



**CS Electives (12 credits): At-least one course from Foundations & at-most 6 credits from the Career Readiness.**

**Foundations**

- CAP 4506 – Intro to Game Theory (Prereq: MAC2312)
- COP 4534 – Algorithm Techniques (Prereq: COP3530)
- COT 3510 – Applied Linear Structures (Prereq: see syllabus; Coreq: COT3100 or MAD2104)
- COT 3541 – Logic for CS (Prereq: COP3337 & COT3100)
- COT 4521 – Intro to Computational Geometry (Prereq: COP3530)
- COT 4601 – Fundamentals of Quantum Computing (Prereq: (COP3337 or COP3804) and COT3100)
- MAD 3301 – Graph Theory (Prereq: COP2047 & (COT3100 or MAD2104))
- MAD 3401 – Numerical Analysis (Prereq: COP2047, MAC2312)
- MAD 3512 – Theory of Algorithms (Prereq: COP3530)
- MAD 4203 – Combinatorics (Prereq: MAD2104, MAC2312)
- MHF 4302 – Math Logic (Prereq: MAD3512)

**Systems**

- CAP 4453 – Robot Vision (Prereq: COP3530, MAC2312)
- CDA 4625 – Intro to Mobile Robotics (Prereq: COP3530, STA3033)
- CNT 4713 – Net-Cent. Computing (Prereq: COP4338)
- CIS 4203 – Digital Forensics (Prereq: COP2047/EEL2880)
- CIS 4731 – Fund Blockchain Tech. (Prereq: COP2047 AND COT3100)
- COP 4520 – Intro to Parallel Computing (Prereq: COP3530 and (CDA3102 or CDA4101 or EEL4709))
- COP 4604 – Advanced UNIX Programming (Prereq: COP4610)
- COP 4751 – Advanced Database Management (Prereq: COP4710)
- CTS 4408 – Database Administration (Prereq: COP4710 or COP4703)
- COT 4431 – Applied Parallel Computing (Prereq: COP3530 and (CDA3102 or EEL4709))

**Applications**

- CAI 4002 – Artificial Intelligence (Prereq: COP3530)
- CAI 4105 – Introduction to Machine Learning (Prereq: COP3530, STA3033)
- CAI 4304 – Nat Lang Processing (Prereq: COP3530)
- CAP 4052 – Game Design & Dev (Prereq: (STA2023 or STA3033) and COP3530 and CAP4104)
- CAP 4104 – Human Cmptr Interaction (Prereq: COP3337)
- CAP 4710 – Computer Graphics (Prereq: COP3337, MAC2312)
- CAP 4770 – Intro to Data Mining (Prereq: STA-2023/2122/3033/4322 and COP-3530/3465)
- CAP 4830 – Modeling & Simulations (Prereq: (STA2023 or STA3033) and COP3530)
- CEN 4021 – Software Engg. II (Prereq: CEN4010)
- CEN 4072 – Software Testing (Prereq: COP3530)
- COP 4226 – Adv Windows Prog. (Prereq: COP3530)
- COP 4655 – Mobile App Dev (Prereq: CAP4104 & CEN4010)

**Career Readiness**

- CIS 4947: Career Readiness (Prereq: Instructor permission)
- CIS 4912: Research Experience for Undergraduates – REU (Prereq: Instructor permission)
- CIS 4257: Empowering Emerging Tech Talent (Prereq: Senior standing)
- CIS 3590: Internship Ready Software Development (Prereq: COP2047, Coreq: COP3337)

**\* Pre-requisites:**

- COP2047: MAC1140 or higher level math course
- COT3100: Prereq: any MAC course and any COP course, Coreq:(COP2047 or EEL2280)
- ENC3249/ENC3213: UCC English requirements
- MAC2311: MAC1147
- MAD2104: MAC1105 or MGF1106

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A direction line indicates a prerequisite. The course above must be completed before the course below can be taken.

◇  
A diamond indicates a co-requisite. The course closer to the diamond may be taken at the same time as the co-requisite. The co-requisite is a prerequisite for any course that requires the course closer to the diamond.