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