ASBURY UNIVERSITY
OFFICE OF THE REGISTRAR

2024-2025

COMPUTATIONAL SCIENCE MAJOR, B.A.

Science & Health Department; Shaw School of Sciences

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 (61-72)
(48 Core + 13-24 Concentration)

__ 4	CSC	121	Computer Programming I	___ Lab
__ 4	CSC	122	Computer Programming II	___ Lab
__ 4	MAT	181	Calculus I	___ Lab
__ 4	MAT	182	Calculus II	___ Lab
__ 4	MAT	183	Calculus III	___ Lab
__ 3	MAT	252	Differential Equations	
__ 3	MAT	271	Linear Algebra	
__ 3	MAT	350	Mathematical Modeling	
__ 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
__ 3	MAT	471	Abstract Algebra
__ 1	MAT	475	Senior Seminar
__ 3	MAT	482	Complex Analysis

PLUS FOUNDATIONS REQUIREMENTS (49)
(3 hours Math and 4 hours Science satisfied by required major courses.)

Plus electives needed for the 124 hour degree requirement (3-14)