SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: ESET-212   Department: ESET.AS

Course Title: Electronics for Technicians 2   Semester: Fall   Year: 2008

Course Objective	Competencies
1. Understand basic PIC concepts and control system terminology.	a. Identify PIC and embedded control systems. b. Be able to identify key components in a control system. c. Understand common terminology for embedded systems. d. Understand the capabilities and limitations of embedded control systems.
2 Understand basic PIC input/output types and the interface circuitry required for their use.	a. Understand how to properly bias an LED and use it as an output devices. b. Understand how to interface and use a 7-segment LED display. c. Understand how to interface and use an LCD display. d. Be able to use a speaker/buzzer as an output device. e. Understand the need for driver circuitry to increase output current/voltage/power. f. Be able to wire switches to provide proper input signal levels. g. Understand the need for signal conditioning circuitry. h. Understand the use of buffer circuits for I/O operations. i. Understand the use of "smart sensors". j. Understand basic Analog to Digital and Digital to Analog conversion circuits.

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Course Objective	Competencies
	k. Be able to read simple schematic diagrams and construct circuits based upon them.
	l. Be able to read diagnostic flowcharts and use them to aid in trouble-shooting.
3. Understand common sensors and actuators.	a. Know how to use a thermistor.
	b. Know how to use an IC based temperature sensor.
	c. Know how to use various light sensors.
	d. Know how to use pressure sensors/strain gauges.
	e. Know how to use fluid flow sensors
	f. Know how to use a fluid level sensor
	g. Know how to use a humidity sensor
	h. Understand linear motion sensors.
	i. Understand rotary motion sensors.
	j. Understand magnetic (hall effect) sensors.
	k. Understand the application of limit switches.
	l. Be able to use simple BJT devices to increase output current capability perform as switches.
	m. Build simple motor driver and control circuits.
	n. Understand the difference between open and closed loop control systems.
	o. Use a DVM to perform trouble-shooting tasks.

Course Objective	Competencies
4. Understand the role of the computer for a technician in an electronics related field.	a. Be able to use the computer to create simple reports. b. Be able to use the computer & internet as a research tool. c. Understand how a computer can be used as an input, communication, storage and display device for peripheral devices.