Course Syllabus	**EECS 4360 – Communication Systems**
Credits and Contact hrs	3 credit hours & two 75-minute lecture contact hours per week
Coordinator	Dr. Junghwan Kim
Textbook	Simon Haykin and Michael Moher, Introduction to Analog & Digital Communications, Wiley 2007.
Course Information	Fourier transform applications in signal analysis and communication. Signal spectra, filtering, AM and FM modulation, noise and optimum receiver, sampling theorem, multiplexing, PCM, introduction to digital modulators and demodulators.

Prerequisite: EECS 3210

Required for EE program

Students Learning Objectives

Student will be able to

1. Determine the spectral contents of time-domain signal by applying Fourier analysis.
2. Describe and analyze the mathematical techniques of generation, transmission and reception of analog modulation signals.
3. Convert analog signals to digital format using sampling and quantization techniques.
4. Describe and analyze the methods of transmission of digital data using baseband and carrier modulation techniques.
5. Evaluate the performance of digital data transmission in the presence of additive white Gaussian noise.
6. Use software to implement the communication system and analyze its performance.
7. Recognize the necessity of life-long learning and engage in life-long learning through timely exposure to the evolving and new technologies in the field of communications.

Topics

1. Fourier Representation of Signal and Systems
2. Amplitude Modulation
3. Angle Modulation
4. Pulse Modulation
5. Digital Band-Pass Modulation
6. Noise in Analog Communications
7. Noise in Digital Communications