COMPUTER ENGINEERING

Faculty

Professors
Beal
Denenberg

Associate Professors
Govil
Lyon, *chair*
Weiman

Senior Instructor
Reed

Bachelor of Science

The educational objectives of the Bachelor of Science degree program in Computer Engineering are as follows:

• Domain Knowledge: Graduates will be able to apply their in-depth understanding in areas of computer systems within constraints of performance specification, budget and scheduling.

• Professional Practice: Graduates will develop their engineering design, problem-solving skills and aptitude for innovation as they work on multi-disciplinary teams.

• Life-Long Learning: Graduates will become experts in their chosen fields and broaden their professional knowledge with formal and/or informal continuing education.

• Engineering Citizenship: Graduates will practice the ethics of their profession consistent with a sense of social responsibility.

Computer engineering students obtain the tools they need to take the lead in creating the next generation of computer technologies. They are immersed in computer science, digital design, , electrical engineering, physics, mathematics, and the liberal arts. Sequences of general and major electives, as well as a senior project, customize the program to the needs of the student. Students are exposed to high-tech areas in three broad computer engineering domains: signal processing, visualization and computer systems. Topics include networking, computer graphics, image processing, multimedia programming, visualization, and display techniques. Students become skilled in object-oriented design while using state-of-the-art facilities. Our close interactions with industry enable our computer engineers to be employed by all sectors of industry, government, and academe. They are active in the areas of hardware and software design and information technologies, and take the lead in the research and devel-

opment of new computer systems and applications. Demand for computer engineering graduates has been consistently strong and is expected to persist..

**Computer Engineering Curriculum
(132 credits)**

Year 1 – Fall Semester		Credits
MA 125	Calculus I	3
PS 15	General Physics I	3
PS 15L	General Physics Lab I	1
EG 31	Fundamentals of Engineering I	3
CS 131	Computer Programming I	3
EN 11	Composition and Prose Literature	3
Total		16

Year 1 – Spring Semester		
MA 126	Calculus II	3
PS 16	General Physics II	3
PS 16L	General Physics Lab II	1
EG 32	Fundamentals of Engineering II	3
CS 132	Computer Programming II	3
EN 12	Introduction to Literature and Writing the Research Paper	3
Total		16

Year 2 – Fall Semester		
MA 227	Calculus III	3
EE 213	Introduction to Electric Circuits	3
EE 213L	Electric Circuits Lab	1
ME 201	Engineering Statics	3
CS 231	Discrete Mathematics	3
CS 232	Data Structures	3
Total		16

Year 2 – Spring Semester		
MA 228	Calculus IV	3
CR 245	Digital Design I	3
CR 245L	Digital Design I Lab	1
AH 10	Origins and Transformations in Western Art	3
PH 10	Introduction to Philosophy	3
HI 30	Europe and the World in Transition	3
Total		16

Computer Engineering

Year 3 – Fall Semester

MA 321	Ordinary Differential Equations	3
CR 310	Voice and Signal Processing	3
PS 285	Modern Physics	3
CR 246	Digital Electronics Design II	3
EE 346	Microprocessor Hardware	3
EE 346L	Microprocessor Lab	1
Total		16

Year 3 – Spring Semester

MA 351	Probability and Statistics I	3
CR 311	Image Processing	3
CD 211	Engineering Graphics I	3
RS 10	Introduction to Religious Studies	3
EC 11	Microeconomics	3
EL	General Elective	3
Total		18

Year 4 – Fall Semester

CR 320	Computer Networks	3
CR 206	Electro-Optical Communications Lab	1
CR 390	Senior Project I	3
PH	Philosophy Elective	3
RS	Religious Studies Elective	3
HI	History Elective	3
Total		16

Year 4 – Spring Semester

CR 325	Computer Graphics	3
CR 391	Senior Project II	3
EN	English Elective	3
EL	General Elective	3
AE	Applied Ethics Elective	3
SS/EL	Social Science Elective	3
Total		18

Computer Engineering Electives

Electives shown below help deepen a student's knowledge and skills in specific areas of the discipline

Communications
(Prerequisite: EE 213)
EE 301   Signals and Systems I

Computer Engineering
CR 382   Independent Studies in Computer
               Engineering

Computer Science
Any approved 300-level CS course

Electronic Devices
(Prerequisite: EE 213)
EE 231-231L Electronic Circuits and Devices, plus Lab
EE 331-331L Analog Electronics Design, plus Lab

Mathematics
Any approved 300-level math course

Software Engineering
SW 410   Enterprise Java