

Common Course Numbering System

Your current Institution is CCCS

Searching Current Courses For Spring 2015

Course: ELT 112

Title: Advanced DC-AC

Long Title: Advanced DC-AC

Course Description: Continues to build on ELT 106 and covers advanced concepts of DC-AC circuits. Includes an expanded treatment of power supplies, dual-supply rectifier circuits, and Zener diode voltage regulators. Emphasizes troubleshooting.

Min Credit: 3

Max Credit:

Origin Notes:

ACC

STANDARD COMPETENCIES:

- I. Explain the construction and characteristics of various cells.
- II. Design loaded voltage dividers
- III. Explain the relationship between input impedance of meters and circuit loading
- IV. Determine the transient response of RL circuits.
- V. Calculate the transient response of RC circuits.
- VI. Calculate reactance.
- VII. Calculate the total capacitance and reactance of capacitors in series and parallel.
- VIII. Calculate the total inductance and reactance of inductors in series and parallel.
- IX. Explain how voltage and current behave in AC resistive and reactive circuits.
- X Describe the operation of a transformer.
- XI. Calculate turns ratio, voltage and current of transformers.
- XII. Use semiconductor physics to describe the P-N junction.
- XIII. Explain the forward and reverse characteristics of a diode.
- XIV. Explain the operation of half-wave and full-wave rectifier circuits.
- XV. Determine diode specifications from data sheets.
- XVI. Explain the operation of dual-supply rectifier circuits.
- XVII. Test dual-supply rectifiers.
- XVIII. Troubleshoot power supplies.
- XIX. Describe the operation of Zener diodes.

- XX Explain the operation of Zener diode voltage regulator circuits.
- XXI. Test Zener diode voltage regulator circuits.
- XXII. Calculate voltage, current and impedance of RL series and parallel circuits.
- XXIII. Calculate voltage, current and impedance of RC series and parallel circuits.
- XXIV. Construct and test circuits with resistors, capacitors, inductors, transformers and diodes.
- XXV. Convert between ratio and DB gain.

TOPICAL OUTLINE:

- I. Constant Voltage Source and Cells
- II. Voltage Dividers
- III. Circuit Loading
- IV. RL Transient Response
- V. RC Transient Response
- VI. Transformers
- VII. Semiconductor Physics and the PN Junction
- VIII. Diode Specifications and Circuits
- IX. Single and Dual-Supply Rectifier Circuits
- X Troubleshooting Power Supplies
- XI. Zener Diodes and Regulator Circuits
- XII. RL and RC Series Circuits
- XIII. RL and RC Parallel Circuits
- XIV. Decibels

Course Offered At:

Front Range Community College FRCC
Pueblo Community College PCC
Pikes Peak Community College PPCC

RELEASE: 8.5.3

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