
COURSE SYLLABUS

DIVISION: Workforce Services

REVISED: January 2015

CURRICULA IN WHICH COURSE IS TAUGHT: Electrical-Electronics Engineering Technology

COURSE NUMBER AND TITLE: ELE 124, Electrical Applications II

CREDIT HOURS: 2

HOURS/WEEK LECTURE: 1

HOURS/WEEK LAB: 2

LECTURE/LAB COMBINATION: 3

I. CATALOG DESCRIPTION:

The course provides laboratory and shop assignments/jobs as applied to fundamental principles of electricity with an emphasis on measurements and evaluation of electrical components, devices, and circuits. The course may require preparation of a lab report as an out-of-class activity.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:

The course allows the student to explore the concepts related to AC and DC circuits using fundamental circuits, which represent more complex circuits, machines and devices

III. REQUIRED BACKGROUND/PREREQUISITES:

ELE 113, ELE 123 and calculations I
Co-requisite - Calculations II or instructor's permission

IV. COURSE CONTENT:

1. Review of magnetism and electromagnetism
2. Alternating current and voltage, wave shapes, measurements
3. Power in AC circuits
4. Capacitance, RC circuits and devices in AC circuits
5. Inductance, LC circuits and devices in AC circuits
6. Transformers and transformer concepts
7. Series and parallel RCL concepts
8. Application of measuring devices and instruments
9. Impedance Calculations/Service-Parallel
10. Resonance, BW and circuit Q
11. Introduction to AC motors

V.LEARNER OUTCOMES**VII. EVALUATION**

Demonstrate knowledge of magnetism and electromagnetism	Lab exercises Written test and quizzes Oral and written reports Homework and projects
Demonstrate the ability to measure AC voltage with an oscilloscope and analyze that measurement in various circuits.	
Demonstrate a knowledge of power in AC circuits	
Demonstrate the knowledge of Capacitance and RC circuits and devices.	
Demonstrate the knowledge of inductance and LC circuits and devices	
Demonstrate the knowledge of Transformers and transformer concepts	
Apply the knowledge of measuring devices and instruments in the lab	

VII. The course supports the following general education goals/objectives:DCC Educational Objectives

- Communication
- Critical Thinking
- Information Literacy
- Quantitative Reasoning