

XXX-xxxx Communication Systems Lab

Fall 2012

Faculty : Dr. Stavros Georgakopoulos
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Office Hours :
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Class Time :
Classroom : Web-accessible lab (no class needed)

Prerequisite : EEL 3135 Signal and Systems

Corequisite :

Text Book

Lab-manuals (downloadable from the course's website)

Description

This is a web-accessible hardware laboratory on analog and digital communication systems. Students will perform all the experiments remotely through the Internet. Lab reports will be submitted for every remote lab.

Reference

1. "MathCAD" and "MATLAB".
2. Digital and Analog Communication Systems
7th Edition,
By Couch II, L.W
Prentice Hall, 2007.
3. Fundamentals of Communication Systems
By Proakis, J. G. and Salehi, M
Prentice Hall, 2005

Course Objectives

To gain an understanding of technical concepts of analog and digital communications systems.

Absence

Students are responsible for all lab reports.

Grading Policy

Late lab reports will not be graded. All lab reports submitted must be neat and detailed to obtain partial credit. Points will be taken off for sloppy work. There will be two exams throughout the semester. The course grade will be decided using the following weighing of the data:

Lab Reports	100%
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Tentative Grading Scale

Total Score	Letter Grade	Total Score	Letter Grade
100 - 95	A	73-75	C
90-94	A-	70-72	C-
86-89	B+	66-69	D+
83-85	B	63-65	D
80-82	B-	60-62	D-
76-79	C+	0-59	F

Policies

1. Any evidence of cheating and plagiarism will result at least a failing grade for the course. Any communication during exam time will not be tolerated and will result in a zero grade for the exam for each person being involved.
2. You are fully responsible for all materials covered in class.
3. Students are expected to read all materials and complete all assignments.
4. Late lab reports will not be accepted and will not be graded.

Topics Covered:

1. Analog modulation techniques for communications systems
2. Digital modulation techniques for communications systems
3. Analog and digital communication systems

Lab Experiments

1. Amplitude Modulation
2. Envelope Detection (Amplitude Demodulation)
3. DSBSC modulation and Demodulation
4. SSB Modulation
5. SSB Demodulation
6. FM modulation
7. FM demodulation using PLL
8. QAM generation
9. QAM detection
10. ASK modulation and demodulation
11. BPSK modulation and demodulation
12. QPSK modulation
13. QPSK demodulation
14. FSK generation
15. Sampling

Learning Outcomes:

1. Understand the fundamental analog and digital modulation schemes.
2. Understand differences between analog and digital communication systems.

Contribution of course to meeting the professional component:

Engineering Science

Relationship of course to program outcomes:

In this course the student will have to show

- (a) an ability to apply knowledge of mathematics, science and engineering
- (b) an ability to identify, formulate, and solve engineering problems

Department Regulations Concerning Incomplete Grades

A student that applies for an incomplete grade for the semester should comply with **all** of the following:

1. Must be unable to complete the course through documented circumstances beyond his/her control.
2. Must be passing the course prior to that part of the course that is not completed.
3. Must contact the instructor or the secretary immediately before or during the part missed, so the instructor will be aware of the circumstances causing the incomplete.
4. Must make up the incomplete work through the instructor of the course and should not be allowed to sit through another entire course to make up the incomplete.
5. Must make proper arrangements with the instructor to complete the course. These arrangements must be

made in writing. A copy will be placed in the student's file: Do **not** assume that you automatically have two semesters to complete your work!

Academic Misconduct

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.