El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA   **Industrial Manufacturing**

COURSE RUBRIC AND NUMBER   **ELMT 2433**

COURSE TITLE   **Industrial Electronics**

COURSE CREDIT HOURS	4	3	:	3
	Credits	Lec		Lab

I.   Catalog Description

Devices, circuits, and systems primarily used in automated manufacturing and/or process control including computer controls and interfacing between mechanical, electrical, electronic, and computer equipment. Includes presentation of programming schemes. **Prerequisite: CETT 1407. (3:3). Lab fee.**

II.   Course Objectives

Upon satisfactory completion of this course, the student will be able to:

A. Safety
1. Identify types of PPE.
2. Perform safety and environmental assessments.

B. Op-Amps
1. Calculate voltage gain of an inverting operational amplifier.
2. Calculate voltage gain of a noninverting operational amplifier.

C. Process Control
1. Build an open and a closed loop process control system.

D. Ladder Diagrams
1. Explain the operation of a given ladder diagram.
2. Identify the symbols for a process control.
3. Explain the application of input and output devices.
4. Use timer circuits in industrial control applications.

E. Interfacing
1. Distinguish among various industrial interface circuits.
2. Interface computers with remote control circuitry.

F. Troubleshoot Feedback Systems
1. Troubleshoot thermal feedback systems.
2. Troubleshoot speed feedback systems.
3. Troubleshoot frequency feedback systems.

G. Green Production
1. Utilize advanced materials in production to reduce weight and increase life.
2. Reprocess materials by recycling and reuse throughout product life cycle to optimize waste reduction.

III. THECB Learning Outcomes (WECM)

1. Describe how electronic input and output circuits are used to control automated manufacturing and/or process systems.
2. Identify basic elements used for input, output, timing, and control.
3. Define how programmable electronic systems use input data to alter output responses.
4. Troubleshoot a representative system.
5. Demonstrate how system operation can be altered with software programming.

IV. Evaluation

Students must demonstrate the knowledge and skills stated in the objectives in order to complete the course. Exams, quizzes, and lab assignments will be determined by the instructor.

The final grade report will be based on the percentage of the total points earned.

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Students should be able to compute their grade average anytime during the course. Missed assignments and make-up tests will be given at the discretion of the instructor.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.