

# El Paso Community College

## Syllabus

### Part II

## Official Course Description

<b>SUBJECT AREA</b>	<u>Electrical Technology</u>
<b>COURSE RUBRIC AND NUMBER</b>	<u>ELTN 1343</u>
<b>COURSE TITLE</b>	<u>Electrical Troubleshooting</u>
<b>COURSE CREDIT HOURS</b>	<u>3            2    :    2</u> Credits        Lec    Lab

### I. Catalog Description

Maintenance, operation, troubleshooting, and repair of circuits of various residential, commercial, and industrial electrical systems. It is highly recommended that students complete ELPT 1341 before registering for this course. **(2:2). Lab fee.**

### II. Course Objectives

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

- A. Navigate the National Electrical Code (NEC).
- B. Install motor control circuits using ladder diagrams.
- C. Design and install a forward and reverse motor control circuit with electrical interlock.
- D. Troubleshoot control circuits with the use of a digital multimeter.
- E. Install and describe motor control circuits using ladder logic.
- F. Design Ladder diagrams.
- G. Safely identify and troubleshoot various electrical systems and equipment.
- H. Identify ground faults, open circuits, and grounded circuits.
- I. Determine proper electromechanical sequence of work.
- J. Identify faults and troubleshoot electrical control/system.
- K. Troubleshoot and trace receptacle and lighting circuits.
- L. Perform tests on installations.
- M. Review existing preventive maintenance plan.
- N. Interview user/operator about prior conditions.
- O. Develop troubleshooting skills for new technologies.
- P. Communicate with common trade hand signs.

### III. THECB Learning Outcomes (WECM)

1. Use multimeters to perform tests on electrical equipment.
2. Discuss various types of circuits and electrical systems.
3. Demonstrate the proper way to test transformers and motors.
4. Identify a short circuit, open circuit, and a closed circuit.
5. Troubleshoot electric motors and control circuits.

#### **IV. Evaluation**

The students must demonstrate the knowledge and skills stated in the objective in order to complete the course. Letter grades will be arranged as follows:

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

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.