California State University Northridge

FOUR-YEAR PLAN - <u>COMPUTER ENGINEERING DEGREE</u>

This is a suggested schedule for students wishing to complete their degree in 4 years. The number of units required in each semester can be reduced by taking some courses during summer school or by spreading the program out over a longer time period. Students are encouraged to meet regularly with an advisor.

FRESHMAN YEAR

Fall Semester		Spring Semester	
Course	**Units**	**Course**	**Units**
Comp 110/L - Introduction to Algorithms and Programming & Lab	3, 1	Math 150B - Calculus II	5
Math 150A - Calculus l	5	Phys 220A/L - Mechanics & Lab	3, 1
BIOL 106 Biological Principles I	3	GE Basic Skills: Oral Communication	3
GE Basic Skills: Written Communication	3	Comp 182/L - Data Structures and Program Design & Lab	4
Total Units	**15**	**Total Units**	**16**

SOPHOMORE YEAR

Fall Semester		Spring Semester**	
Course	**Units**	**Course**	Units
Math 250 - Calculus III	3	ECE 240/L - Elect Engr. Fund. & Lab	3, 1
Phys 220B/L - Elec. & Magnetism Lab	3, 1	Comp 282 - Advanced Data Structures	3
GE Arts and Humanities	3	Math or ECE 280 - Applied Differential Equations	3
GE US History	3	Comp E. Math and Science Elective	3
GE Comparative Cultures	3	GE U.S. and California Government	3
Total Units	**16**	**Total Units**	**16**

JUNIOR YEAR

Fall Semester		Spring Semester	
Course	**Units**	**Course**	**Units**
ECE 320/L - Theory of Digital Systems & Lab	3, 1	ECE 442/L - Digital Electronics & Lab	3, 1
ECE 340/L - Electronics l & Lab	3, 1	ECE 425/L - Microprocessor Sys. & Lab	3, 1
ECE 350 - Linear Systems l	3	ECE 351 – Linear Systems II	3
MSE 304 - Engineering Econ. Analysis	3	GE Social Sciences [2]	3
ECE 309 – Numerical Methods in Elect Engr.	2		
Total Units	**16**	**Total Units**	**14**

SENIOR YEAR

Fall Semester		Spring Semester	
Course	**Units**	**Course**	**Units**
ECE 420 - Digital Systems Design w/ Programmable Logic	3	ECE 493 - Senior Design Project II	1
ECE 422 - Design of Dig. Computers	3	Comp E. Elective [3]	3
ECE 450 – Probabilistic Systems in EE Design and Analysis	3	Comp E. Elective [3]	3
ECE 492 - Senior Design Project l	2	GE Upper Division Arts and Humanities	3
Comp E. Electives [3]	6	GE Upper Division Comparative Cultures	3
Total Units	**17**	**Total Units**	**13**
		OVERALL TOTAL UNITS	**123**

*Start Math/Science electives if they include chemistry or Biology; otherwise start them in the Fall of the sophomore year.

[1] Math/Science electives must be selected from the list on the next page.

[2] See "*Engineering Major General Education Planning Form*" and/or DPR.

[3] CompE Electives must be selected from the list on the next page. A 4-unit course indicates a lecture/lab course, while a 3 unit course is lecture only. Students are always recommended to take the lab for lecture/lab courses. See "Instructions for Filing Senior Program", available in the ECE Department Office.

**Upper Division writing exam should be completed before the beginning of the Spring Semester in the Junior Year.

FOUR-YEAR PLAN - <u>COMPUTER ENGINEERING DEGREE</u>

MATH/SCIENCE ELECTIVES
(*3 Units Minimum*)

	Course	Units
Biology 106L	Biological Principles I Lab	1
Biology 107/L	Biological Principles II and Lab	3, 1
Chem 101/ L	General Chemistry I and Lab	4, 1
Chem 102/L	General Chemistry II and Lab	4, 1
Math 262	Introduction to Linear Algebra	3
Math 326	Discrete Mathematics	3
Phys 227/L	Physics III and Lab	4, 1
Phys 375	Introduction to Quantum Physics	3

COMPUTER ENGINEERING ELECTIVES (CompE)
(*12 Units Minimum*)

	Course	Units
ECE 420L	Digital Systems Design with Programmable Logic Lab	1
ECE 443/L	Pulse and Waveshaping Circuit Design	3, 1
ECE 520/L	System on Chip Design & Lab	
ECE 524/L	FPGA/ASIC Design & Optimization Using VHDL & Lab	3, 1
ECE 526/L	Verilog HDL for Digital Integrated Circuit Design & Lab	3, 1
ECE 527/L	Application Specific Integrated Circuit Development	3, 1
ECE 546	Very Large Scale Integrated Circuit Design	3
ECE 551	Image Processing	3
ECE 562	Data Communication Network	3
COMP 322/L	Introduction to Operating Systems and System Architecture and Lab	3, 1
COMP 380/L	Introduction to Software Engineering and Lab	2, 1
Comp 424	Computer System Security	3
Comp 429	Computer Network Software	3
COMP 522	Embedded Applications	3
Comp 529/L	Advanced Network Topics and Lab	2, 1
Comp 539	Network Infrastructure	3
Comp 581	Open Source Software	3