ECE 422/522 Analog Integrated Circuit Design II Syllabus January 2013

Draft Syllabus

Course Description

Analysis and design of BJT and MOS operational amplifiers, current-feedback amplifiers, wideband amplifiers and comparators. Frequency response of amplifiers. Feedback techniques, analysis and design. Stability and compensation of amplifiers, high slew-rate topologies, Noise in IC circuits. Fully differential circuits, analog multipliers and modulators. CAD tools for circuit design and testing. Prerequisite: ECE 431/521

Schedule--Winter Quarter 2013
Monday and Wednesday 6:40 - 8:30 on campus

Course Outcomes

Fluency with the use of diode, BJT and MOS structures in basic circuits
Understanding of device models
Catalog of familiar back-of-the-envelope circuit topologies for amplifiers
Understand the language and basic operation of multipliers and modulators
Quantify the noise contributions of various structures on an IC
Familiarity with the use of a circuit simulator to support analog IC design
Fluency with frequency response
Fluency with feedback techniques

Supplementary Textbook: any old edition of Gray and Meyer

Course structure: weekly study guides with homework assignments and prep material for upcoming exercises.

Grading: weekly ungraded and graded exercises and in-class project exercises.

Two In-Class exams--midterm and final