Computer Engineering: Standard Program Technical Electives

**Program Requirements:**

- In the standard Computer Engineering program, **four** Technical Elective Courses are required as of fall 2014 (ECE 4740 is no longer required, hence the additional of a fourth Technical Elective). A **maximum of 1 Electrical Engineering Technical Elective** can be taken from the list below:

### Computer Engineering Technical Elective courses:

- ECE 3750 System Engineering Principles 2
- ECE 3770 Digital Systems Design 2
- ECE 4250 Digital Communications
- ECE 4420 Digital Control
- ECE 4440 Computer Vision
- ECE 4520 Simulation & Modelling
- ECE 4530 Parallel Processing
- ECE 4540 Wireless Networks
- ECE 4850 Performance Evaluation for Communications and Computer Engineering
- ECE 4850 - 4880 Contemporary Topics in ECE

### Computer Science Technical Elective courses:

- COMP 2150 Object Orientation
- COMP 2160 Programming Practices
- COMP 3010 Distributed Computing
- COMP 3020 Human Computer Interaction 1
- COMP 3190 Intro. Artificial Intelligence
- COMP 3290 Intro. Compiler Construction
- COMP 3380 Database Concepts & Usage
- COMP 3490 Computer Graphics 1
- COMP 4020 Human Computer Interaction 2
- COMP 4140 Introduction to Cryptography and Cryptosystems
- COMP 4360 Machine Learning
- COMP 4490 Computer Graphics 2
- COMP 4580 Computer Security
- COMP 4720 Computer Networks 2

### Electrical Engineering Technical Elective courses: **maximum of 1**

- ECE 3540 Advanced Circuit Analysis and Design
- ECE 3580 Foundations of Electromagnetics
- ECE 3600 Physical Electronics
- ECE 3720 Electric Power & Machines
- ECE 4100 Microelectronic Fabrication
- ECE 4150 Control Systems
- ECE 4160 Control Engineering
- ECE 4180 Introduction to Robotics
- ECE 4260 Communication Systems
- ECE 4390 Engineering Computations 4E

ECE 4610 Biomedical Instrumentation & Signal Processing

**Allowed Courses for Natural Science Electives**

**Program Requirements:**

- Two Natural Science Elective courses must be taken by Computer Engineering students. At least 1 must be taken from the Group A list shown below. The remainder can be either from the below Group A or B lists.
- These courses can be taken anytime during the student’s program.

### Group A Science Electives: **must take 1**

- CHEM 1310 Introduction to Physical Chemistry
- PHYS 2600 Electromagnetic Field Theory
- PHYS 3630 Electro - and Magnetostatic Theory

### Group B Science Electives:

- BIOL 1020 Biology 1: Principles & Themes
- BIOL 1300 Economic Plants
- BIOL 1410 Anatomy of the Human Body
- CHEM 1320 Introduction to Organic Chemistry
- ENTM 2050 Introduction to Entomology
- GEOL 1340 The Dynamic Earth
- GEOL 2250 Geology for Engineers
- MBIO 1220 Essentials of Microbiology
- PHYS 1810 General Astronomy 1
- PHYS 1820 General Astronomy 2
- PHYS 2260 Optics
- PHYS 2380 Quantum Physics 1
- PHYS 2650 Classical Mechanics 1
- PHYS 3180 Stars
- PHYS 3220 Medical Physics and Physiological Measurement