

Academic Map: Mathematics, Data Science

Department: Mathematics **Degree:** BS
Program/Major: Mathematics
Track/Emphasis: Data Science
Does this program require a minor? (Yes/No) Yes¹

Important program information in the online *Undergraduate Bulletin*:

UCA Core Requirements: <https://uca.edu/ubulletin/general-policies-information/uca-core/>
LD UCA Core Check Sheet: <https://uca.edu/academicbulletins/ld-uca-core/>
UD UCA Core Course List: <https://uca.edu/academicbulletins/ud-uca-core/>
Degree Requirements: <https://uca.edu/ubulletin/general-policies-information/degree-requirements/>
Program Description: <https://uca.edu/ubulletin/colleges-departments/cn/mathematics/>
Course Descriptions: <https://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](https://uca.edu/academicbulletins/ld-uca-core/) (<https://uca.edu/academicbulletins/ld-uca-core/>) takes the user to the *Undergraduate Bulletin's* Lower-Division (LD) UCA Core check sheet, where UCA Core options and ACTS course numbers are listed in full; an [acts link](https://uca.edu/academicbulletins/acts/) (<https://uca.edu/academicbulletins/acts/>) takes the user to the *Undergraduate Bulletin's* ACTS page (<https://uca.edu/academicbulletins/acts/>) for additional information and a UCA-ACTS crosswalk.

Scholarship recipients: Please be aware of eligibility criteria for your scholarship(s). In particular, pay attention to (1) the enrollment requirements each semester for disbursement of your scholarship(s) and (2) the number of hours and GPA required each semester and/or year for renewal of your scholarship(s). Some Academic Maps may suggest enrollment in fewer hours than required for disbursement of your scholarship(s). In such cases, work with your academic advisor to adjust your schedule to meet requirements most efficiently. Contact the Office of Student Financial Aid at (501) 450-3140 with any questions regarding enrollment/renewal requirements of your scholarship(s). For online information resources, see endnote 2.

Year 1

Fall – Semester 1 (Credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	1496	Calculus I ³ (<i>LD Critical Inquiry</i>). (<i>Math Core</i>)	4	MATH2405
WRTG	1310	Introduction to College Writing or Other approved alternative (LD UCA Core: Writing Foundation) ⁴	3	ENGL1013 core link
		LD UCA Core: Life Science	4	core link
		LD UCA Core: Physical Science	4	core link

Spring – Semester 2 (Credit hours: 16)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	1497	Calculus II (<i>Math Core</i>)	4	MATH2505
WRTG ENGL	1320 1320	Academic Writing & Research or Interdisciplinary Writing & Research or Other approved alternative (LD UCA Core: Research/Writing)	3	ENGL1023 ENGL1023 core link
		LD UCA Core	3	core link
		LD UCA Core	3	core link
		LD UCA Core	3	core link

Year 2**Fall – Semester 3 (Credit hours: 16)**

SUBJ	NUM	TITLE	SCH	ACTS
MATH	2471	Calculus III (<i>Math Core</i>)	4	MATH2603
MATH	2341	Introduction to Mathematical Computation (<i>Math Core</i>)	3	
		Minor field (Computer Science minor recommended)	3	
		LD UCA Core	3	core link
		LD UCA Core	3	core link

Spring – Semester 4 (Credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	3320	Linear Algebra (UD UCA Core: I) (<i>Math Core</i>)	3	
MATH	3311	Statistical Methods (<i>Math Core</i>)	3	
		Minor field (Computer Science minor recommended)	3	
		LD UCA Core	3	core link
		LD UCA Core	3	core link

Year 3**Fall – Semester 5 (Credit hours: 15/16)**

SUBJ	NUM	TITLE	SCH	ACTS
MATH	3392	Multivariate Analysis (Fall Only) (<i>Data Science Requirement</i>)	3	
MATH	4371	Introduction to Probability (UD UCA Core: R) (Fall Only) (<i>Math Core</i>)	3	
MATH		Math: Data Science Restricted Elective	3	
		Related Requirement ⁵ (if required) or General Elective	3 / 4	
		Minor field (Computer Science minor recommended):	3	

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

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4373	Regression Analysis (<i>Data Science Requirement</i>)	3	
MATH		Math: Data Science Restricted Elective	3	
		UD UCA Core (Communications) (<i>MATH 3331, Spring Only, or CSCI 3360 suggested</i>)	3	
		Related Requirement (If needed) or General Elective	3 / 4	
		Minor field (Computer Science minor recommended)	3	

Year 4**Fall – Semester 7 (Credit hours: 15)**

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4391	Machine Learning (<i>Data Science Requirement</i>)	3	
MATH		Math Elective (if needed) or General Elective	3	
		UD UCA Core (Diversity) (<i>Math 4350, Fall Only, or CSCI 4321 suggested</i>)	3	
		Minor field (Computer Science minor recommended)	3	
		Minor field (Computer Science minor recommended)	3	

Spring – Semester 8 (Credit hours: 11-13)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4395	Practicum in Data Science (UD UCA Core: Z)	3	
		General elective	3	
		General elective	3	
		General elective (Upper Division if needed)	2-4	

 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 The Computer Science minor is strongly encouraged. In this Academic Map, 20 credit hours are set aside for the minor. The Computer Science minor requires a minimum of 18 credit hours. Depending on the minor and courses selected, the number of general electives may need to be adjusted to bring the total credit hours in the program to 120.

² See online information resources for UCA scholarships at <https://uca.edu/scholarships/> and for state scholarships at <https://scholarships.adhe.edu/scholarships-and-programs/a-z/>.

³ For the BS in Mathematics, this course fulfills the LD UCA Core Critical Inquiry – Quantitative requirement.

⁴ 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 within the major that fulfill the UD UCA Core requirements. Consult the *Undergraduate Bulletin* and your academic advisor for other available UD UCA Core courses.

⁵ Related Requirements: CSCI 1470 and CSCI 1480 OR ECON 2320 and ECON 3302 OR ECON 2321 and ECON 3301 OR BIOL 1440 and BIOL 1441 OR INSU 3324 and ECON 2320 (or ECON 2321). Depending on the sequence chosen, the number of general elective credits may need to be adjusted in Semester 8.