

**UCSC Baskin School of Engineering  
Computer Engineering BS Degree  
Curriculum Chart  
2004-2005**

### Math

MATH 19A Calculus	AMS 27/L Engineering Math	MATH 21 Linear Algebra
MATH 19B Calculus		MATH 24 Differential Equations
MATH 23A Multivariable Calculus		CMPE 16 or 16H Discrete Math
EE 103 Signals & Systems (Or MATH 23B) <sup>†</sup>		CMPE 107 Stochastic

### Core Courses

CMPS 12A/L Intro to Programming	CMPE 12/L Computer Systems & Assembly Language	CMPE 185 Tech Writing
CMPS 12B/M Data Structures	CMPE 100/L Logic Design	EE 70/L Electronics
CMPS 101 Abstract Data Types & Algorithms	CMPE 110 Computer Architecture	CE 80E Engineering Ethics
	CMPE 121/L Micro Systems	

### Science

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

<b>Physics</b>	<b>Chemistry</b>	<b>Earth Science</b>	<b>Biology</b>
PHYS 5B/M or 6B/M Waves	CHEM 1B/M or 4A/L General Chemistry	EART 10/L Geo Principles	CHEM 1B/M or 4A/L General Chemistry
PHYS 5D or PHYS 1xx Heat Upper Division 5 Unit Course	CHEM 1C/N or 4B/M General Chemistry	EART 1xx (NOT 111)	BIOL 20A OR BIOL 21A Cell & Molecular

### Concentrations (choose one)

<b>System Programming</b>	<b>Multimedia</b> (EE 103 required)	<b>Computer Systems</b>	<b>Networks</b> (EE 103 required)	<b>Digital Hardware</b>
CMPS 111 OS	CMPE 108 Data Compression	CMPS 111 OS	CMPS 111 OS	EE 171/L Analog Electronics <b>or</b> CMPE 172/L Linear/Nonlinear Circuits
CMPS 115 Software Methodology	CMPE 150 Networks	CMPE 118 Intro to Mechatronics (Or other course from approved elective list)	CMPE 150 Networks	CMPE 173/L High Speed
Upper Division Elective from Approved List	CMPE 163/L Multimedia Proc. & Application	Upper Division Elective from Approved List	CMPE 156/L Network Programming	Upper Division Elective from Approved List
<b>Two of the following:</b> (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	Upper Division Elective from Approved List	CMPE 125/L Logic w/ Verilog <b>or</b> CMPE 126/L Advanced Logic	Choose one: CMPE 108   CMPE 117/L CMPE 118/L   CMPE 125/L CMPE 151   CMPE 154 CMPE 163/L   EE 151	<b>One of the following:</b> • CMPE 125/L Logic w/ Verilog • CMPE 126/L Adv Logic
			Upper Division Elective (Faculty Advisor Approved)	
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		

<sup>†</sup>EE 103 required for Multimedia and Networks Concentrations

Shaded boxes represent foundation courses

UCSC BASKIN SCHOOL OF ENGINEERING  
COMPUTER ENGINEERING BS  
DEGREE CURRICULUM  
2004-2005

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

Fall _____	Winter _____	Spring _____	Summer _____

**Approved List of Upper Division Electives**

- |  |  |  |
|--|--|--|
| AMS 147 Computational Methods and Applic.<br>AMS 162 Design and Anal. of Comp Sim Expmts<br>CMPE 108 Data Compression<br>CMPE 113 Parallel Programming<br>CMPE 117/L Embedded Software<br>CMPE 118/L Introduction to Mechatronics<br>CMPE 125/L Logic Design with Verilog<br>CMPE 126/L Adv. Logic Design<br>CMPE 127 Comp.-Aided Synth. of VLSI<br>CMPE 150 Intro. to Computer Networks<br>CMPE 151 Network Administration<br>CMPE 152 Analysis & Design Comm. Protocols<br>CMPE 154 Data Communications<br>CMPE 156/L Net work Programming<br>CMPE 163/L Multimedia Processing & Appl.<br>CMPE 172/L Linear/Nonlin. Circuits<br>CMPE 173/L High Speed Digital Design | CMPE 177 Applied graph Theory/Algor.<br>CMPS 102 Analysis of Algorithms<br>CMPS 104A Compiler Design I<br>CMPS 104B Compiler Design II<br>CMPS 109 Advanced Programming<br>CMPS 111 Operating Systems<br>CMPS 112 Comparative Prog. Langs.<br>CMPS 115 Software Methodology<br>CMPS 116 Software Design Project<br>CMPS 122 Computer Security<br>CMPS 128 Distributed Systems<br>CMPS 129 Data Storage Systems<br>CMPS 130 Computational Models<br>CMPS 132 Computability and Compl<br>CMPS 140 Artificial Intelligence<br>CMPS 160/L Computer Graphics<br>CMPS 161/L Visualization & Compt. Animation | CMPS 180 Database Systems<br>CMPS 181 Database Systems II<br>CMPS 183 Hypermedia and the Web<br>CMPS 190X Methods of Cryptography<br>EE 127 & 128 Interdis. System Design Project I/II<br>EE 130/L Optoelectronics & Photonics<br>EE 135/L Electro. Fields and Waves<br>EE 136 Engr. Electromagnetics<br>EE 145/L Properties of Materials<br>EE 151 Communications Systems<br>EE 153 Signal Processing<br>EE 154 Feedback Control Systems<br>EE 171/L Analog Electronics<br>EE 178 Device Electronics<br>ISM 206 Optimization Theory and Appl. |
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**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:** CMPE 80E Engineering Ethics; PHIL 22 Intro to Ethical Theory: Contemporary Moral Issues; PHIL 24 Intro to Contemporary Ethics; PHIL 28 Environmental Ethics; BME 80G/PHIL80G/CHEM80G Bioethics in the 21<sup>st</sup> Century: Science, Business, and Society.

**STUDENT'S NAME:**

**STAFF ADVISOR:**

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