

2024 – 2025 College Catalog Computer Science (B.S.)

Student Name: _____ Catalog: **2024-2025**
 Student ID: _____ Concentration: _____
 Advisor Name: _____ Minimum Credits Required: **125 to graduate**

Notes:

Computer Science majors are required to take:

Course Name	Term	Grade	Offered
CS 121 - Computer Science I (4.0)			F, S
CS 122 - Computer Science II (4.0) <i>*Prerequisite(s):</i> CS 121.			F, S
CS 209 – Database Systems (4.0) <i>*Prerequisite(s):</i> CS 121.			F
CS 221 – Data Structures (4.0) <i>*Prerequisite(s):</i> CS 122.			F
CS 222 – Systems Programming (4.0) <i>*Prerequisite(s):</i> CS 122.			S
CS 230 – Computer Architecture (4.0) <i>*Prerequisite(s):</i> CS 121.			S
CS 250 – Foundations of AI & Data Science (4.0) <i>*Prerequisite(s):</i> CS 121 and at least one of MA121, 135, or 251.			F
CS 296 – Professional Development Seminar (1.0) (EGR296)			F, S
CS 322 – Algorithms (4.0) <i>*Prerequisite(s):</i> CS 221.			S
CS 341 – Software Engineering (4.0) <u>SLE #1</u> <i>*Prerequisite(s):</i> CS 122.			F
CS 396 – Industry Speakers and Special Topics Seminar (1.0)			S
CS 401 – Capstone Project in Computing I (2.0) <i>*Prerequisite(s):</i> CS 341 and senior status.			F
CS 402 – Capstone Project in Computing II (2.0) <u>SLE #2</u> <i>*Prerequisite(s):</i> CS 401.			S
CS 421 – Programming Language Design and Implementation (4.0) <i>*Prerequisite(s):</i> CS 221 or CS 222.			F
CS 422 – Operating Systems (4.0) <i>*Prerequisite(s):</i> CS 222.			S
CS 470-474 – Internship in Computer Science (variable credit) <i>*Prerequisite:</i> CS 296.			
MA 121 - Calculus I (4.0) Placement into MA121 required based on ALEKS, AP, or SAT/ACT. <u>Core: MA</u>			F, S
MA 135 – Applied Discrete Mathematics (4.0)			S
MA 251 – Probability & Statistics (4.0) <u>Core: MA</u> or MA 250 Sports Analytics (4.0)			F, S
PH 263 – Societal Impacts of Computing, Artificial Intelligence, and Robotics (4.0) <u>Core: HUM</u>			F

Suggested first year courses:

Fall Semester:

CS 121 – Computer Science I (4.0)
 EN 100 – PLE Writing and Language or EN 150 – PLE Advanced Writing and Language (4.0) Core: PLE
 FYS 100 – First Year Seminar (4.0) Core: FYS
 MA 120 – Foundations for Calculus (4.0)

Spring Semester:

CS 122 – Computer Science II (4.0)
 MA 121 – MA Calculus I (4.0)
 MA 251 – MA Probability & Statistics (4.0) Core: MA
 Core Course (4.0)

Prerequisites must be met in a previous semester and cannot be taken concurrently.

Computer Science with a . . . (1) Select one of the following four concentrations and complete all the courses in it, or (2) Earn the degree without a concentration by completing 12 credits at or above the 200-level of CS, or specified EGR (EGR 330, 430, 434) courses.

AI & Data Science Concentration			
BA 260 – Introduction to Data Visualization (2.0)			S, even
CS 350 – From Data Mining to Deep Learning (4.0) <i>*Prerequisite(s): CS 209 and CS 250.</i>			F, even
CS 354 – Big Data (4.0) <i>*Prerequisite(s): CS 209 and CS 250.</i>			S, odd
CS 358 – Machine Learning (2.0) (DAT 358) <i>*Prerequisite(s): CS121 and MA252.</i>			S, even
MA252 – Statistical Methods in Research (4.0) <i>*Prerequisite(s): MA251.</i>			F, S
Cybersecurity Concentration			
CS 261 – Ethical Hacking (2.0) <i>*Prerequisite(s): CS 121.</i>			S, odd
CS 262 – Digital Forensics (2.0) <i>*Prerequisite(s): CS 121.</i>			S, odd
CS 342 – Computer Networking (4.0) <i>*Prerequisite(s): CS 122.</i>			F, odd
CS 363 – Computer Security (4.0) <i>*Prerequisite(s): CS 122.</i>			F, even
CS 364 – Network Security (4.0) <i>*Prerequisite(s): CS 122.</i>			S, even
Hardware Concentration			
EGR 330 – Digital Design and Embedded Systems (4.0) <i>*Prerequisite(s): CS 121 or permission of the instructor.</i>			F, even
EGR 430 – Parallel Processing (4.0) <i>*Prerequisite(s): EGR 330.</i>			S, odd
EGR 434 – Robotics and Machine Intelligence (4.0) <i>*Prerequisite(s): CS 121 and MA 121.</i>			F, odd
Web & Application Design Concentration			
ART 103 – Graphic Design I (4.0)			F, S
ART 325 – Designing for the Web and Social Media (4.0) <i>*Prerequisite(s): ART 203 or permission of the instructor.</i>			S
CS 310 – Web Development (4.0) <i>*Prerequisite(s): CS 122.</i>			F, even
CS 312 – Application Development (4.0) <i>*Prerequisite(s): CS 122.</i>			F, odd

Common Core Requirements:

First-Year Seminar (FYS 100) – 1 course, 3 credits
Required for first-time

English (EN 100) – 1 course, 3-4 credits

PLO Power of Language: Other (Modern/Ancient Language) – 1 course, 3-4 credits

MA Mathematics – 1 course, 3-4 credits

CE Creative Expression – 1 course, 3-4 credits (or course equivalent)

WCH Western Cultural Heritage – 1 course, 3-4 credits

NCH Non-Western Cultural Heritage – 1 course, 3-4 credits

NPS Natural and Physical Sciences – 2 courses, 3-4 credits each (at least one with lab)
At least one course must have a laboratory component.

SSC Social Sciences – 1 course, 3-4 credits

HUM Humanities – 1 course, 3-4 credits