BSCmpE Electives

The BSCmpE degree program includes five distinct types of electives. They are 1) Advanced Computer Engineering, 2) Computer Engineering, 3) Math/Science/Technical, 4) Restricted, and 5) General Education. Descriptions and requirements for these electives are given below.

Advanced Computer Engineering Elective Courses – 6 Credit Hours

Choose 6 credit hours from the following list.

- ECE 42100 Advanced Digital Systems Design
- ECE 46100 Software Engineering
- ECE 46300 Intro to Computer Communication Networks (*or ECE54700*)
- ECE 46800 Introduction to Compilers and Translation Engineering
- ECE 47100 Embedded Systems
- ECE 56401 Computer Security
- ECE 56500 Computer Architecture
- ECE 59500 Database Management Systems

Computer Engineering Elective Courses – 9 Credit Hours

Choose 9 credit hours from the following list. At least 3 credit hours must be at or above 400-level.

- Any non-required ECE 30000 or above courses, except ECE 32600, ECE 32700, ECE 31500, ECE 34000, and ECE35900
- ECE 25500: Intro. to Electronic Analysis & Design
- CSCI 35500: Intro. to Programming Languages
- MATH 41400: Numerical Analysis
- CSCI 43700: Intro. to Computer Graphics
- CSCI 43500: Multimedia Information Systems
- CSCI 43800: Computer Graphics II
- CSCI 48100: Data mining
- CSCI 44300: Database Systems
- Courses ECE 49500 and ECE 39501 Selected Topics in Electrical Engineering are variable topic courses and might not be approved for use as a computer engineering elective. Check with an ECE academic advisor for verification.

Math/Science/Technical Elective Courses – 3 Credit Hours

- Any non-required course from lists of Electrical Engineering Electives or Computer Engineering Electives or Advanced Computer Engineering Electives.
- Any 300-level or above math/science course *with prior written approval* of student's advisory committee. No CSCI-N courses are allowed as electives
- Any of the following courses.

MATH 33300: Chaotic Dynamical Systems	PHYS 40000: Quantum Mechanics
MATH 35100: Elementary Linear Algebra	PHYS 52000: Mathematical Physics
MATH 51000: Vector Calculus	PHYS 53000: Electricity & Magnetism
MATH 52000: Boundary Value Prob. of Diff. Eqn.	PHYS 54500: Solid State Physics
MATH 51100: Linear Algebra with Applications	PHYS 55000: Introduction to Quantum Mechanics
MATH 52300: Introduction to Partial Diff. Eqn.	ECE 32600: Engineering Project Management
MATH 52500: Introduction to Complex Analysis	BME 24100: Biomechanics
MATH 52600: Principles of Math. Modeling	BME 35200: Cell/Tissue Behavior and Properties
MATH 52700: Advanced Math. Eng. & Physics I	CSCI 30000: Systems Programming
MATH 52800: Advanced Math. Eng. & Physics II	CSCI 44300: Database Systems
MATH 53000: Functions of a Complex Variable I	CSCI 46300: Analysis of Algorithms
MATH 53100: Functions of a Complex Variable II	CSCI 48700: Artificial Intelligence
MATH 54400: Real Analysis and Measure Theory	NEWM-N 444: Stereoscopic Production and Design
BIOL K10100: Concepts of Biology I	ME 31000: Fluid Mechanics
BIOL K10300: Concepts of Biology II	ME 29500: Engineering Mechanics & Heat
BIOL K32400: Cell Biology	ME 20000: Thermodynamics I
CHEM C10600: Principles of Chemistry II	ME 27000: Basic Mechanics I
CHEM C31000: Analytical Chemistry	ME 27200: Mechanics of Materials
CHEM C34100: Organic Chemistry	ME 27400: Basic Mechanics II
CHEM C36000: Elementary Physical Chemistry	ME 30100: Thermodynamics II
CHEM C36100: Phys. Chemistry of Bulk Matter	ME 34000: Dynamic Systems and Measurements (2cr)
CHEM C36200: Phys. Chemistry of Molecules	ME 34400: Introduction to Engineering Materials
PHYS 31000: Intermediate Mechanics	Three or more 1-credit sessions of either:
PHYS 34200: Modern Physics	ENGR 20000, ENGR 25000, ENGR 30000, ENGR 35000, ENGR 40000, or
PHYS 40000: Physical Optics	ENGR 20010, ENGR 25010, ENGR 30010

Restricted Elective – 5 Credit Hours

Choose 5 additional credit hours from any of these approved elective lists: Advanced Computer Engineering; Computer Engineering; Math/Science/Technical; Cultural Understanding; Arts & Humanities; Social Sciences.

General Education Elective Courses - 9 Credit Hours: Choose Cultural Understanding, Arts & Hum, Social Sci