Computer Science & Engineering
Bachelor of Science in Engineering Program
Catalog Year 2020-2021

FRESHMAN YEAR

First Semester	Credits	Second Semester	Credits
CHEM 1127Q or 1147Q-Gen. Chem. I or Honors Chem. I	4	PHYS 1501Q-Engineering Phys. I	4
MATH 1131Q - Calculus I	4	MATH 1132Q-Calculus II	4
ENGL 1007 - Seminar in 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 – Digital Logic Design	4	PHIL 1104 (Area 1) - Phil. and Social Ethics	3
	15	Area 2 (Social Science)	3
			16

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 CSE	1
Prob. and Stat. Course[1]	3	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) and one E course, which may be used to satisfy other requirements or Free Electives.

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 2/4/19

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 8 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: 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 8: 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.