COMPUTER ENGINEERING (CE)

CE 201 Fundamentals of Circuits and Electronics (1-3 credits)
DC circuits – including basic concepts and laws, methods of analysis, circuits theorems; AC circuits – including capacitors and inductors, sinusoids and phasors, stead state analysis, frequency response, operational amplifiers, three-phase circuits, magnetically coupled circuits, AC power analysis: faced analysis – Fourier series, Laplace and Fourier transforms, two-port networks. This course has a 1 credit Lab Component.
Course Rotation: Fall; NY & PLV

CE 202 Digital Circuit Design (1-3 credits)
Boolean algebra, principle of combinational circuits, combinational circuit components, finite state machines and synchronous sequential circuits, sequential circuit components, arithmetic's circuits design, register-transfer (RTL) design and RTL languages, digital design and simulation using Verilog, digital design using FPGA, and digital circuit applications. This course has a 1 credit Lab Component.
Course Rotation: Spring; NY & PLV

CE 303 Analog Circuit Design (1-3 credits)
Transistor models – including diode, BJT, FET, MOSFET, etc., : amplifiers – including basic amplifiers, frequency response analysis, feedback amplifiers, power amplifiers, operational amplifiers; oscillators and PLLs – ring oscillators, LC oscillators, VOC'S simple PLL, charge-pump PLL, delay-locked loops; and applications of analog circuits. This course has a 1 credit Lab Component.
Course Rotation: Fall; NY & PLV

CE 304 Embedded Software Development (1-3 credits)
Introduction of embedded operating systems, ARM and Linux architecture, embedded software platforms, real-time operating systems, timers, interrupt systems, bus architecture, process scheduling, multi-threaded programming, inter-process communications and synchronization, dead-locks and live-locks, peripheral interfaces, serial ports and parallel ports, blocking and non-blocking, device drivers and embedded applications. This course has a 1 credit lab component.
Course Rotation: Fall; NY & PLV

CE 405 Embedded Systems: Hardware/Software Co-design (1-3 credits)
Modern FPGAs - programmable logic, embedded processor, FPGA families and features; Language and tools - HDL languages (Verilog and VHDL), the Verilog language, C, high level synthesis; Design Flow - project specification, algorithm development, architecture selection, interfaces, implementation, verification; Design Constraints timing constraints, bandwidth constraints, resource constraints; Image Processing - point operations, geometrics operation, morphological operations, local filters, histograms, image transforms, and blob detection and labeling. This course has a 1 credit lab component.
Course Rotation: Fall; NY & PLV

CE 489 Computer Engineering Capstone I (4 credits)
This is part 1 of the Computer Engineering Capstone Project. This course uses instructor-guided team projects to develop skills of holistic application and integration of learned knowledge in this program to solve real world problems, and develop ability of life-long learning.
Course Rotation: Fall; NY & PLV

CE 499 Computer Engineering Capstone II (4 credits)
This is part 2 of the Computer Engineering Capstone Project. This course uses instructor-guided team projects to develop skills of holistic application and integration of learned knowledge in this program to solve real world problems, and develop ability of life-long learning.
Course Rotation: Spring; NY & PLV