Computer Science Bachelor of Science Program
Catalog year 2022-2023

FRESHMAN YEAR			
First Semester	**Credit**	**Second Semester**	**Credit**
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 2050 – Data Structures & Object-Oriented	3
ENGR 1000 – Orientation to Engineering	1	ENGL 1007 – Seminar in Writing	4
Area 2 (Social Sciences)	3		1
	15		

SOPHOMORE			
First	**Credit**	**Second Semester**	**Credit**
Lab Science[1]	4	CSE 3666 - Intro to Computer Architecture	3
CSE 2500 - Intro to Discrete Systems	3	CSE 3500 - Algorithms and Complexity	3
CSE 3100 - Systems Programming	3	CSE 3140 - Cybersecurity Lab	2
MATH 2110Q - Multivariable Calculus **or** MATH 2410Q - Elem. Differential Equations	4 or 3	Area 2 (Social Science)	3
		PHIL 1104 (Area 1) – Phil. and Soc Ethics	3
Area 1 (Arts and Humanities)	3		1
	17 or 16		

JUNIOR YEAR			
First	**Credit**	**Second Semester**	**Credit**
CSE xxxx - Concentration course 1	3	CSE xxxx - Concentration course 2	3
CSE 3150 - C++ Essentials **or** CSE 3160 - Functional Programming Fundamentals	3	Area 4 Course (Diversity and Multiculturalism)	3
Prob. and Stat.Course[2]	3	CSE 3000 - Contemporary Issues in CSE	1
MATH 2210Q - Linear Algebra	3	CSE Elective[3]	3
Elective	3	Elective	3
	15	Elective	3
			16

SENIOR YEAR			
First	**Credit**	**Second Semester**	**Credit**
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	3	Elective[4]	4 to 5
	15		13 to 16

Additionally the program must include 1) one W course other than CSE 4939W, which may be used to satisfy other requirements or Free Electives, and 2) one E course of at least three credits in Environmental Literacy.

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[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 ERTH 1050.

[2]   This course must be chosen from the list of MATH 3160 - Probability, STAT 3025Q - Statistical Methods I, STAT 3345Q - Probability Models for Engineers or STAT 3375Q - Introduction to Mathematical Statistics I.

[3]   If needed to get at least 43 credits in CSE courses.

[4]   Sufficient to make 120 credits.

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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***.

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.

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