ELECTRONIC ENGR TECHNOLOGY (2860)

2860:120. Circuit Fundamentals. (4 Credits)
Prerequisite: 2030:152 or permission. 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.

2860:121. Introduction to Electronics and Computers. (2 Credits)
Prerequisite: 2030:151 or placement. Corequisite: 2860:120. Supporting 2860:120 Circuit Fundamentals, this course introduces students to computers and software, technical communications, laboratory practices, and to the electronics industry.

2860:122. AC Circuits. (3 Credits)
Prerequisite: 2860:120. Corequisite: 2030:154. Sinusoidal voltage and current, reactance and impedance, methods of AC circuit analysis, AC power, transformers, AC meters and oscilloscopes, dependent and independent sources.

2860:123. Electronic Devices. (4 Credits)
Prerequisite: 2860:120. 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.

2860:210. Industrial Control Panel Fabrication. (2 Credits)
Prerequisite: 2030:152. This course will introduce students to shop fabricating skills involved in the creation of electrical control panels using mechanical and electrical fabricating tools.

2860:225. Applications of Electronic Devices. (4 Credits)
Prerequisite: 2860:123, 2030:154. Frequency response, filter concepts, electronic amplifiers, power amplifiers, multistage amplifiers, differential amplifiers, operational amplifiers, voltage regulators, feedback and oscillators, special devices, computer simulation analysis.

2860:237. Digital Circuits. (4 Credits)
Prerequisites: 2860:123, 2030:154. 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.

2860:238. Microprocessor Applications. (4 Credits)
Prerequisite: 2860:237. 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.

2860:242. Machinery & Controls. (3 Credits)

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

2860:260. Electronic Project. (2 Credits)
Prerequisites: final semester or permission and 2940:210. Design, construction, and testing of an electronic circuit of choice. Progress reports, oral, and a formal written report required. Discussion of electronic design, fabrication, and troubleshooting techniques.

2860:290. Special Topics: Electronic Engineering Technology. (1-4 Credits)
Prerequisite: Permission. 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).

2860:310. National Electrical Code and Electrical System Design. (3 Credits)
Prerequisite: 2860:122 or 2860:370. 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.

2860:350. Advanced Circuit Theory. (3 Credits)

2860:352. Microcontrollers. (4 Credits)
Prerequisite: 2860:238. Corequisite: 2860:350. 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.

2860:354. Advanced Circuits Applications. (3 Credits)

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

2860:370. Survey of Electronics I. (3 Credits)
Prerequisite: 2860:163. Fundamentals of DC and AC electrical circuits and rotating machinery. For non-Electronic Engineering Technology majors.

2860:371. Survey of Electronics II. (3 Credits)
Prerequisite: 2860:370. Survey of the most commonly used solid state circuit components including typical applications. Introduction into digital circuits and microprocessor applications. For non-Electronic Technology majors.

2860:400. Computer Simulations in Technology. (3 Credits)
Prerequisites: 2030:345 and 2860:354. 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.

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

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

2860:451. Industrial Electrical Systems. (3 Credits)
Prerequisite: 2860:354. 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.
2860:453. Control Systems. (4 Credits)

2860:455. Senior Project. (2 Credits)
Capstone experience consisting of Electrical or Electronic Project emphasizing creative technical analysis or design and presentation.

2860:490. Special Topics: Electronic Engineering Technology. (1-4 Credits)
Prerequisite: Permission. 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).

2860:497. Senior Honors Project: Electronic Technology. (1-3 Credits)
Prerequisites: Senior standing in Honors Program 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)