COMPUTATIONAL SCIENCE MAJOR, B.A.
Science & Health Department; School of Science, Health & Mathematics

Computational science is a multi-disciplinary field that includes elements of computer science, applied mathematics, and the traditional scientific disciplines of biology, chemistry and/or physics. CSE focuses on the integration of information and methods from each of these disciplines.

To graduate must complete all major requirements, foundational requirements, and additional electives needed for 124 hour minimum degree requirement.

MAJOR REQUIREMENTS (64-75)
(51 Core + 13-24 Concentration)

__ 4 CSC 121 Data Science I ___ Lab
__ 4 CSC 122 Data Science II ___ Lab
__ 4 MAT 181 Calculus I ___ Lab
__ 4 MAT 182 Calculus II ___ Lab
__ 4 MAT 183 Calculus III ___ Lab
__ 3 MAT 252 Diff Equations/Modeling
__ 3 MAT 271 Linear Algebra
__ 3 MAT 351 Applied Mathematics I
__ 3 MAT 352 Applied Mathematics II
__ 3 MAT 442 Numerical Analysis
__ 5 PHY 211 Gen Physics I ___ Lab ___ Recitation
__ 5 PHY 212 Gen Physics II ___ Lab ___ Recitation
__ 3 PHY 361 Computational Science
__ 3 PHY 461 Computational Neuroscience

REQUIRED CONCENTRATION (choose one):

CPSB – BIOLOGY (24)
__ 3 BIO 201 General Biology I
__ 3 BIO 202 General Biology II
__ 1 BIO 203 General Biology Lab I
__ 1 BIO 204 General Biology Lab II
__ 4 CHE 421 Physical Chemistry I ___ Lab

Choose two Biology courses w/labs 200 or higher:
__ 4 BIO ___ __________
__ 4 BIO ___ __________

Choose one Biology course w/lab 300 or higher:
__ 4 BIO ___ __________

CPSC – CHEMISTRY & PHYSICS (21-23)

__ 3 CHE 121 Gen College Chemistry I
__ 3 CHE 122 Gen College Chemistry II
__ 1 CHE 123 Gen College Chemistry Lab I
__ 1 CHE 124 Gen College Chemistry Lab II
__ 4 CHE 421 Physical Chemistry I ___ Lab
__ 3 CHE 422 Physical Chemistry II ___ Lab

Choose one Chemistry course* 200 or higher:
__ 3-4* CHE ___ __________
*may be 4 credits if chosen course has a lab

Choose one Chemistry course* 300 or higher:
__ 3-4* CHE ___ __________
*may be 4 credits if chosen course has a lab

CPSM – MATHEMATICS (13)
__ 3 MAT 241 Logic & Sets
__ 3 MAT 281 Probability
__ 1 MAT 475 Senior Seminar
__ 3 MAT 482 Complex Analysis

Choose one additional Math course:
__ 3 MAT 471 Abstract Algebra
__ MAT 481 Real Analysis

PLUS FOUNDATIONAL COURSE REQUIREMENTS (43)
(3 hours Math and 4 hours Science satisfied by required major courses.)

Plus electives needed for the 124 hour degree requirement (6-17, depending on Concentration)