

Curriculum Map Template

Electrical Engineering Technology	Outcome	ELE-101 Device Data System Architectures	ELE110 Fundamentals of Electricity	ELE103 Analog and Digital Electronics	ELE105 Microprocessors & Microcontrollers	ELE113 Instrumentation and Process Control I	ELE158 Circuits, Schematics and Test Equipment	ELE-204 Electrical Machines	ELE206 Electronic Communications	ELE207 Advanced Electronics/ Electricity	ELE-208 Advanced Digital Circuit Design and Analysis
Program Outcome #1	Understanding of the Fundamentals of Electronics Technology	Specify and build network components related to industrial data networks.	Identify hazards of electrical circuits and be able to work safely. Explain the concepts of current flow, AC/DC circuits and Ohms law.	Understand solid-state devices, such as semiconductors, diodes, transistors and amplifiers.	Have a sound introduction to microcontroller hardware. Understand the fundamentals of hardware programming techniques in C and assembly language.	Identify the various types of instrumentation used in industry. Understand basic control techniques, specifically PID loop control. Understand control systems and terminology.	Recognize standard schematic symbols for common electrical and electronic components.	Provide an understanding of motor electrical drawings, nameplates and terminology. Explain the operation and installation of DC and AC motors.	Understand the purpose of signal modulation methods. Explain the difference between analog and digital communication systems.	Explain electronic signal conditioner circuits for sensor data acquisition.	Gain fundamental knowledge and understanding of reconfigurable architecture devices.
Program Outcome #2	Ability to conduct standard measurements, to analyze, and to interpret lab activities	Understand strengths and limitations of several industrial data protocols.	Recognize standard schematic symbols for common electrical and electronic components. Trouble-shoot basic electrical circuits using schematic diagrams.	Show a practical understanding of operational amplifiers applications. Calculate gain, input, and output impedances of linear amplifiers. Understand the theory and operation of digital devices.	Understand the theory and operation of motor control code and circuitry.	Understand and apply the basic principles of signal conditioning.	Understand measurement errors and calibration procedures.	Describe various motor control circuits and associated electronics devices.	Demonstrate understanding of concept difference between a wired and wireless communication system.	Distinguish between different DAQ techniques along with its corresponding software integration.	Describe typical design methods of digital circuits implemented as FPGA circuits.
Program Outcome #3	To design circuits, systems, components, and, or	Troubleshoot simple networking protocol problems	Explain the operation and application of common components	Understand timing diagrams and state sequences of digital circuits.	Be able to interface microcontroller peripherals with	Understand design principles of control systems.	Recognize and competently use common test equipment	Explain the operation of adjustable-speed drives	Characterize fundamental parameters of communication systems like s/n	Understand typical design constraints of a Data Acquisition	Utilize Hardware Description Languages (HDL) to

	engineering processes		such as AC and DC motors, relays, switches, power supplies, overload devices and lighting.		external sensors and motors		to evaluate test circuits. Understand the complete cycle of printed circuit board fabrication.	and PLC installations.	ratio, db gain/loss, and propagation errors.	System (software and hardware).	specify and synthesize complex circuits.
Program Outcome #4	Work effectively in teams solving technical problems.	Lab, Projects and Research Activities designed to foster environments of scholar achievement.									
Program Outcome #5	Ability to communicate effectively both orally and in writing. Use of appropriate technical literature.	Read with proficiency reference material and be able to express conclusions in oral presentations and written formats.									