EE430 Communications Systems

Instructor: Al Davis
Telephone: 762-7998
E-mail: adavis@kettering.edu
Time and place: MWRF, 9:05-10:05am

Textbook:
Digital and Analog Communication Systems, (sixth edition) by Leon Couch

Office hours:
I do not have explicit office hours. I have an open door policy. If I am with someone else, please let me know of your presence. Don't just silently wait outside the door! Monday or Thursday 1:30-3:30 is usually a good time.

Catalog description:
The study of methods used in electronic communication systems. Topics include: Fourier Transforms, analysis of distortion over a communication channel, autocorrelation of deterministic and random signals, energy and power spectral density, amplitude modulation, frequency modulation, phase modulation, digital line coding and modulation, communication circuitry. Prerequisite: EE-230 (Signals and Systems), EE-310 (Circuits-2), EE-320 (Electronics-1), MATH-408 (Probability and Statistics)

Course outline:
We will attempt to cover chapters 1-5 of the Couch text, plus some extra on communication circuits. We will not cover the full depth of the text, but you are encouraged to read it on your own. There will be significant coverage of communication circuits that are not in the text.

Chapter 1, Introduction (1 day)
Chapter 2, Math of communications (Fourier analysis, correlation, etc.) (4 weeks)
Chapter 3, Baseband digital signals (1 week)
Chapter 4, Bandpass principles, intro to AM, FM, etc. (2 weeks)
Chapter 5, AM, FM, and digital systems, in more detail (3 weeks)

Homework:
Homework will be assigned on a regular basis. Some homework will be collected, and counts as one grade unit.

Labs:
There will be about 5 lab experiments. Each counts as one grade unit.

Tests and quizzes:
Quizzes, about 15 minutes long, will be given every Monday, except the first.

There will also be unannounced quizzes. They may be given at any time, and should be considered to be a way to raise your grade. They count only by replacing the score on another quiz. The intent is to count 8 quizzes, as 8 grade units.

There will be a comprehensive final during exam week. It counts as 4 grade units.

There will be no full-hour tests.

Grades:

Your grade is based on the sum of 15 units, where each unit is a quiz, a lab report, or a design or analysis exercise. Since more than 15 units will be offered, the best 15 will count.

Student information survey

Name _____

Phone (day) _____ (evening) _____

Year and major _____ Preferred email address _____

Do you have your own computer? _____ How many? _____ Type? (Mac,PC,Linux, other) _____

Is this a required course for you? _____
If not, why are you taking it? _____ If yes, how do you feel about having to take it?

What computers, operating systems have you used? (PC/DOS, Mac, VMS, Unix, ...)
What is your level of skill?

How comfortable are you with (please rate 0 -10, 0 = what's that?, 10 know it well)

Programming ___		Laplace transforms ___		Devices ___	
Octave ___		Z-transforms ___		Analog filters ___	
Matlab ___		Fourier transforms ___		Analog circuits ___	
Unix ___		Frequency response ___		Digital circuits ___	
Transistors ___		Op-amps ___		Nodal analysis ___	
AC analysis ___		Mesh analysis ___		Boolean algebra ___	
Statistics ___		Spice ___		Diodes ___	
Class-A amplifiers ___		Class-B amplifiers ___		Class-C amplifiers ___	
Superheterodyne receivers ___		FM stereo ___		Television theory ___	

What other EE and computer courses have you taken, beyond the prerequisites?
(Indicate title, approximate date, and location)

What do you expect to learn from this class?

Anything else you want to tell me?