Bachelor of Science in Computer Science
Software Design & Development Track (effective 08/01/2020)

**Foundations**
- CAP 4506 - Intro to Game Theory (Prereq: MAC2312)
- COP 4534 - Algorithm Techniques (Prereq: COP3530)
- COP 4555 - Programming Languages (Prereq: COP3530)
- COT 3541 - Logic for CS (Prereq: COP3337 & COT3100)
- COP 4521 - Intro to Computational Geometry (Prereq: COP3530)
- MAD 3305 - Graph Theory (Prereq: COP2210, MAD2104)
- MAD 3401 - Numerical Analysis (Prereq: COP2210, MAC2112)
- 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)
- CEN 4072 - Software Testing (Prereq: STA3033)
- CIS 4951 - Capstone II (2 credits) [Senior standing]
- CEN 4024 - Software Engineering II
- CAP 4770 - Intro to Data Mining (Prereq: COP3530, Co-req: COP4710)
- COP 4655 - Mobile App Dev (Prereq: CAP4104 and CEN4010 or (CEN3721 and COP4814))

**Applications**
- CAP 4104 - Human Cmptr Interaction (Prereq: COP3337)
- CAP 4612 - Introduction to Machine Learning (Prereq: COP3530, STA3033)
- CAP 4630 - Artificial Intelligence (Prereq: COP3530)
- CAP 4641 - Nat Lang Processing (Prereq: COP3530)
- CAP 4710 - Computer Graphics (Prereq: COP3337, MAC2312)
- CAP 4770 - Intro to Data Mining (Prereq: COP3530, Co-req: COP4710)
- COP 4226 - Adv Windows Program (Prereq: COP3530)

**CS Electives (7 courses):** Must take at least one course from Foundations group and one from Systems group. Remaining five elective courses must be taken from these elective groups (most electives are 3 credits).

- **MAC 2311** - Calculus I (4 credits)
- **PHY 2048/2048L** - Physics w/Calculus I (5 credits)
- **MAD 2104** - Discrete Math (5 credits)
- **COT 3100** - Discrete Structures
- **CP 4610** - Operating Systems (3 credits)
- **COP 4338** - Systems Programming
- **COP 3530** - Data Structures
- **STA 3033** - Probability & Statistics
- **CGS 1920** - Introduction to Computing (1 credit)
- **ENC 3249* or ENC 3213*** - Professional I Technical Writing (GRW)
- **CGS 3095** - Technology in the Global Arena (GL)
- **CAP 4453** - Fund Blockchain Technologies (Prereq: COP3530, MAC2312)
- **CDA 4625** - Intro to Mobile Robotics (Prereq: COP3530, STA3033)
- **CEN 4072** - Software Testing (Prereq: STA3033)
- **CIS 3950** - Capstone I (1 credit) [Junior standing]
- **CIS 4951** - Capstone II (2 credits) [Senior standing]
- **CEN 4021** - Software Engineering II

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*Prerequisites:
- ENC3249/ENC3213: UCC English requirements
- MAC2311: MAC1147
- COT3100 & MAD2104: MAC1105
- COP2210: MAC1140 or higher level math course

Natural Science electives: lab not needed unless required by offering dept.

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.