ELECTRICAL AND ELECTRONIC ENGINEERING TECHNOLOGY (EEET)

EEET 120 Circuit Fundamentals (4 Units)
Pre/Corequisite: MATH 143, MATH 144, or MATH 145, or higher math or higher math placement. SI units, current, voltage, resistance, Ohm's Law, circuit analysis, network theorems, computer simulation, inductor, capacitor, RLC dc analysis, transients, laboratory support of circuit concepts, ac introduction. (Formerly 2860:120)

EEET 121 Introduction to Electronics and Computers (2 Units)
Pre/Corequisite: MATH 143, MATH 144, or MATH 145, or higher math or higher math placement. Introduces students to computer simulation, Boolean algebra, circuit manufacturing, laboratory practices, and to the electronics industry. (Formerly 2860:121)

EEET 122 AC Circuits (4 Units)
Prerequisite: EEET 120. Pre/Corequisite: MATH 154, MATH 149 or higher math or higher math placement. Sinusoidal voltage and current, reactance and impedance, methods of AC circuit analysis, AC power, transformers, AC meters and oscilloscopes, dependent and independent sources. (Formerly 2860:122)

EEET 123 Electronic Devices (4 Units)
Prerequisite: EEET 120. Physical theory, characteristics and operational parameters of solid-state devices. Analysis and design of electronic circuits incorporating these devices, utilizing characteristic curves and linear modeling. (Formerly 2860:123)

EEET 210 Industrial Control Panel Fabrication (2 Units)
Pre/Corequisite: MATH 143, MATH 144, or MATH 145, or higher math or higher math placement. This course will introduce students to shop fabricating skills involved in the creation of electrical control panels using mechanical and electrical fabricating tools. (Formerly 2860:210)

EEET 225 Applications of Electronic Devices (4 Units)
Prerequisites: EEET 122 and EEET 123. Frequency response, filter concepts, electronic amplifiers, power amplifiers, multistage amplifiers, differential amplifiers, operational amplifiers, voltage regulators, feedback and oscillators, special devices, computer simulation analysis. (Formerly 2860:225)

EEET 237 Digital Circuits (4 Units)
Prerequisite: EEET 121 or MATH 208. Devices used in logic circuits, interfacing, combinational logic, arithmetic circuits, encoders, multiplexers, programmable logic devices, flip-flops, counters, shift registers, computer modeling of digital circuits. (Formerly 2860:237)

EEET 238 Microprocessor Applications (4 Units)
Prerequisite: EEET 237. Programmable logic devices, computer modeling of digital circuits, memory circuits. Computer architecture, programming the microprocessor, microprocessor hardware, microprocessor applications, parallel I/O and programmable timers. (Formerly 2860:238)

EEET 242 Machinery & Controls (3 Units)
Prerequisite: EEET 120 or EEET 370. Introductory study of DC and AC motors and their control. Ladder logic input devices, relays, and motor starters are explored as applied to starting DC & AC 3 Phase Induction motors. Variable Frequency Drives and Softstarts are applied with various control input schemes to AC 3 Phase Induction motors. Application of Programmable Logic Controllers and Human Machine Interfaces to the control of AC 3 Phase Induction motors. (Formerly 2860:242)

EEET 251 Electronic Communications (4 Units)
Prerequisite: EEET 225. Resonance, coupling, filters, oscillators, mixers, power amplifiers, AM, FM, receivers. (Formerly 2860:251)

EEET 260 Electrical and Electronic Project (2 Units)
Prerequisites: EEET 225 and EEET 242. Design, construction, and testing of an electrical or electronic circuit of choice. Progress reports, oral, and a poster presentation required. Discussion of electrical and electronic design, fabrication, and troubleshooting techniques. (Formerly 2860:260)

EEET 290 Special Topics: Electronic Engineering Technology (1-4 Units)
Prerequisite: Permission of instructor. Directed study in a special field of interest chosen by the student in consultation with the instructor(may be repeated for a total of six credits). (Formerly 2860:290)

EEET 310 National Electrical Code and Electrical System Design (3 Units)
Prerequisite: EEET 122 or EEET 370. This course provides students with the skills necessary to apply the National Electrical Code (NFPA 70) to the design and installation of electrical systems and circuits. (Formerly 2860:310)

EEET 350 Advanced Circuit Theory (3 Units)
Pre/Corequisite: MATH 356 or MATH 335. Nodal, mesh, Thevenin, and dependent sources in resistive circuits. Inductor and capacitor as time domain elements. First- and second-order circuit analysis. Phasor analysis. Operational amplifier analysis. (Formerly 2860:350)

