

EE 359 Electronic Circuits

Catalog Description:

EE 359 Electronic Circuits

Design of differential amplifiers using BJTs or FETs, design of output stages (class B and class AB), output and input impedance of differential amplifiers, frequency response. Feedback amplifiers, Nyquist criteria, Nyquist plots and root loci, bode plots, gain/phase margins and application in compensation for operational amplifiers, oscillators, tuned amplifiers and filters (passive and active). A suitable circuit analysis package is used for solving many of the problems

Text Book:

Sedra & Smith "Microelectronic Circuits, 6th ed," Oxford University Press, ISBN 0-19-532303-3

Instructor:

Bruce McNair, Distinguished Service Professor of ECE.

Goals:

The goal of this course is to give students an understanding of the issues involved in designing electronic systems and introduction to the tools and techniques used to address these issues.

Prerequisites by Topic:

- Linear Systems
- Probability and Random Variables
- Circuits and Systems

Grading Policy:

Homework 20%
Quizzes 70%
Project 10%
Participation in class discussions +/-10%

All assignments provide opportunities for extra credit work. Work that goes significantly beyond what is asked will be graded accordingly.

All students are expected to comply with the Stevens Honor Code on homework, exams and projects in this course, which are individual assignments. Unpledged assignments will not be graded, in accordance with the Honor System Constitution.

Course Components:

- Engineering - 100%

Course Web Site:

<http://koala.stevens-tech.edu/~bmcnair/EE359-XXX> where XXX is the current semester, e.g., F08

Schedule of Topics

Week 1:

- Introduction
- Op-amps

Week 2:

- Diodes

Week 3-4:

- Bipolar Junction Transistors

Week 5-6:

- MOSFETs

Week 7-8:

- Differential amplifiers
- Multistage amplifiers

Week 9-10:

- Feedback

Week 11-12:

- Filters
- Tuned amplifiers

Week 13-14:

- Output stages
- Power amplifiers

Last revised: July 6, 2011