

WEST VIRGINIA UNIVERSITY
COLLEGE OF ENGINEERING AND MINERAL RESOURCES
DEPARTMENT OF COMPUTER SCIENCE AND ELECTRICAL ENGINEERING

EE 461 - Introduction to Communication Systems - Fall 2007

Instructor: Daryl Reynolds
Office:: ESB 837
Phone: 293-0405, ext. 2558
Class Time: M,W,F 1:00-1:50 in ESB 201
Office Hours: M 2:00-3:00, R 1:00-2:00, after class, and by appointment
E-Mail: daryl.reynolds@mail.wvu.edu
Web Page: <http://www.csee.wvu.edu/~reynolds/ee461.html>. Check several times a week.
Textbook: *Modern Digital and Analog Communication Systems*, 3rd Ed., by B.P. Lathi
Prerequisite: • EE 329
• some knowledge of MATLAB will be helpful

Course Topics

This course is designed to provide students with an understanding of the fundamentals of analog and digital communications systems. The topics we will cover include:

- Characterization and analysis of continuous-time signals
- Continuous-wave modulation
 - Amplitude modulation, including conventional AM radio
 - Angle modulation, including FM and phase modulation
- Digital modulation
 - Sampling theorem
 - Quantization
 - PSK, PAM, FSK, and other digital modulation techniques
- Noise and Random Processes
- Noise in Communication Systems
 - Signal-to-noise ratio for analog communication systems
 - Optimal receivers and bit-error-probability for digital communication systems
- Solving communications-related problems using MATLAB

Grading

Homework/Computer Problems	20%	(~ 6 assignments, lowest one dropped)
Exam 1	25%	
Exam 2	25%	
Final Exam	30%	

The instructor may curve at his discretion, but you are guaranteed at least the letter grade shown below if you obtain the corresponding score. No '+' or '-' grades will be reported.

A	90%
B	80%
C	70%
D	60%

Homework/Computer Assignments

You will be given at least one week to complete each assignment. Some of the problems may require the use of a computer. Solutions to the written problems will be handed out and/or posted on the web page soon after they are due. **Late homework will not be accepted. However, your lowest score will be dropped.**

Missed Test Policy

You are expected to attend the exams at the scheduled time and date. If you have an unavoidable conflict, please let me know as soon as possible, but no later than one week before the exam. The decision to give a make-up examination is at my discretion. If you miss the exam without first having your absence approved, then the only acceptable excuse is for documented urgent medical reasons or approval by the appropriate university official.

Honor Code

All work submitted for the exams should be your own unaided work. You may confer with your colleagues on interpretation and approach to homework problems (including the computer assignments), but *the solutions must be your own*. All code that you turn in for your computer assignments must be well documented and entirely your own work (except for code that was given to you by the instructor).

Regrading

If you believe the instructor has made a mistake or was unfair in grading, you may request a regrade. However, the request must be made in writing and submitted within one week of the return date of the assignment or exam. The decision to change the grade is entirely at the discretion of the instructor.

Attendance

Attendance is strongly encouraged. Attendance will be recorded at random times throughout the semester and bonus points may be awarded at the discretion of the instructor. In any case, you will be responsible for all material covered in class, even if it is not in the textbook. You are also responsible for material posted on the course web page. It is your responsibility to make sure that all assignments are turned in on time and that you are aware of all announcements made in class. Please arrive to class on time.

Social Justice Statement

West Virginia University is committed to social justice. I expect to foster a nurturing learning environment, based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with Disability Services (293-6700). If you feel that you are being treated inappropriately or unfairly in any way, please feel free to bring your concerns to my attention. Please be assured that doing so will not prejudice the grading process. In return, I expect you to behave professionally and ethically.