Course Syllabus

Course Information

EE3350 Communication Systems
Fall 2016
EE3350.002 MW 8:30am-9:45pm, PHY 1.202
EE3350.501 TuTh 5:30pm-6:45pm, FN 2.202

Instructor Contact Information

Dr. Matt Heins
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Office Hours: MW 10:30am-11:30am or by appointment

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Co-requisite: EE3150 Communication Systems Lab
Pre-requisite: EE3301, EE3302, ENGR3341, ENGR 3300

Course Description

After a brief review of signals and systems (mainly Fourier analysis), techniques of transmitting and receiving information signals using analog carrier modulation techniques (AM, FM, PM) are studied. Performance of these systems in the presence of channel noise is established. Methods of digital transmission of analog signals (Binary and M-ary PCM) are studied.

Student Learning Objectives/Outcomes

The student is expected to demonstrate the ability to:
1. Determine the spectral content of periodic and non-periodic signals by applying Fourier analysis
2. Describe and analyze the mathematical techniques of generation, transmission and reception of amplitude modulation (AM).
3. Describe and analyze the mathematical techniques of generation, transmission and reception of angle modulation (FM/PM).
4. Describe and analyze the methods of transmission of digital data (PCM)
5. Evaluate the performance levels (Signal-to-Noise Ratio) of communication systems in the presence of additive white noise

Required Textbooks and Materials

Modern Digital and Analog Communication Systems, Fourth Edition, B.P. Lathi & Z. Ding, Oxford University Press, 2009, ISBN: 978-0-19-533145-5

Assignments & Academic Calendar

Course Outline

Review of Signals and Systems
- Chapter 2.1-2.4, 2.6, 2.8-2.9
- Chapter 3.2-3.8

Amplitude Modulation and Demodulation
- Chapter 4.1-4.8

Angle Modulation and Demodulation
- Chapter 5.1-5.4,5.6
- Chapter 10.3

Sampling, PCM and Digital Communication
- Chapter 6.1, 6.2, 6.4
- Chapter 7.1-7.2, 7.6-7.9

Performance Analysis under Noise
- Chapter 10.1-10.4

Note: Course content is subject to change and may deviate from material in the textbook. Attendance in lectures is mandatory.

Grading Policy (Subject to change)
Quizzes+Assignments: 20 %
Exam 1: 20 %
Exam 2: 25 %
Final Exam: 35%
Exam 1 and 2 dates will be announced at least 1 week prior to the exam.
Students have one week after quiz or exam grades are posted to request a review with the instructor. After one week no grading changes are allowed.

Course & Instructor Policies

Make-up Exams:
Requests for a make-up quiz or exam must be approved in advance by the instructor

Late Work:
Late work is not accepted without special circumstances and pre-approval by the instructor

Class Citizenship:
Student participation is expected. Use of mobile/cellular phone, PDA, or other electronic devices or equipment is not allowed during the class or exam sessions. All such systems must be turned off or silenced and not used during classes and exams without prior permission from the instructor.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Instructor.