ELECTRONIC ENGINEER LC/LB (EETC)

EETC 1005 Basic Electricity/Electronics
Credit Hours: 4
Lab Fee: Yes
A comprehensive introduction using a broad based approach covering principles upon which modern electronic/electrical systems operate. Introduction to basics of electronics, measuring devices, basic units, resistance, conductors, measurement, sources, series/parallel circuits, common DC/AC circuits, and safety will be covered.

EETC 1025 Circuit Fundamentals
Credit Hours: 4
Lab Fee: Yes
This course covers direct current (DC) and alternating current (AC) circuit theory and computer simulation. In addition, the course includes the fundamental laws of electrical and electronic circuits, schematic symbols, and the mathematics required for analysis. The following are some of the topics covered: Series and parallel, resistance, current, and voltage at various parts of a circuit. In addition, the course includes circuit analysis methods such as Ohm's Law, Branch current, Loop current, and Node voltage methods are covered. Resistor-capacitor circuit (RC), resistor-inductor circuit (RL), and Resistance, Inductance, Capacitance (RLC) circuits, time constants, and resonance are also covered. Students will do exercises from the text book, computer simulation of circuit performance, and hands-on labs of circuits using electronic bench equipment.

EETC 1141 Analog Devices
Credit Hours: 4
Prerequisites: EETC 1025 with a grade of "C" or higher
Lab Fee: Yes
This is the first course in a sequence in analog electronics. The topics covered in this course are the history of electronics, semiconductors diodes, diode rectifier circuits, zener, veractor, light emitting diodes (LED) and special diodes, bipolar transistors, small signal transistor amplifiers, power transistor amplifiers, and amplifier frequency response. After finishing this course, the student will be able to design unregulated power supplies, transistor audio amplifiers, audio power amplifiers, audio oscillators, limiters, clampers, and several other important circuits.

EETC 1142 Analog Circuits
Credit Hours: 4
Prerequisites: EETC 1141 with a grade of "C" or higher
Lab Fee: Yes
The topics covered in this course are: operational amplifiers, active filters, mixers, oscillators, and function generators. After finishing with this course, the student will be able to design pre-amplifiers using operational amplifiers (op-amps) oscillators, comparators and active filters using op-amps, linear regulated power supplies, switching power supplies, and several other important circuits. The student will build and test several operation amplifier circuits in this class.

EETC 1610 Through-Hole and Surface-Mount Soldering
Credit Hours: 3
Lab Fee: Yes
A course for electronic technicians which includes high reliability through-hole soldering techniques, current industry soldering inspection techniques, electrostatic discharge awareness and prevention, and surface-mount techniques and an introduction to rework and repair.

EETC 1611 Standard Testing and Certification
Credit Hours: 2
Prerequisites: EETC 1610 with a grade of "C" or higher or consent of instructor
Lab Fee: Yes
This Association Connection Electronics Industries (IPC) certification course consists of five modules and is the standard for electronics assembly manufacturing. The first module is a prerequisite for all other modules. After successful completion of the first module, students then begin soldering on the circuit board to demonstrate skills of circuit board assembly and acceptable solder workmanship. Topics included are: IPC policies and procedures, wire and terminal assembly, through-hole soldering and termination, surface mounting of components, and inspection skills. Upon successful completion and examination, the student will receive an IPC J-STD-001 Certified IPC specialist (CIS) certificate.

EETC 1612 Cabling and Wire Harness Assembly
Credit Hours: 3
Prerequisites: EETC 1610 with a grade of “C” or higher and instructor permission
Lab Fee: Yes
This Association of Connection Electronics Industries certification (IPC) course follows the standards for electronics assembly manufacturing. In addition, this course will present the participants with a common understanding of the IPC/WHMA-A-620 document, terms and definitions. This includes a collection of visual, electrical and mechanical quality acceptability requirement for cable, wire and harness assemblies.

EETC 2609 Electronic Fabrication and Fiber Optics
Credit Hours: 3
Lab Fee: Yes
This course takes a hands-on approach to the soldering, wire wrapping, potting, crimping and cable lacing of electronic components and the basics of fiber optics and the fabrication of fiber optic cable assemblies, using a variety of connectors and splicing techniques. Printed circuit construction and repair are also covered as well as cable installation and troubleshooting.

EETC 2620 Advanced Surface-Mount Soldering Technology
Credit Hours: 3
Prerequisites: EETC 1610 with a grade of "C" or higher or consent of instructor
Lab Fee: Yes
This Association Connection Electronics Industries (IPC) certification course consists of an advanced hands-on surface mount and through-hole rework and repair techniques for electronic assembly manufacturing. Upon successful completion and examination, the student will receive an IPC-7711/IPC-7721 Rework and Repair Certified IPC specialist (CIS) certificate.

EETC 2724 Schematic Capture and Modeling
Credit Hours: 3
Corequisites: EET 1084
Lab Fee: Yes
This course is an introduction to electronic circuit drawing (schematic capture), computer simulation, and printed circuit board (PCB) design. Terminology and software tools are used to emphasize lectured material.