ECE 508 Communication Lab, Winter 2008

Department of Electrical and Computer Engineering
The Ohio State University

Instructor:

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- Office Hours : By appointment

Course Information:

- Description: Laboratory in the areas of communication theory and signal processing.
- Prereq. or concur.: ECE 501 Communication Theory
- Prerequisites By Topic: Fourier series, Fourier transform, linear systems and signals, probability, random variables.
- Objectives:
    - Student teams implement amplitude modulation, frequency modulation, pulse modulation, sampling and quantization; they determine design parameters to achieve desired signal properties.
    - Student teams compare and assess the performance of analog demodulators in the presence of noise; they compare the theoretical performance to experimental performance.
    - Students improve written communication skills through laboratory and project reports.
    - Students use a commercially available software package (LabVIEW) for computer aided analysis and design.
- Course Materials:
    - ECE508 Course Packet from UniPrint (formerly Cop-ez) & Handouts during lab sessions.
    - References (Supplemental reading):
        1. Communication System Engineering, Proakis and Salehi, Prentice-Hall, 1994.
        2. Contemporary Communication Systems Using Matlab, Proakis and Salehi, PWS Publishing, 1998.
        3. Modern Digital and Analog Communication Systems, B.P. Lathi, Oxford Press, 1989.
        4. Introduction to Communication Systems, F. Stremler, Addison-Wesley, 1990.
- I am teaching one section of ECE 508 for Winter 2008 Quarter:

          ○ Tuesday 12:30-16:18, DL 569

Grading:

- Lab Reports and class attendences (60%)
- Midterm Project (20%)
- Final Exam (20%)
- Bonus Quiz: Each bonus quiz is worth 2 points (2% of the final points) and will be added to your final cumulative points.

Course Policy:

- Attendence is required for each lab in order to receive a grade from that lab session.
- Lab reports are due at the beginning of the next lab session.
- Any report received after the beginning of the lab will be considered late and subject to the late penalties. No late material will be accepted unless prior arrangements (at least 24 hours in advance) have been made.
- Graded reports from the previous week will be returned at the beginning of the next laboratory session, one week after you turned them in.
- Any written material handed in to me must be your own, and must represent your understanding of the material. Failure to comply with this rule will be considered as a violation of the University and ECE Honor System rules and necessary action will be taken. However, discussion of the course material is encouraged.

Lectures:

Week	Topic
2	Lab 0: Introduction to LabView
3	Lab 1: Spectral Representation of Signal
4	Lab 2: Spectra of Linear Systems
5	Lab 3: Amplitude Modulation [Lab 4: Noise in AM (midterm project) is assigned]
6	Lab 5: Pulse Modulation, Sampling, and Quantization
7	Lab 6: Detection Error Probability of Digital Communication Systems [Lab 4: Noise in AM (midterm project) is due]

8	Lab 7: Phase-Locked Loops
9	Lab 8: Frequency Modulation
10	Final Exam

Grades:

- (01/07) You can check Carmen to see your grades.

Announcements:

- (01/15) Course Materials (Lab handouts, Quizzes and their solutions, etc.) will be uploaded to Carmen. Please also check Carmen for further announcements.
- (01/08) Week 2 Materials:
    - Lab 0
- (01/08) Familiarize yourself with the LabVIEW:
    - Read & learn first 3 chapters of "Getting Started with LabVIEW" document. Link to this file can be found from the LabVIEW's Getting Started window (initial welcome screen of the LabVIEW).
    - Some examples:Acquiring a Signal, Analysis, Reduce Samples, Save Data, Warning Light.
- (01/07) Syllabus is uploaded: ECE 508 - Winter 2008 Tuesday Afternoon Section Syllabus

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