SECOND YEAR

Signals and Systems	COE202
Prerequisite : None	**(3-2-1-2)**

Introduction. Classification of signals and systems: Continuous time signals discrete time signals-step, Ramp, Pulse, Impulse, Exponential, Classification of CT and DT signals-periodic and aperiodic, random signals, CT systems and DT systems, Basic properties of systems-Linear time invariant system and properties. Analysis of continuous time signals: Fourier series analysis, Spectrum of C.T. signals, Fourier Transform and its Inverse. Fourier Transform properties. System Frequency response, impulse response, step response, transfer function. Sampling theory of signals: Sampling of CT signals and aliasing, signal reconstruction from sampled signals. Filters: Low pass filters (LPF), High pass filters (HPF), Band pass filters (BPF). Design criteria for each filter: first order, second order, higher order filters design. Hilbert transform and its properties.

Practical part: Signal Representation (continuous time and discrete time). Energy and power of signals. Understanding the characteristics of filters.