

# Requirements for the B.S. Degree in Data Science

Department of Computer Science and Engineering, University of Central Arkansas 4/7/26 revised

## CS Required Courses (42 hours)

Pref/Num	Title	Prerequisites
CSCI 1470	Comp. Sci. I	MATH 1390
CSCI 1480	Comp. Sci. II	CSCI 1470
CSCI 2310	Intro. Data Sci.	CSCI 1480
CSCI 2320	Data Struct.	CSCI 1480
CSCI 3330	Algorithms	CSCI 2320, MATH 2330
CSCI 3360	DB Syst. [C]	CSCI 2320
CSCI 3381	OO S/W Dev.	CSCI 2320
MATH 3381	Data Clean. & Vis.	MATH 3311
CSCI 3385	Artificial Intel.	CSCI 2320
CSCI 4315	Info. Sec. [R]	Jun/Sen, CSCI 2335
CSCI 4321	Ethics [G, R]	Jun/Sen, CSCI 2320
CSCI 4370	Data Mining	CSCI 3330/3385
CSCI 4491	Appl. Data Sci. [Z]	CSCI 4370

## Math Required Courses (20 hours)

Pref/Num	Title	Prerequisites
MATH 1496	Cal. I	(MATH 1390, 1392)/ MATH 1486
MATH 1497	Cal. II	MATH 1496
MATH 2330	Disc. Struct. I	MATH 1491/1496, CSCI 1470
MATH 3311	Stat. Methods	MATH 1491/1496, CSCI 1470
MATH 3320	Linear Algebra [I]	MATH 1497/2330
MATH 4371	Intro. Prob.	MATH 1497

1 Choose one concentration

2 When the subject is one of the following: Qualitative Data Analysis, Text Mining, or Bayesian Analysis

3 with V = 3 or an upper-division course approved by the CSE chair

4 with V = 3 or an upper-division course approved by the CSE chair (for additional information, visit <https://uca.edu/cse/internships/>)

Notes:

- Prerequisite columns: "A, B" means "A and B"; "A/B" means "A or B"
- UCA Upper-Division Core: Communication [C], Global Learning [G], Critical Inquiry [I], Responsible Living [R], Capstone [Z]

For additional information, consult your academic advisor or visit <https://bit.ly/3uO2UdG>

## Concentration<sup>1</sup> Courses (12 or 18 hours)

Pref/Num	Title	Prerequisites
<b>Statistics (18 hours)</b>		
MATH 3392	Multivar. Anal.	MATH 3311, 3320
MATH 4373	Regr. Anal.	MATH 3311
MATH 4391	Mach. Learning [Z]	MATH 4373
MATH 4392	Time Ser. & Forecast.	MATH 4373

**and** 6 hours chosen from the following

MATH 3391	Nonparam. Stat.	MATH 3311
MATH 4381	Special Prob. Math. <sup>2</sup>	
<b>Business (12 hours)</b>		
CISA 3V82	Internship <sup>3</sup>	Jun/Sen
CISA 4325	Pred. Anal.	MATH 3311
CISA 4330	Prescr. Anal.	MATH 3311
CISA 4380	Bus. Intel. & Data Vis.	MATH 3311
<b>Computer Science (12 hours)</b>		
CSCI 3V75	Internship <sup>4</sup>	Jun/Sen
CSCI 2335 or CSCI 3345 or CSCI 4340	Networking or Human-Comp. Inter. or Intro. Parallel Prog.	CSCI 1480  CSCI 2320  CSCI 3330, 3380
CSCI 4371	Mach. Learning	CSCI 3330/3385
CSCI 4372	Data Clustering	CSCI 3330/3385