UNIVERSITY OF CALIFORNIA, DAVIS
Department of Electrical and Computer Engineering

EEC215   Spring 2017

Circuits for Digital Communications

Course Description:

This is a course on MOS integrated circuit design for digital communications. The focus will be on the design of circuits for receivers and transmitters in digital communication systems. Analog, digital, and mixed-signal circuits will be compared and contrasted for implementing functions such as automatic-gain control (AGC), adaptive equalization, sequence detection, and timing recovery. Some necessary background on digital communications will be presented.

There will be homework, roughly one assignment every other week. The programs MATLAB and HSPICE will be used for homework.

Instructor: Paul Hurst

Lecture: Tu Th   noon-1:30pm in 1342 Storer

Office hours: TBA in 2031 Kemper Hall

Prerequisites: EEC 210 and 150B (or 201) required; 165 or 265 *recommended*.

Website: www.ece.ucdavis.edu/~hurst/EEC215

Text: Digital Baseband Transmission and Recording, J. Bergmans, Kluwer.
                     And selected papers.

References: Digital Communication, Lee & Messerschmitt, Kluwer.
                     Digital Communications, Proakis, McGraw-Hill.
                     Discrete-Time Signal Processing, Oppenheim and Schafer, Prentice-Hall.
                     Analysis and Design of Analog Integrated Circuits, Gray, Hurst, Lewis and
                     Meyer, Wiley.
                     Analog Integrated Circuits Design, Johns and Martin, Wiley.
                     Principles of Data Conversion System Design, Razavi; IEEE Press.
                     Theory and Practice of Modem Design, Bingham; Wiley.

Grading: Homework 50%, Exam 40%, Report on a paper (likely an oral report) 10%.