

El Paso Community College

Syllabus

Part II

Official Course Description

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|---------------------------------|---|---|-----|---|---|---------|-----|--|-----|
| SUBJECT AREA | <u>Renewable Energy</u> | | | | | | | | |
| COURSE RUBRIC AND NUMBER | <u>CETT 1409</u> | | | | | | | | |
| COURSE TITLE | <u>DC/AC Circuits</u> | | | | | | | | |
| CONTACT HOURS | <table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black; padding: 0 10px;">4</td> <td style="padding: 0 10px;">3</td> <td style="padding: 0 10px;">:</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black; padding: 0 10px;">2</td> </tr> <tr> <td style="text-align: center; padding: 0 10px;">Credits</td> <td style="text-align: center; padding: 0 10px;">Lec</td> <td></td> <td style="text-align: center; padding: 0 10px;">Lab</td> </tr> </table> | 4 | 3 | : | 2 | Credits | Lec | | Lab |
| 4 | 3 | : | 2 | | | | | | |
| Credits | Lec | | Lab | | | | | | |

I. Catalog Description

Provides fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchhoff's laws, networks, transformers, resonance, phasors, capacitive and inductive and circuit analysis techniques. **(3:2). Lab fee.**

NOTE: Students are responsible for purchasing their own supplies and tools.

II. Course Objective

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

- A. Explain alternating current (AC).
- B. Explain capacitance and capacitors.
- C. Explain capacitive circuits, testing, and applications.
- D. Explain electromagnetism and electromagnetic induction.
- E. Explain inductance and inductors.
- F. Explain the operation of a transformer.
- G. Recognize the types of resistive, inductive, and capacitive circuits.
- H. Explain direct current (DC)
- I. Explain series-parallel DC circuits
- J. Troubleshoot electrical systems.

III. THECB Learning Outcomes (WECM)

1. Construct and analyze DC and AC circuits from simple to complex.
2. Perform test measurements.
3. Utilize a multimeter and oscilloscope to differentiate between two AC signals with respect to voltage, current, and power.

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:

Grade Scale:

| | |
|--------|---|
| 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.

IV. 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).

V. 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.