

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

EE 461 - Introduction to Communication Systems - Fall 2014

- Instructor:** Daryl Reynolds
Office:: ESB 837
Phone: 304-293-9134
Class Time: MWF 2:00-2:50 in ESB 251
Office Hours: M 12:30-1:30; W 3:00-4:00; F 12:30-1:30 after class, and by appointment
E-Mail: daryl.reynolds@mail.wvu.edu (I do not answer mix email)
Web Page: eCampus. Check often.
Textbook: *Modern Digital and Analog Communication Systems*, 4th Ed., by Lathi and Ding.
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 digital communications systems. The topics we will cover include:

- Characterization and analysis of signals
 - Signal spaces
 - Fourier transform
 - Sampling theorem
 - Degrees of freedom
 - Linear systems
- Digital passband modulation
 - Quantization
 - Digital modulation
 - Optimal receivers
- Noise and random processes
- Performance of uncoded digital communications in noise
- Elements of information theory
 - Data compression
 - Channel capacity and the promise of coding
 - Practical coding schemes

Grading

Matlab Projects	20%
Exam 1	25%
Exam 2	25%
Final Exam	30%

Homework will also be assigned and solutions posted, **but homework assignments will not be collected or graded.** The instructor may curve the final grades 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). As a rule of thumb, if you are sharing written work (through e-mail, for example), you are probably in violation of the honor code.

WVU Academic Integrity Statement

“The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at <http://www.arc.wvu.edu/admissions/integrity.html>. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.”

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.