EE 105 - MICROELECTRONIC DEVICES AND CIRCUITS (4 UNITS)

(Taken from the UC Berkeley Course Guide (http://guide.berkeley.edu))

COURSE OVERVIEW

SUMMARY

This course covers the fundamental circuit and device concepts needed to understand analog integrated circuits. After an overview of the basic properties of semiconductors, the p-n junction and MOS capacitors are described and the MOSFET is modeled as a large-signal device. Two port small-signal amplifiers and their realization using single stage and multistage CMOS building blocks are discussed. Sinusoidal steady-state signals are introduced and the techniques of phasor analysis are developed, including impedance and the magnitude and phase response of linear circuits. The frequency responses of single and multi-stage amplifiers are analyzed. Differential amplifiers are introduced.

PREREQUISITES

EE 16A (ee16a.html) and EE 16B (ee16b.html)

WORKLOAD

TIME COMMITMENT

3 hours of lecture, 1 hour of discussion, and 3 hours of laboratory per week.

COLLEGE OF CHEMISTRY PEER SERVICES

Made by Angela Lee, c/o 2019

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