

SYLLABUS :-

Objective and overview, signal and system types and classifications, step response, impulse response and convolution integral;
Periodic signal analysis: Fourier series and properties;
Aperiodic signal analysis : Fourier Transform - its properties and sinusoidal steady state analysis of systems;
Elements of electrical network : dependent and independent sources, active and passive components;
classical differential equations for description of transient conditions of Network;
Solutions of linear time invariant networks with initial conditions;
Unilateral and Bilateral Laplace Transforms and properties;
Transient solutions of networks using Laplace Transform;
Network functions: poles, zeros, transfer function, Bode plot;
One and two port network parameters and functions : Z, Y and ABCD parameters, driving point and transfer impedances and admittances;
Network Theorems and Formulation of Network equations: generalized formulation of KCL, KVL, State Variable descriptions; Thevenin, Norton, Maximum Power Transfer, Tellegen and Reciprocity Theorems;
Graph theory: Tree, Co-tree, fundamental cut-set, fundamental loop analysis of network;
Analog filter design: Butterworth, Sallen Key, frequency transformation and scaling;