

Requirements for the B.S. Degree in Computer Science (Data Science Concentration)

Department of Computer Science, University of Central Arkansas 3/19/21 revised

CS Required Courses (48 hours)

| Number | Title | Prerequisites |
|-----------|-------------------------|---------------------------------|
| CSCI 1470 | Computer Science I | MATH 1390 |
| CSCI 1480 | Computer Science II | CSCI 1470 |
| CSCI 2320 | Data Structures | CSCI 1480 |
| CSCI 2335 | Networking | CSCI 1480 |
| CSCI 3330 | Algorithms | CSCI 2320, 2330 |
| CSCI 3360 | Database Systems [C] | CSCI 2320 |
| CSCI 3370 | Prog. Languages | CSCI 2320 |
| CSCI 3380 | Computer Arch. | CSCI 2320 |
| CSCI 3381 | OO Software Dev. | CSCI 2320 |
| CSCI 3385 | Artificial Intelligence | CSCI 3330 |
| CSCI 4300 | Operating Systems | Junior/senior status, CSCI 3330 |
| CSCI 4315 | Info. Security [R] | CSCI 2320 |
| CSCI 4321 | Ethical Impl. [D, R] | Junior/senior status, CSCI 2320 |
| CSCI 4370 | Data Mining | CSCI 3360 |
| CSCI 4490 | Software Eng. [Z] | CSCI 3381 |

Math Required Courses (16 hours)

| Number | Title | Prerequisites |
|-----------|-----------------------|--------------------------------------|
| MATH 1496 | Calculus I | (MATH 1390, 1392)/MATH 1486 |
| MATH 2311 | Elementary Statistics | MATH 1360/1390 |
| CSCI 2330 | Discrete Math. | CSCI 1480 |
| MATH 3320 | Linear Algebra [I] | MATH 1497/ CSCI 2330 |
| MATH 3311 | Statistical Methods | MATH 2441/ (MATH 1496, CSCI 1470) |

Science Required Courses (8 hours)

| Number | Title | Prerequisites |
|---------------------------------|-------------------------|---------------|
| BIOL 1440 | Principles of Biology I | CHEM 1301 |
| and one of the following | | |
| CHEM 1450 | College Chemistry I | CHEM 1301 |
| PHYS 1410 | College Physics I | MATH 1390 |
| PHYS 1441 | University Physics I | MATH 1496 |

CS Elective Courses (12 hours)

| Number | Title | Prerequisites |
|----------------|---------------------------------|-----------------|
| CSCI 3xxx/4xxx | Any upper-division CSCI course* | |
| ENGR 3xxx/4xxx | Any upper-division ENGR course | |
| CSEC 3xxx/4xxx | Any upper-division CSEC course | |
| MATH 3391 | Nonparametric Stat. | MATH 3311 |
| MATH 3392 | Multivariate Analysis | MATH 3311, 3320 |
| MATH 4371 | Intro. Probability [R] | MATH 1497 |
| MATH 4373 | Regression Analysis | MATH 3311 |
| MIS 4355 | Project Mgmt. | MATH 3311 |
| MIS 4380 | Bus. Intel. & Data Vis. | MATH 3311 |

* Except those that are already required, CSCI 4310, and CSCI 4390

Notes:

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

For additional information, consult your academic advisor or visit <https://bit.ly/2yNcCmp>