Computer Science & Engineering
Bachelor of Science in Engineering Program
Catalog Year 2021-2022

FRESHMAN YEAR

First Semester	Credits	Second Semester	Credits
CHEM 1127Q or 1147Q-Gen. Chem. I or Honors Chem	4	PHYS 1501Q-Engineering Phys. I	4
MATH 1131Q- Calculus I	4	MATH 1132Q-Calculus II	4
ENGL 1010 or ENGL 1011-Acad. Writing	4	CSE 1729 - Intro to Principles of Programming	3
CSE 1010 - Intro Computing for Engineers	3	Area 2 (Social Science)	3
ENGR 1000-Orientation to Engineering	1	Area 1 (Arts and Humanities)	3
	16		17

SOPHOMORE YEAR

First Semester	Credits	Second Semester	Credits
PHYS 1502Q-Engineering Phys II	4	MATH 2410Q-Differential Equations	3
MATH 2110Q-Multivariable Calculus	4	CSE 2500 -Intro to Discrete Systems	3
CSE 2050 – Data Structures and Object-oriented Design	3	ECE 2001 – Electric Circuits	4
CSE 2301–Principles & Practice of Digital Logic	4	PHIL 1104 (Area 1) - Phil. and Social Ethics	3
	15	Area 2 (Social Science)	3
			1

JUNIOR YEAR

First Semester	Credits	Second Semester	Credits
CSE 3100 - Systems Programming.	3	CSE xxxx - Concentration course 1	3
CSE 2304 or 3666 - Intro. to Comp. Arch.	3	CSE 3504- Prob. Perf. Analy. of Computer Sys.	3
CSE 3500- Algorithms and Complexity	3	CSE 3000-Contemporary Issues in	1
Prob. and Stat.Course[1]	3	CSE CSE 3140 – Cybersecurity Lab	2
Area 4 (Diversity and Multiculturalism)	3	Math 2210Q-Linear Algebra	3
	15	Elective	4
			16

SENIOR YEAR

First Semester	Credits	Second Semester	Credits
CSE 4939W-CS & E Design Project I	3	CSE 4940-CS & E Design Project II	3
CSE xxxx - Concentration course 2	3	CSE xxxx - Concentration course 4	3
CSE xxxx - Concentration course 3	3	CSE Elective[2]	3
Elective	3	Elective	4
Elective	3	Area 4 (Diversity and Multiculturalism)	3
	15		16

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

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

2   If needed to get 50 CSE credits. 126 total credits required, including 50 CSE credits.

Revised 5/28/2021

Computer Science & Engineering Concentration Requirements

Every CSE 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.