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

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

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| **Notes:** |

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

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