EEET 352 Microcontrollers (4 Units)
Prerequisite: EEET 238. Corequisite: EEET 350. Using a typical microcontroller, study its architecture, program it, use subroutines and interrupts, use it in various applications, utilize various on-board modules including analog-to-digital, and timers. (Formerly 2860:352)

EEET 354 Advanced Circuits Applications (3 Units)
Prerequisites: [MATH 335 or MATH 356] and EEET 350. Introduction to calculus based circuit analysis. Emphasizing Laplace transforms in operational circuit analysis, transfer functions, impulse function, Bode diagrams, Fourier Series. (Formerly 2860:354)

EEET 360 Virtual Instrumentation and Data Acquisition (3 Units)
Prerequisites: EEET 122 and EEET 370. An introduction to instrumentation, data acquisition (DAQ) and graphical programming used in manufacturing and laboratory environments. (Formerly 2860:360)

EEET 370 Survey of Electronics (3 Units)
Prerequisite: MATH 154, MATH 149 or higher math or placement in higher math. Fundamentals of DC and AC electrical circuits and rotating machinery. For non-Electrical and Electronic Engineering Technology majors. (Formerly 2860:370)

EEET 400 Computer Simulations in Technology (3 Units)
Prerequisites: [MATH 335 or MATH 356] and [EEET 122 or EEET 370]. Introduce the use of software widely used in industry to simulate and study electrical circuits and signals. Methods of data sampling, management and presentation will be studied. (Formerly 2860:400)

EEET 402 Advanced Programmable Logic Controllers and Sensors (3 Units)
Prerequisite: MCET 405. Application of programmable logic controllers (PLCs) and single loop controllers to the analog control of industrial processes including variable frequency drives. Industrial sensors including temperature, flow, level, pressure, vacuum and weight. Signal scaling, open loop control and closed loop on/off, min/max process variable control and PID control. Application of PLCs in an industrial control network and the application of HMIs. The application of Process Meters in process control environment will be explored.

EEET 406 Communication Systems (3 Units)
Prerequisites: EEET 251 and EEET 354. Digital communications, transmission lines, waveguides, microwave devices and antennas. (Formerly 2860:406)

EEET 420 Biomedical Electronic Instrumentation (3 Units)
Prerequisite: EEET 354. Introduction to electrical signals from the body, transducers, recording devices, telemetry, microprocessor applications, and electrical safety of medical equipment. (Formerly 2860:420)

EEET 451 Industrial Electrical Systems (3 Units)
Prerequisite: EEET 354. Electric power, industrial nameplates, power factor correction, mutual inductance, linear transformers, power transformers, polyphase systems, per-phase analysis, system grounding, protective device coordination computer-aided analysis. (Formerly 2860:451)

EEET 452 Advanced Microcontrollers (3 Units)
Prerequisite: EEET 352. This is an advanced embedded programming class for technologists covering structured programming, embedded operating systems, multitasking, semaphores and queues, WiFi, HTML and web page servers, data servers, clocks and scheduling, sending email, WAN access, Bluetooth, and UDP communication. Hands-on hardware includes LEDs, RGB LED strands, DAC/DMA audio generation, PIR proximity sensors, and may optionally include inertial sensors. (Formerly 2860:452)

EEET 453 Control Systems (4 Units)
Prerequisites: MCET 405 and [EEET 354 or ELEN 332]. Modeling and responses of closed-loop systems. Laplace transforms, root-locus analysis. Stability, compensation, digital control, optimal control. Digital computer in system simulation and design. System application using PLC analog programing and PID control. (Formerly 2860:453)

EEET 455 Senior Project (2 Units)
Prerequisites: Admission to the BS in Electrical Engineering Technology and EEET 354. Capstone experience consisting of Electrical or Electronic Project emphasizing creative technical analysis or design and presentation. (may be repeated for a total of six credits). (Formerly 2860:455)
Gen Ed: Capstone

EEET 490 Special Topics: Electronic Engineering Technology (1-4 Units)
Prerequisite: Permission of instructor. Directed study in a special field of interest chosen by the student in consultation with the instructor (may be repeated for a total of six credits). (Formerly 2860:490)

EEET 497 Senior Honors Project: Electronic Technology (1-3 Units)
Prerequisites: Senior standing in Honors Program, permission of department preceptor, and major in electronic technology. Independent research leading to completion of Senior Honors Thesis or other original work. (May be repeated for a total of six credits) (Formerly 2860:497)