EE 304 - Circuit Analysis II Laboratory

1997-1999 Catalog Data

EE 304-1. Circuit Analysis II Laboratory. Applications of AC concepts, computer aided circuit analysis and design, two-port networks and power theory. Prerequisites: EE 301 and EE 302; Prerequisite or Corequisite: EE 303.

Textbook

Nilsson, *Electric Circuits*, 5th edition, Addison-Wesley, 1995; a laboratory manual is also provided.

Coordinator

A. K. Shaw, Associate Professor of Electrical Engineering

Goals

This second circuits laboratory is designed to provide each student with application experience for the theories and design concepts taught in the associated "Circuit Analysis II" lecture course, EE 303 (3).

Prerequisites by Topics

Each student should know

- basic electrical elements and laws
- the common circuit analysis techniques
- concepts of energy storage elements
- how to analyze first and second order circuits
- sinusoidal steady state analysis approaches

Learning Objectives

For each student to be able to complete the laboratory project in

- bridge circuits, AC networks
- steady-state behavior, phasors, Kirchhoff's law in the phase domain and transfer function
- AC steady-state power, power factor improvement
- circuit design for maximum power transfer
- two-port networks and transformers
- frequency response, analysis and design of lowpass, highpass and bandpass filters

Computer Usage

Each student uses B^2 Spice software in analyzing circuits.

Estimated ABET Category Content

Engineering Science .5 credit hour or 50%
Engineering Design .5 credit hour or 50%

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