

Course road map for computer engineering majors

First-year courses

Autumn semester

Required core courses	Credits
Fundamentals of Engineering I (ENGR 1181).....	2
Calculus I (MATH 1151).....	5
General Chemistry for Engineers (CHEM 1250).....	4
Engineering Survey (ENGR 1100)	1
General education courses	Credits
One elective from general education.....	3
Total credit hours	15

Spring semester

Required core courses	Credits
Fundamentals of Engineering II (ENGR 1182).....	2
Engineering Mathematics (MATH 1172)	5
Mechanics, Thermal Physics, Waves (PHYS 1250) ...	5
Intro to Computer Programming C++ (ENGR 1222)...3	
General education courses	Credits
One elective from general education.....	3
Total credit hours	18

Second-year courses

Autumn semester

Required core courses	Credits
E&M, Optics, Modern Physics (PHYS 1251).....	5
Linear Algebra (MATH 2568).....	3
Introduction to ECE (ECE 2000)	4
Software I, Components (CSE 2221).....	4
Total credit hours	16

Spring semester

Required core courses	Credits
Foundations I, Discrete Structures (CSE 2321)	3
Introduction to ECE II (ECE 2100)	4
Intro. to Microcontroller-Based Systems (ECE 2560) ...	2
Software II, Development and Design (CSE 2231)....	4
Advanced C Programming (CSE 2451)	2
General education courses	Credits
One elective from general education.....	3
Total credit hours	18

Third-year courses

Autumn semester

Required core courses	Credits
Intro to Probability and Statistics (STAT 3470).....	3
Intro to Electronics (ECE 3020)	3
Advanced Digital Design (ECE 3561)	3
Microcontroller Lab (ECE 3567)	1
Ord. and Part. Differential Equations (MATH 2415)...3	
General education courses	Credits
One elective from general education.....	3
Total credit hours	16

Spring semester

Required core courses	Credits
Computer Architecture and Design (ECE 5362)	3
Systems 2: Intro to Operating Systems (CSE 2431).....	3
CSE elective courses	Credits
Technical or directed electives	3
General education courses	Credits
Two electives from general education.....	6
Total credit hours	15

Fourth-year courses

Autumn semester

Required core courses	Credits
Engineering Economics (ISE 2040)	2
Ethics and Professionalism (ECE 3080).....	1
Technical Writing and Presentations (ECE 3090).....	1
General education courses	Credits
One elective from general education.....	3
CSE elective courses	Credits
Technical or directed electives	8
Total credit hours	15

Spring semester

Required core courses	Credits
Capstone Design (ECE 4900).....	3
General education courses	Credits
One elective from general education.....	3
ECE elective courses	Credits
Technical or directed electives	9
Total credit hours	15

Technical/Directed Electives

Students are required to take 20 elective hours, including 9 hours from the courses listed below. At least one of these electives must be a 5000-level course and at least two electives must be labs. Up to 11 hours of the electives may be directed elect

Mixed Signal VLSI
.....(ECE 5020).....3

Microprocessor Based Systems
.....(ECE 5465).....3

Digital Design & Comp. Architecture
.....(ECE 5462).....3
.....ECE 5467)..... 3

Computer Networks
.....(ECE 5101)..... 3
.....(ECE 5461)..... 3

Signals and Systems
.....(ECE 3050)..... 3

Robotics and Control for Automation
.....(ECE 3551)..... 3
.....(ECE 5463)..... 3
.....(ECE 5554)..... 3

Digital Signal Processing/Image Processing
.....(ECE 5200)..... 3
.....(ECE 5206)..... 3
.....(ECE 5460)..... 3

Numerical Analysis(CSE 5361)..... 3

Database/Algorithms
.....(CSE 3241)..... 3
.....(CSE 5242)..... 3

High Performance Computing(CSE 5441)..... 3