Independent Study (TEC 333)
Title: Communications Electronics (for EET356)

COURSE OBJECTIVES:

1. Motivation for studying modern communication systems.

2. Describe the electromagnetic spectrum and its propagation characteristics in a variety of media.

3. Explain the operating principles of AM, FM, and phase modulation and demodulation.

4. Digital communication systems – digital information, sampling, pulse code modulation, coding.

5. Describe the operation of radio, television, telephone, fiber optic, microwave, and data communication systems.

COURSE OUTLINE:

1. Transmission media
   a. Electromagnetic spectrum
   b. Spectrum analysis
   c. Effect of noise on communication signals

2. Modulation/demodulation techniques
   a. Modulation/demodulation
   b. AM, transmitters and receivers
   c. FM, phase locked loops

3. Digital communication systems
   a. Digital information
   b. Pulse modulation
   c. Coding of communications
   d. Error detection

4. Modern communication systems and applications
   a. Television/video and Facsimile
   b. Telephone system
   c. Satellite, wireless, and global positioning system

5. Broadband systems (as time permits)
   a. Multiplexing
   b. Microwave devices
   c. Fiber optics

COURSE REQUIREMENTS:
1. Complete all homework, reading assignments, Multisim© simulation experiments and submit these on the prescribed dates.

2. Complete the midterm test covering material from: homework, discussed in meetings, and from assigned readings in the text.

3. Complete assigned laboratory work and project/term paper as prescribed by the instructor.