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 (22-24)

__ 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
__ 4	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 (39)
(3 hours Math and 4 hours Science satisfied by required major courses.)

Plus electives needed for the 124 hour degree requirement (10-21, depending on Concentration)