Academic Map: Mathematics, Applied Mathematics

Department: Mathematics **Degree:** BS
Program/Major: Mathematics
Track/Emphasis: 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/ubulletin/general-policies-information/uca-core/
LD UCA Core Check Sheet:	http://uca.edu/academicbulletins/ld-uca-core/
UD UCA Core Course List:	http://uca.edu/academicbulletins/ud-uca-core/
Degree Requirements:	http://uca.edu/ubulletin/general-policies-information/degree-requirements/
Program Description:	http://uca.edu/ubulletin/colleges-departments-programs/college-of-natural-sciences-and-mathematics/department-of-mathematics/
Course Descriptions:	http://uca.edu/ubulletin/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/academicbulletins/ld-uca-core/) 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/academicbulletins/acts/) for additional information and a UCA-ACTS crosswalk.

Year 1

Fall – Semester 1 (credit hours: 16)

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
		LD UCA Core[1]	3	core link

Spring – Semester 2 (credit hours: 14)

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, 2]	4	core link

Year 2

Fall – Semester 3 (credit hours: 14)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	2335	Transition to Advanced Mathematics	3	
MATH	2441	Mathematical Computation	4	
		LD UCA Core[1]	3	core link
		LD UCA Core (Natural Sciences)[1, 2]	4	core link

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

SUBJ	NUM	TITLE	SCH	ACTS
MATH	2471	Calculus III	4	MATH2603
MATH	3320	Linear Algebra (UD UCA Core: I)	3	
MATH	3331	Differential Equations (UD UCA Core: C)	3	
		Program Requirement[2]	3 or 4	
		Minor Field[3, 4]	3	

Year 3

Fall – Semester 5 (credit hours: 15/16)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4371	Introduction to Probability (UD UCA Core: R)	3	
MATH	4315 4340 4373	Partial Differential Equations or Numerical Methods or Regression Analysis	3	
		LD UCA Core[1]	3	core link
		Program Requirement (if needed) or General Elective[2]	3 or 4	
		Minor Field[3, 4]	3	

Spring – Semester 6 (credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	3311	Statistical Methods	3	
		MATH Major Elective	3	
		LD UCA Core[1]	3	core link
		Minor Field[3, 4]	3	
		Minor Field[3, 4]	3	

Year 4

Fall – Semester 7 (Credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
		MATH Major Elective	3	
		General Elective[4]	4	
		General Elective[4]	3	
		Minor Field[3, 4]	3	
		Minor Field[3, 4]	3	

Spring – Semester 8 (Credit hours: 13/15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4306	Modeling and Simulation (UD UCA Core: Z)	3	
		General Electives[4]	3	
		General Electives[4, 5]	1 or 3	
		Minor Field[3, 4]	3	
		Minor Field[3, 4]	3	

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 _____ Yes
If "yes," specify: _____

Notes

[1] See appropriate choices, alternatives, or substitutions designated in the UCA Core Requirements and the lower-division (LD) UCA Core Check Sheet in the *Undergraduate Bulletin*. Prior to completion of 30 semester hours, a student must complete an LD UCA 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 in the major that will fulfill UD UCA Core requirements; for others, consult the *Undergraduate Bulletin* and your academic advisor.

[2] Program Requirements: 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 LD UCA Core Critical Inquiry requirement (Physical Science or Social Science) will take an additional general elective instead of the program requirement in their fifth semester.

[3] This Academic Plan includes 24 credit hours in the Minor field of study. Minor requirements range from 15–27 credit hours, so the student will need to adapt the number of general elective and minor elective credit hours in this plan as needed, depending upon the chosen minor field. Depending on a student's choice of minor and special degree requirements, the total number of credit-hours taken may exceed the total number of credit hours required to complete the program.

[4] The applied mathematics major requires 24 hours of upper-division courses. The additional 16 upper-division credit hours needed to complete the degree may be met by courses in the minor field and by additional math or general electives.

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