

UNIVERSITY OF ALABAMA IN HUNTSVILLE
Department of Electrical and Computer Engineering

EE 642 Digital Communications

Fall 1995

Instructor: Payman Arabshahi, EB 217-F. E-mail: payman@ebs330.eb.uah.edu, Tel: (205) 895-6380, Fax: (205) 895-6803. Office hours: Mondays and Wednesdays, 11:00 am - 12:00 noon.

Textbook: B. Sklar, *Digital Communications: Fundamentals and Applications*, Prentice Hall: Englewood Cliffs, NJ, 1988.

Course Outline: The following topics will be covered in class:

- Characterization of Communications Signals and Systems
 - Baseband Signals and Systems
 - Signal Space Representation
 - Representation of Digitally Modulated Signals
- Optimum Receivers for the Additive White Gaussian Noise Channel
 - Digital Modulation Techniques, PSK, FSK, QAM, ...
 - Coherent Detection
 - Noncoherent Detection
 - Probability of Error Calculations
 - M -ary Signaling and Error Performance
- Channel Capacity and Coding
 - Channel Models and Channel Capacity
 - Error Control Coding - Linear Block Codes, Cyclic Codes, Convolutional Codes

Prerequisite: Strong background in Probability and Stochastic Processes (EE 420/500 or equivalent), and prior exposure to basic Communication Theory (EE 506 or equivalent).

Grading:

Homework	15%	
Exam 1	25%	October 9
Exam 2	25%	November 22
Final	35%	

Notes:

1. Best way to reach me is via email.
2. Please observe the posted office hours. If they are not convenient, please make an appointment to see me.
3. No late homeworks will be accepted.
4. The final will be a comprehensive, take home exam.