

Academic Map: Data Science, Computer Science

Department: _____ Computer Science and Engineering _____ **Degree:** _____ BS _____
Program/Major: _____ Data Science _____
Track/Emphasis: _____ Statistics _____
Does this program require a minor? (Yes/No) _____ No _____

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/computer-science/>
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/) 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 ¹.

Year 1

Fall – Semester 1 (Credit hours: 14)

SUBJ	NUM	TITLE	SCH	ACTS
CSCI	1470	Computer Science I	4	
MATH	1496	Calculus I	4	MATH2405
WRTG	1310	Introduction to College Writing	3	ENGL1013
		LD UCA Core Elective ²	3	core link

Spring – Semester 2 (Credit hours: 17)

SUBJ	NUM	TITLE	SCH	ACTS
CSCI	1480	Computer Science II	4	
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)	3	ENGL1023 ENGL1023 core link
		LD UCA Core Elective	3	core link
		LD UCA Core Elective	3	core link

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

SUBJ	NUM	TITLE	SCH	ACTS
CSCI	2310	Introduction to Data Science	3	
CSCI	2320	Data Structures	3	
CSCI	2330	Discrete Mathematics for Computing	3	
		LD UCA Core: Life Science Requirement	4	core link
		LD UCA Core Elective	3	core link

Spring – Semester 4 (Credit hours: 16)

SUBJ	NUM	TITLE	SCH	ACTS
CSCI	3330	Algorithms	3	
CSCI	3360	Database Systems [UD UCA Core: C]	3	
MATH	3320	Linear Algebra [UD UCA Core: I]	3	
		LD UCA Core: Physical Science Requirement	4	core link
		LD UCA Core Elective	3	core link

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

SUBJ	NUM	TITLE	SCH	ACTS
CSCI	3385	Artificial Intelligence	3	
CSCI	3381	Object-Oriented Software Development with Java	3	
CSCI	4321	Ethical Implications [UD UCA Core: D, R]	3	
MATH	3311	Statistical Methods	3	
		LD UCA Core Elective	3	core link

Spring – Semester 6 (Credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	3391 4381	Nonparametric Statistics or Special Problems in Mathematics [Concentration Elective]	3	
CSCI	4370	Data Mining	3	
MATH	3381	Data Cleaning and Visualization	3	
MATH	4371	Introduction to Probability [UD UCA Core: R]	3	
		General Elective	3	

Year 4**Fall – Semester 7 (Credit hours: 14)**

SUBJ	NUM	TITLE	SCH	ACTS
MATH	3392	Multivariate Analysis [Concentration Requirement]	3	
CSCI	4315	Information Security [UD UCA Core: R]	3	
MATH	4373	Regression Analysis [Concentration Requirement]	3	
MATH	3391 4381	Nonparametric Statistics or Special Problems in Mathematics [Concentration Elective]	3	
		General Elective	2	

Spring – Semester 8 (Credit hours: 13)

SUBJ	NUM	TITLE	SCH	ACTS
MATH	4391	Machine Learning [Concentration Requirement]	3	
MATH	4392	Time Series and Forecasting [Concentration Requirement]	3	
CSCI	4491	Applied Data Science [UD UCA Core: Z]	4	
		LD UCA Core Elective	3	core link

 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 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/>.

² See appropriate choices, alternatives, or substitutions under “UCA Core” in the *Undergraduate Bulletin*. Prior to completion of 30 semester hours, a student must complete a UCA Core course designated as a First-Year Seminar (FYS) in Critical Inquiry, Diversity, or Responsible Living (one of the LD UCA Core courses in the second semester must be designated FYS).

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 that fulfill these upper-division requirements.