Computer Engineering BS Degree
Curriculum Chart
2007-2008

Math

MATH 19A Calculus
MATH 19B Calculus
MATH 23A Multivariable Calculus
EE 103 Signals & Systems

Core Courses

CMPE 1 (Optional)
Hands on Computer Engineering

CMPE 12/L Intro to Programming
CMPE 12B/M Data Structures
CMPS 101 Abstract Data Types & Algorithms
CMPE 110 Computer Architecture
CMPE 121/L Micro Systems
CMPE 185 Tech Writing
EE 70/L Electronics
CE 80E Engineering Ethics

CMPS 12/L Computer Systems & Assembly Language
CMPE 100/L Logic Design

CMPE 16 or 16H Discrete Math
CMPE 107 Stochastic

Science

and

PHYS 5A/L or 6A/L Mechanics
PHYS 5C/N or 6C/N Electricity & Magnetism

Physics

PHYS 5B/M or 6B/M Waves
PHYS 5D or PHYS 1xx Heat
or PHYS 1xx Upper Division 5 Unit Course

Chemistry

CHEM 1A General Chemistry
CHEM 1B/M General Chemistry

Earth Science

EART 10/L Geo Principles
EART 1xx (NOT 111)

Biology

CHEM 1B/M General Chemistry
BIOL 20A Cell & Molecular

Concentrations
(choose one)

System Programming

CMPS 111 OS
CMPS 115 Software Methodology
Upper Division Elective from Approved List

Three of the following:
- CMPE 117/L Embedded Software
- CMPE 118/L Intro to Mechatronics
- CMPE 167/L Sensing and Sensor EE 154 Feedback Control Systems

Choice of one of the following:
The fourth class from list above
- OR CMPE 174 & Upper Division Elective from Approved List
- OR One from this list: AMS 146, AMS 162, CMPE 153, CMPE 242, CMPE 240, ISM 206

Robotics and Control

CMPS 111 OS
CMPE 150 Networks
CMPE 156/L Network Programming Or CMPE 151 Network Administration

Three of the following:
- CMPE 174 Tools for Digital Systems Design
- CMPE 173/L High Speed

Computer Systems

CMPS 118/L Intro to Mechatronics
Upper Division Elective from Approved List

One of the following:
- CMPE 125/L Logic w/ Verilog
- CMPE 126/L Advanced Logic

Networks

CMPS 111 OS
CMPE 150 Networks
CMPE 156/L Network Programming Or CMPE 151 Network Administration

Upper Division Elective from Approved List

Digital Hardware

EE 171/L Analog Electronics
CMPE 174
CMPE 173/L High Speed
Upper Division Elective from Approved List

One of the following:
- CMPE 125/L Logic w/ Verilog
- CMPE 126/L Adv Logic

Two of the following:
(one must be a CMPE course)
- CMPS 104A Compilers I
- CMPS 104B Compilers II
- CMPE 113 Parallel Programming
- CMPS 116 Software Design Project
- CMPE 117/L Embedded Software
- CMPE 118/L Intro. to Mechatronics
- CMPE 156/L Network Programming

Three of the following:
- CMPE 117/L Embedded Software
- CMPE 118/L Intro to Mechatronics
- CMPE 167/L Sensing and Sensor EE 154 Feedback Control Systems

Choice of one of the following:
The fourth class from list above
- OR CMPE 174 & Upper Division Elective from Approved List
- OR One from this list: AMS 146, AMS 162, CMPE 153, CMPE 242, CMPE 240, ISM 206

Computer Engineering Design Project I:
CMPE 123A

Computer Engineering Design Project II:
CMPE 123B or CMPE 195: Senior Thesis

Project portfolio (3 projects and narrative statement), exit survey, and interview
COMPUTER ENGINEERING BS
DEGREE CURRICULUM

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Approved List of Upper Division Electives

AMS 147 Computational Methods and Appl.
AMS 162 Design and Anal of Comp Sim Experiments
CMPE 108 Data Compression
CMPE 113 Parallel Programming
CMPE 117/L Embedded Software
CMPE 118/L Intro to Mechatronics
CMPE 125/L Logic Design with Verilog
CMPE 126/L Adv. Logic Design
CMPE 127 Comp.-Aided Synth. of VLSI
CMPE 150 Intro. to Computer Networks
CMPE 151 Network Administration
CMPE 152 Analysis & Design Comm. Protocols
CMPE 154 Data Communications
CMPE 156/L Network Programming
CMPE 167/L Sensor and Sensor Technologies
CMPE 172/L Linear/Nonlin. Circuits
CMPE 173/L High Speed Digital Design
CMPE 177 Applied graph Theory/Alg.

CMPS 102 Analysis of Algorithms
CMPS 104A Compiler Design I
CMPS 104B Compiler Design II
CMPS 110 Advanced Programming
CMPS 111 Operating Systems
CMPS 115 Software Methodology
CMPS 116 Software Design Project
CMPS 122 Computer Security
CMPS 129 Data Storage Systems
CMPS 130 Computational Models
CMPS 132 Computability and Completeness
CMPS 140 Artificial Intelligence
CMPS 142 Machine Learning and Data Mining
CMPS 146 Game AI
CMPS 160/L Computer Graphics
CMPS 161/L Visualization & Compt. Animation
CMPS 164/L Game Engines and Game Engines Lab
CMPS 180 Database Systems
CMPS 181 Database Systems II
CMPS 183 Hypermedia and the Web
CMPS 190X Methods of Cryptography
EE 127 & 128 Interdis. System Design Project I/II
EE 130/L Optoelectronics & Photonics
EE 135/L Electro. Fields and Waves
EE 136 Engr. Electromagnetics
EE 145/L Properties of Materials
EE 151 Communications Systems
EE 152 Introduction to Wireless Communications
EE 153 Signal Processing
EE 154 Feedback Control Systems
EE 171/L Analog Electronics
EE 178 Device Electronics
ISM 206 Optimization Theory and Appl.

Any 5-Credit CS, CE, or EE Graduate Course:
CMPE 265A & CMPE 265B Special Topics in Image Processing
At most, one elective may be substituted by an upper-division individual or field study (CMPE, CMPS, EE 193 or 198).

*Approved List of Ethics Courses:

STUDENT’S NAME: ______________________________________________________

STAFF ADVISOR: __________________________________________________________

Watch for CEFULs: CE Faculty-Undergraduate Lunches, regularly scheduled throughout the year, CE’s free lunch program.