EE 432 - Electronic Circuits Laboratory

1997-1999 Catalog Data

EE **432-1. Electronic Circuits Laboratory**. Applications of diodes and amplifiers in analog circuits, design of bias circuits; single and multiple stage amplifier circuits; feedback amplifiers; circuits to meet frequency response specifications; output stages. Prerequisite: EE 331 and EE 332, Corequisite: EE 431.

Textbook

Sedra & Smith, *Microelectronic Circuits*, 4th ed., Oxford University Press, 1997

Coordinator

M. K. Kazimierczuk, Professor of Electrical Engineering

Goals

Provide each student with an opportunity to apply electronic circuit theory to the design of selected analog circuits, amplifiers, and output stages.

Topical Prerequisites

Each student should:

- be familiar with fundamental concepts of amplifiers
- be able to analyze amplifiers for the dc component
- be familiar with low-frequency small-signal models of MOSFETs and BJTs
- be able to perform small-signal analysis MOSFET and BJT amplifiers for mid-frequencies
- understand basic characteristics of amplifiers with different configurations
- understand fundamental differences between MOSFET and BJT amplifiers
- be able to design amplifiers for mid-frequencies
- understand basic techniques of evaluating the dynamic performance of linear circuits
- be familiar with s-domain analysis
- be familiar with the concept of the transfer function
- be familiar with Bode plots of circuits with simple poles and zeros
- be familiar with transient response of first-order circuits

Learning Objectives

For each student to:

- be able to test dynamic performance of linear circuits
- be able to design amplifiers to meet low-frequency specifications
- be able to design amplifiers to meet high-frequency specifications
- be able to design power amplifiers
- be able to design amplifiers with negative feedback

Laboratory	This one credit laboratory course complements the three-credit Electronic Circuits lecture course, EE 431.
Computer Usage	None.
Estimated ABET Category Content	Engineering Design 1.0 credit hours or 100%

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