

Computer Science Bachelor of Science Program
Catalog year 2021-2022

FRESHMAN YEAR

First Semester	Credits	Second Semester	Credits
Lab Science ¹	4	Lab Science ¹	4
MATH 1131Q – Calculus I	4	Math 1132Q – Calculus II	4
CSE 1010 – Intro Computing for Engineers	3	CSE 1729 – Intro to Principles of Programming	3
ENGR 1000 – Orientation to Engineering	1	ENGL 1010 or 1011 – Seminar in Writing	<u>4</u>
Area 2 (Social Sciences)	<u>3</u>		15
	15		

SOPHOMORE YEAR

First Semester	Credits	Second Semester	Credits
Lab Science ¹	4	CSE 2304 or 3666 – Computer Architecture	3
CSE 2500 – Intro to Discrete Systems	3	CSE 3500 – Algorithms and Complexity	3
CSE 2050 – Data Structures & Object-Oriented Design	3	CSE 3100 – Systems Programming	3
MATH 2110Q – Multivariable Calculus or	4 or 3	Area 2 (Social Science)	3
MATH 2410Q – Elem. Differential Equations		PHIL 1104 (Area 1) – Phil. and Soc Ethics	<u>3</u>
Area 1 (Arts and Humanities)	<u>3</u>		15
	17 or 16		

JUNIOR YEAR

First Semester	Credits	Second Semester	Credits
CSE xxxx - Concentration course 1	3	CSE xxxx - Concentration course 2	3
CSE 3140 – Cybersecurity Lab	2	Area 4 Course (Diversity and Multiculturalism)	3
STAT 3025Q-Stat. Methods	3	CSE 3000 -Contemporary Issues in CSE	1
MATH 2210Q-Linear Algebra	3	CSE Elective ²	3
Elective	<u>3</u>	Elective	3
	14	Elective	<u>3</u>
			16

SENIOR YEAR

First Semester	Credits	Second Semester	Credits
CSE 4939W – CSE Design Project I	3	CSE 4940 – CSE Design Project II	3
CSE xxxx - Concentration course 3	3	CSE xxxx - Concentration course 4	3
Area 4 (Diversity and Multiculturalism)	3	CSE Elective	1+
Elective	3	Elective	3
Elective	<u>3</u>	Elective ³	<u>4 to 5</u>
	15		13 to 16

Additionally the program must include one W course other than CSE 4939W, which may be used to satisfy other requirements or Free Electives.

¹ A two-course sequence must be selected from one of the following sequences. CHEM 1127Q, 1128Q; CHEM 1147Q, 1148Q; CHEM 1137Q, 1138Q; PHYS 1401Q, 1402Q; PHYS 1601Q, 1602Q; PHYS 1501Q, 1502Q. An additional course must be selected from the department not selected for the sequence or from BIOL 1107, BIOL 1108, BIOL 1110, or GEOL 1050.

² If needed to get at least 43 credits in CSE courses.

³ Sufficient to make 120 credits.

Computer Science Concentration Requirements

Every Computer Science major must satisfy the requirements for a concentration. A concentration consists of four courses within a defined set of alternatives (one or more of the courses may be required for the concentration). A student must declare a single concentration to count toward graduation; that is the one that will be listed on his or her transcript. There are currently 9 concentrations available, these are listed below. For information about the concentration requirements, see the *Guide to Course Selection*, linked from the CSE department web page under Undergraduate Studies.

Concentration 1: Theory and Algorithms

Concentration 2: Systems and Networks

Concentration 3: Cybersecurity

Concentration 4: Bioinformatics

Concentration 5: Software Design and Development

Concentration 6: Computational Data Analytics

Concentration 7: Naval Science and Technology

The concentration in Naval Science and Technology is designed to expose students to engineering concepts and topics of importance to the Navy and industries that support naval science and technology. It is focused on facilitating interactions between students and naval professionals as well as hands-on and experiential activities related to senior design projects or independent study projects that have naval science and technology connections.

Concentration 8: Unspecialized

For the Unspecialized concentration, students must take required courses from 3 different concentrations, plus any other 2000+ level CSE course not used to fulfill another requirement.

Concentration 9: Individually Designed

Students may propose an individually-designed concentration to fit their academic or career interests. This will be a minimum of 12 credits at the 2000+ level, proposed by the student and approved by the student's advisor and the CSE Department Undergraduate Committee. The expectation is that such a concentration will have a strong unifying theme. This may include non-CSE courses, but the student will still be subject to the overall requirement of 50 CSE credits.