EE430 Communications Systems

Instructor: Al Davis
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Time and place: MWRF, 10:15-11:15am, AB 4507

Textbook:
Modern Digital and Analog Communication Systems, (third edition) by
B. P. Lathi

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, Wednesday, Friday 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 1-9 of the Lathi 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.

1. Introduction (1 day)
2. Introduction to signals
3. Analysis and transmission of signals
4. Amplitude (Linear) modulation (AM, SSB) (2 weeks)
5. Angle (Exponential) modulation (FM)
6. Sampling and pulse code modulation
7. Principles of digital data transmission
8. Emerging digital communications technologies
9. Recent developments, spread spectrum, etc.

Homework:

Homework will be assigned on a regular basis. There are three types .. exercises, labs, and design exercises. For grading purposes, they are all counted together, and make up 20% of your grade. It is expected and encouraged that you will work together. If you work as a group, hand in a single copy of the work for the entire group with all names on it. Not all homework will be collected.

Tests and quizzes:

There will be several tests and quizzes through the term. They will all be announced. They may be either full hour tests or half-hour tests, depending on the material. There may also be mixed take-home/in-class tests. Tests will emphasize design and problem solving.

Grades:

Grades are based on a weighted sum of tests, homework, and a comprehensive final. Homework (including labs and projects) counts 20% of the total grade. Tests (including the final) count the other 80%

Student information survey

Name _____ Course _____

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?

Lab Survey —

Fill in what you have on your schedule:

	M	T	W	T	F
9:05					
10:05					
10:15					
11:15					
11:20					
12:20					