

EEE301-Signals and Systems Course Content

1. SIGNALS AND SYSTEMS

Continuous-Time and Discrete-Time Signals
Transformations of the Independent Variable
Exponential and Sinusoidal Signals
The Unit Impulse and Unit Step Functions
Continuous-Time and Discrete-Time Systems
Basic System Properties

2. LINEAR TIME-INVARIANT SYSTEMS

Discrete-Time LTI Systems: The Convolution Sum

Continuous-Time LTI Systems: The Convolution Integral

Properties of Linear Time-Invariant Systems

Causal LTI Systems Described by Differential and Difference Equations

3. FOURIER SERIES REPRESENTATION OF PERIODIC SIGNALS

4. THE CONTINUOUS-TIME FOURIER TRANSFORM

5. THE DISCRETE-TIME FOURIER TRANSFORM

6. SAMPLING

7. THE LAPLACE TRANSFORM

8. THE Z-TRANSFORM

Course Readings

Required Course textbook

1- *Signals and Systems*, Alan V Oppenheim, Alan S. Willsky, with S. Hamid Nawab. Pearson New International Edition, 2/E, 2014.

2-Schaum's Outline of Signals and Systems, 3rd Edition (Schaum's Outlines) 3rd Edition by **Hwei Hsu**