

# 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>ELPT 1341</u>								
<b>COURSE TITLE</b>	<u>Motor Control</u>								
<b>COURSE CREDIT HOURS</b>	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border-top: 1px solid black; padding: 2px 10px;"><b>3</b></td> <td style="border-top: 1px solid black; padding: 2px 10px;"><b>2</b></td> <td style="border-top: 1px solid black; padding: 2px 10px;"><b>:</b></td> <td style="border-top: 1px solid black; padding: 2px 10px;"><b>2</b></td> </tr> <tr> <td style="padding: 2px 10px;">Credits</td> <td style="padding: 2px 10px;">Lec</td> <td style="padding: 2px 10px;"></td> <td style="padding: 2px 10px;">Lab</td> </tr> </table>	<b>3</b>	<b>2</b>	<b>:</b>	<b>2</b>	Credits	Lec		Lab
<b>3</b>	<b>2</b>	<b>:</b>	<b>2</b>						
Credits	Lec		Lab						

### I. Catalog Description

Operating principles of solid-state and conventional controls along with their practical applications. Includes braking, jogging, plugging, safety interlocks, wiring, and schematic diagram interpretations. Introduces starting and stopping circuits and variable frequency drives. **(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. Size Overcurrent Protection devices for motors using NEC tables.
- C. Calculate the size of conductors for motors using NEC tables.
- D. Calculate the motor full load current using NEC tables.
- E. Calculate motor overloads using the NEC.
- F. Apply grounding principles to motors.
- G. Diagram a simple start/stop circuit.
- H. Create a simple circuit using pushbuttons, relays and lights.
- I. Design a relay holding circuit.
- J. Build a motor forward-reverse circuit from a schematic.
- K. Build a motor control circuit incorporating timers.
- L. Perform tests on installations using multimeter.
- M. Calculate power factor.
- N. Draw motor control circuits from a ladder logic diagram.

### III. THECB Learning Outcomes (WECM)

- 1. Identify practical applications of jogging and plugging.
- 2. Describe the types of motor braking and their operating principles.
- 3. Explain different starting methods for large motors.
- 4. Demonstrate proper troubleshooting methods on circuits using wiring and schematic diagrams.

#### **IV. Evaluation**

The knowledge and skills stated in the objectives must be demonstrated by the students in the form of test and lab assignments in order to complete the course.

Grade Scale:

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

#### **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.