ECE 513 - Fall 2014 – Tentative Syllabus
Communication Engineering Fundamentals

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Digital Modulation and Coding by Stephen G. Wilson, Prentice Hall.

Course Outline:

**Introduction**
Overview of a Communication System
Signals and Linear Systems
Random Processes

**Analog Signal Transmission and Reception**
Amplitude and Angle Modulation
Effect of Noise in Analog Communication Systems

**Information Sources and Source Coding**
Modeling of Information Sources
Source Coding Theorem and Algorithms
Rate-Distortion Theory
Quantization
Waveform Coding

**Digital Transmission through an Additive Gaussian Noise Channel**
Pulse Amplitude Modulation
Two-dimensional and Multi-dimensional Signal waveforms
Optimum Receiver
Probability of Error

**Channel Capacity and Coding**
Channel Capacity
Linear Block Codes
Convolutional Codes
Trellis Modulation
Grading:

TBA

Grading:

90-100 - A
80-89  - B
65-79  - C
<65   - E