EEL 6535
Digital Communications
Spring 2008

INSTRUCTOR
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CLASS WEB SITE
WebCT Vista

CLASS MEETINGS
T 8-9, R 9, NEB 201

OFFICE HOURS
T 10, R 10, NEB 455

PREREQUISITES
Probability and random processes (EEL 5544 or equivalent)

REQUIRED TEXTBOOK

REFERENCE BOOKS
COURSE OBJECTIVES

This course covers topics related to the reliable transmission of digital data streams between two points. After completing this course, students should understand the fundamental principles and essential components of modern digital communications; understand transmitter and receiver designs at the system level and be able to apply related knowledge to such designs for practical communication links; be able to quantify and evaluate the performance of communication systems, as well as delineate and optimize tradeoffs under various channel conditions.

COURSE TOPICS

1. Introduction to digital communications
2. Review of probability and stochastic processes
3. Characterization of communication signals and systems
4. Modulation schemes, optimum receiver and performance analysis for AWGN channel
5. Concepts of information theory and channel coding
6. Carrier and symbol synchronization
7. Transmitter and receiver design for band-limited channel
8. Inter-symbol interference (ISI) channel equalization
9. Digital communication through wireless channel
10. Recent developments in digital communications

GRADING

• 20% Homework, 35% Exam I, 45% Exam II
• No extra work will be accepted to improve the final grade

COURSE POLICIES

Attendance: Attendance is expected during class periods. Students are responsible for all assignments and announcements made in class, and all material covered in class, whether or not it is in the textbook. Please check the class web site and your GatorLink email account regularly for announcements and homework assignments.

Homework: Each homework assignment is due at the beginning of the class on the due date. Late submission will NOT be accepted. Collaboration on homework is permitted unless explicitly prohibited, provided that: 1) collaboration is restricted to students currently in this class; 2) each student must have his/her own contribution and write up his/her homework independently; and 3) on problems involving programming, each student must independently implement every piece of the program(s).

Exam I: This exam will be closed-book and closed-note. But two (2) single-sided 8.5in×11in handwritten study sheets are allowed. Make-up exams can be arranged for properly authorized absences. This exam is tentatively scheduled on February 26, 2008.
Exam II: This exam will be closed-book and closed-note. But two (2) single-sided 8.5in × 11in handwritten study sheets are allowed. Make-up exams can be arranged for properly authorized absences. This exam is tentatively scheduled on April 15, 2008 (3:00-5:00pm).

Integrity and Honesty: Cheating of any kind is extremely serious and may result in an ‘E’ grade and other consequences. Please refer to the Student Honor Code at http://www.sg.ufl.edu/branches/judicial/honorcode.aspx, and consult Student Judicial Affairs web sites http://www.dso.ufl.edu/judicial/ for the Academic Honesty Guidelines and various policies.

ADA Statement: Students with disabilities are encouraged to register with the Office for Student Services to determine the appropriate classroom accommodations. Any student with verification of a disability should contact the instructor as soon as possible, and will be accommodated in an appropriate manner.