

# El Paso Community College

## Syllabus

### Part II

## Official Course Description

SUBJECT AREA	<u>Electrical Technology</u>		
COURSE RUBRIC AND NUMBER	<u>ELPT 1320</u>		
COURSE TITLE	<u>Fundamentals of Electricity II</u>		
COURSE CREDIT HOURS	<u>3</u>	<u>2</u>	<u>: 2</u>
	Credits	Lec	Lab

### I. Catalog Description

Introduces alternating current (AC). Includes Ohm's Law. Includes topics on AC voltage, frequency, mechanical and electrical degrees, waveforms, resistors, capacitors, and inductors. Includes topics on electrical symbols, ladder diagrams, and relay. **Prerequisite:** ELPT 1319. (2:2). Lab fee.

### II. Course Objectives

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

- A. Follow safety and OSHA practices.
- B. Identify NEMA.
- C. Describe AC voltage.
- D. Calculate volts, currents, and resistance using Ohm's Law.
- E. Design an electrical schematic using standard symbols.
- F. Calculate the correct wire size given the voltage and current used.
- G. Calculate power factor given resistance, inductance, and capacity and voltage drop.
- H. Draw motor control circuits from a ladder logic diagram.
- I. Demonstrate the correct use, handling, and storage of an electrical meter (V-O-M) and associated equipment.
- J. Compare electrical equipment for equivalence.
- K. Maintain generators.
- L. Identify new green technologies for energy savings.
- M. Identify NEC Requirements.
- N. Perform electrical installations.
- O. Size and install boxes, e.g., junction, device, and pull boxes.

### III. THECB Learning Outcomes (WECM)

1. Explain AC power waveform generation.
2. Define capacitance and inductance.
3. Determine the values of AC voltage, current, and impedance for circuits containing resistors, capacitors, and inductors.
4. Explain and calculate power factor in circuits.
5. Utilize electrical measuring instruments.

#### **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.