EE-304 Signals and System

Credit	L	T	P
3	2	1	-

UNIT-I
Morphology of signals and their classifications. Even and odd functions, orthogonal function, definition of Step, impulse, ramp functions. Other non-sinusoidal signals and wave forms as the sum of standard functions. Fourier series representation of signals.

UNIT-II
Fourier Integral and Fourier transform and its properties. Parsevel's theorem. System representation using differential equations, transfer function, impulse response. Poles and zeroswith their concepts and significance

UNIT-III
Analysis of continuous-time Linear Time Invariant (LTI) system using Laplace Transform. Frequency response of LTI systems, zero input response, forced input response. Stability of LTI system, pole criteria for stability.

UNIT-IV
Introduction to Z-transform, Inverse Z- transform and their properties, region of convergence. Poles and zeros. Difference equation, transfer function, pulse response. Application of Z-transform for the analysis of discrete-time LTI systems.

UNIT-V
Correlation: Energy signals, power signals, autocorrelation, cross-correlations its properties and examples. Power spectral density, it's definition and derivations.

TEXT/REFERENCE BOOKS.
1. S. Hykin, Barry Van Veen "Signals and System", John Wiley & Sons.
2. Robert A Gabel, "Signal and Linear Systems", John Wiley & Sons.
3. Mahmood Nahvi, "Signals and Systems", Mc Graw Hill Education.
4. Material from internet.