

NVCC COLLEGE-WIDE COURSE CONTENT SUMMARY

ETR 114 - AC FUNDAMENTALS (4 CR.)

COURSE DESCRIPTION

A study of AC circuits. Includes AC Power, resonant circuits transformers and AC network theorems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GENERAL COURSE PURPOSE

ETR 114 is designed as a one semester, lecture and laboratory course which develops competency in AC network analysis.

ENTRY LEVEL COMPETENCIES

Prerequisite ETR 113 - "D.C. and A.C. Fundamentals I".

COURSE OBJECTIVES

As a result of the learning experiences provided in this course, the student should be able to:

- A. know the fundamental relationships between current, voltage, and impedance in AC circuits
- B. learn the techniques and theorems of network analysis as applied to AC circuits
- C. develop an understanding of transformer action, coupled circuits, and harmonic analysis

MAJOR TOPICS TO BE INCLUDED

LECTURE

- A. Alternation current
- B. Reactance/Impedance
- C. Series & parallel impedance
- D. Power in AC circuits
- E. Network analysis
- F. Transformers
- G. Harmonics/Resonance

LABORATORY

- A. Oscilloscope familiarization
- B. Reactance
- C. Impedance of a series RL circuit
- D. Voltage relationships in a RC circuits
- E. Impedance of parallel RL & RC circuits
- F. Passive filters
- G. Transformer