BS in CIS – Data Science

- All courses are 3 credit hours unless otherwise indicated
- 60 upper level hours and 120 total hours are required for graduation
- Exit Requirement: Must give two spoken presentations in 3XXX or 4XXX Computing courses.

- **Requisites & Prerequisites – (7) (25 credit hours)**
  - Speech or Public Speaking (SPC prefix); taught by another department
  - ENC2210 Technical Writing; taught by a different department
  - MAC2311 Calculus I; 4 credits; taught by another department; Prerequisites: MAC1147
  - MAC2312 Calculus II; 4 credits; taught by another department; Prerequisites: MAC2311 Calculus I
  - COP2220 Programming I; fall, spring and summer
  - Select one of the following three sequences:
    - PHY2048C Calc-based Physics I; 4 credits; taught by another department; Prerequisites: MAC2311 and PHY1028; Corequisite: MAC2312
    - PHY2049/L Calc Physics II with Lab; 4 credits; taught by another department; Prerequisites: PHY2048C and MAC2312
  - OR
  - CHM2045/L Gen Chem I with Lab; 4 credits; taught by another department; Prerequisites: HS Chem with grade B or CHM1025L and MAC1105
  - CHM2046/L Gen Chem I with Lab; 4 credits; taught by another department; Prerequisites: CHM2045/L
  - OR
  - BSC1010 General Biology I; 4 credits; taught by another department
  - BSC1011 General Biology II; 4 credits; taught by another department; Prerequisites: BSC1010

- **Common Core & Major Requirements – (16) (51 credit hours)**
  - COT3100 Computational Structures; fall, spring and summer; Computing Common Core; Prerequisites: MAC1101 or MAC1105 or MAC1147
  - CIS3253 Legal & Ethical Issues in Computing; fall, spring and summer; Computing Common Core; Prerequisites: COP2220 Programming I
  - COP3503 Programming II; fall, spring and summer; Computing Common Core; Prerequisites: COP2220 Programming I
  - COP3530 Data Structures; fall, spring and summer; Prerequisites: COT3100 Computational Structures and COP3503 Programming II
  - CNT4504 Computer Networks; fall, spring and summer; Computing Common Core; Prerequisites: COP3503 Programming II
  - COP3703 Intro to Databases; fall, spring and summer; Computing Common Core; Prerequisites: COP3503 Programming II
  - CAP4770 Data Mining; 3 credits; fall; Prerequisites: COP3703 Intro to Databases
  - CAP4784 Data Analytics; 3 credits; spring; Prerequisites: COP3703 Intro to Databases
  - COT4400 Design & Analysis of Algorithms; fall; Prerequisites: COP3530 Data Structures
  - MAS3105 Linear Algebra; 4 credits; taught by another department; Prerequisites: MAC2312
  - STA3163 Statistical Methods I; 4 credits; taught by another department; Prerequisites: MAC1105 or MAC1147
  - STA3164 Statistical Methods II; 3 credits; taught by another department; Prerequisites: STA3163
  - STA4321 Probability and Stats; 4 credits; taught by another department; Prerequisites: MAC2312
  - Select one of the following two courses
- Select one of the following six courses
  - COT4560 Applied Graph Theory; 3 credits
  - COT4111 Computational Structures II; 3 credits
  - COT4461 Computational Biology; 3 credits
  - MAD4301 Graph Theory; 3 credits; taught by another department
  - MAD4203 Combinatorics; 3 credits; taught by another department
  - MAD4505 Discrete Biomath; 3 credits; taught by another department
- Select one of the following four courses
  - CIS4900 Directed Independent; 3 credits
  - MAT4906 Directed Independent; 3 credits; taught by another department
  - MAS4932 Capstone Experience in Math; 3 credits; taught by another department
  - STA4945 Capstone Experience in Stats; 3 credits; taught by another department

- Major Electives—(3) (9 credit hours)
  - Any upper-level Computing course not used to fulfill other requirements (prefix CAP, CDA, CEN, CIS, CNT, COP or COT)
  - Any 4000-level Statistics course not used to fulfill other major requirements (prefix STA)
  - MAP4231 Operations Research (3 credits), MAT4931 Special Topics in Mathematical Science (3 credits)
  - A maximum of 6 credits of any of CIS4900, MAT4906, or STA4906