

COMPUTER ENGNR LEC/LAB (CETC)

CETC 1114 Digital Fundamentals

Credit Hours: 4

Prerequisites: MAT 1033 and EET 1084 - both courses with a grade of "C" or higher or consent of instructor

Lab Fee: Yes

This course covers number systems, logic gates, Boolean algebra, Karnaugh Map minimization techniques, adders, comparators, encoders, decoders, multiplexers, flip flops, counters, registers, memories, programmable logic devices (PLDs) and Integrated Circuit (IC) technologies. This course provides the student the opportunity to design and build various digital circuits.

CETC 1123 Microprocessor Fundamentals

Credit Hours: 4

Lab Fee: Yes

This course is an introduction to the history, internal electronic architecture, and usage of various microprocessor platforms. It introduces assembly language programming on the x86 line of microprocessors and Physical Computing using high-level languages such as BASIC, C, and Python to program microcontrollers. The course uses various single board computer (SBC) platforms such as the Parallax Basic Stamp, the Arduino, and the Raspberry Pi and their variants to provide hands-on practice in Physical Computing.

CETC 2890 Cybersecurity

Credit Hours: 3

Prerequisites: CTS 1321, CTSC 1134, CTS 1383, and CTSC 2120 - all courses with a grade of "C" or higher

Lab Fee: Yes

This course focuses on one of the most important and urgent concepts in protecting computers and networks: Intrusion detection. This class will cover concepts and demonstrations of Footprinting, Scanning, Enumeration, Penetration, Privilege escalation, Covering Tracks and Back Doors. This course is aimed at providing essential basic skills and knowledge pertaining to information security, security threats, network attacks, and hacking, security models, policies, standards and people, risk management, malware viruses and Trojans, e-mail vulnerabilities and security, intrusion detection and prevention, ethical issues in information security, and social engineering techniques.