ECE Undergraduate Course Objectives

Course Number: ECE 406
Course Name: Digital and Data Communication with Laboratory

After completing this course, the student should be able to do the following:

1. Compute the entropy and capacity of a digital message.
   [Associated outcomes: (a), (e)]

2. Perform signal-to-quantization noise ratio analysis for a linear PCM system.
   [Associated outcomes: (a), (e)]

3. Determine the minimum sampling rate, bit-rate, and bandwidth needed for a digital communication system.
   [Associated outcomes: (a), (c), (e)]

4. Analyze and design baseband and modulated M-ary communication systems that afford zero ISI.
   [Associated outcomes: (a), (c), (e)]

5. Compute the probability of error for binary communication systems with additive noise.
   [Associated outcomes: (a), (e)]

6. Design and test simple AM and FM demodulation circuits.
   [Associated outcomes: (b), (c), (e)]

7. Measure signal and filter characteristics in the laboratory.
   [Associated outcomes: (b), (k)]

8. Write a technical project proposal and detailed report.
   [Associated outcomes: (g)]

9. Make an oral project presentation highlighting design and performance.
   [Associated outcomes: (g)]