ELEI 107
A.C. CIRCUIT ANALYSIS
4 Semester Hours

The Community College of Baltimore County

Description

A.C. Circuit Analysis
Discusses the theories and applications of A.C. electricity; investigates alternating current generation, measurement, periodic waveforms, reactance, phasor quantities, impedance, power and power factor, network analysis, resonance, transformer theory and operation, and poly-phase systems. Three hours of lecture and two hours of lab a week one semester.
Prerequisite: ELEI 106- D.C. Circuit Analysis, MATH 108- Technical Mathematics, or consent of instructor

Overall Course Objectives
Upon completion of this course the student will be able to:
Demonstrate in written and oral presentations a basic understanding of complex electrical circuitry, magnetic and A.C. electrical interaction and their applications. Demonstrate a working knowledge through a laboratory setting of A.C. electrical theory as it applies to a work situation.

Major Topics
Alternating Voltage and Current, Inductance, Inductive Reactance, Inductive Circuits, Capacitance, Capacitor Reactance, Capacitor Circuits, *RC* and *L/R* Time Constants, Alternating Current Circuits, Complex Numbers for AC Circuits, Resonance, Filters, Electronic Devices, Electronic Circuits.

Course Requirements
The Instructor will administer Test (60%), Laboratory projects (30%), and assignments (10%).

Other Course Information
Additional Information about this course or other Industrial Electricity/Electronic courses can be obtained by contacting the IEE/Telecommunications Program Director.