345	College Geometry	3	
		LD UCA Core[1]	3	core link
		Program Requirement[4]	3 or 4	
MATH	4306	Modeling and Simulation (UD UCA Core: Z)	3	

Year 4

Fall – Semester 7 (Credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4315 4340 4373	Introduction to Partial Differential Equations or Numerical Methods or Regression Analysis	3	
MATH	4305 4340 4373	Ordinary Differential Equations II Numerical Methods or Regression Analysis	3	
		General Elective[3]	3	

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4313	Function and Modeling	3	
STEM	3310	Research Method in Mathematics and Science (UCA STEMteach)[2]	3	

Spring – Semester 12 (Credit hours: 12)

SUBJ	NUM	TITLE	SCH	ACTS
STEM	3305	Perspectives on Mathematics and Science (UCA STEMteach)[3]	3	
		General Electives[3]	3	
STEM	4305	Apprentice Teaching Seminar (UCA STEMteach)[2]	3	
STEM	4600	Apprentice Teaching (UCA STEMteach)[2]	6	

SIGNED – DEPARTMENT CHAIR _____ DATE _____

SIGNED – COLLEGE DEAN _____ DATE _____

To be completed by the advisor when an Eight-Semester plan is accepted by the student:

If applicable, has student selected a minor? Type "x" as appropriate. _____ No X Yes

If "yes," specify: UCA STEMteach

Notes

[1] See appropriate choices, alternatives, or substitutions under "UCA Lower Division Core" in the *Undergraduate Bulletin*. Prior to completion of 30 semester hours, a student must complete a UCA Lower Division Core course designated as a First-Year Seminar (FYS) in Critical Inquiry, Diversity, or Responsible Living. The student will also need to complete major, minor, or general elective courses designated as fulfilling the upper-division and capstone requirements of the UCA Core. See annotations in this Academic Map for courses within the major that fulfill these requirements; for others, consult the *Undergraduate Bulletin* and your academic advisor.

[2] This Academic Map includes the 26 credit hours of the UCA STEMteach minor.

[3] Students will need to adjust the number of general elective credit hours depending on the sequence chosen to meet the program requirements.

[4] Program Requirement: PHYS 1441 and PHYS 1442 **OR** PHYS 1410 and PHYS 1420 **OR** CHEM 1450 and PHYS 1451 **OR** ECON 2320 and ECON 2321. Students who use the first course of the sequence for a UCA Lower Division Core Critical Inquiry requirement (Physical Science or Social Science) will take an additional general elective instead of the program requirement in their fifth semester.