ECE 501 – Systems Analysis

• Systems Analysis:
  – introduce signals and systems (basic concepts)
  – introduce linear, time-invariant systems (both discrete- and continuous-time variants)
  – discuss the concept of Fourier series as a representation of periodic signals
  – extend the concept of Fourier series to the continuous-time Fourier transform
  – introduce the concept of the discrete-time Fourier transform
  – discuss topics in time and frequency characterization of signals and systems
  – introduce the concept of sampling for conversion from continuous-time to discrete-time signals
  – show how signal processing concepts (modulation) enable design of modern communication systems
  – introduce the Laplace transform representation of continuous-time signals and systems
  – introduce the z-transform representation of discrete-time signals and systems
  – illustrate the design and stabilization of linear feedback systems