

SYLLABUS :-

Bipolar operational amplifiers. MOS diode, active resistor and current mirrors, CMOS amplifier and operational amplifier. Approximation functions: Butterworth, Chebyshev and Bessel approximations, Frequency transformation. Continuous time filter: Active filter; Second order filter: Single amplifier and multiple amplifier structures and filter parameter sensitivities. Cascade filter. Sampled data filter: Switched Capacitor filter; Switched capacitor integrator and filter. Filter transfer function in z-domain, Filter parameter sensitivities with respect to capacitor ratios. Mixed signal circuits: Introduction to Switched current filter, current cell. Simple second order structure. Analog multiplexer, Sample and Hold Circuits, aliasing error and anti-aliasing filter, Digital to analog converter (DAC), Analog to Digital Converter (ADC), flash, dual slope and multi slope ADC. Over sampling method for A/D and D/A conversion. Delta-Sigma data converter. Noise and noise reductions. Interference signals and their reduction: Capacitive, inductive coupling and ground loop interferences and its reduction. Logarithmic and exponential amplifiers, analog multipliers and divider, Voltage controlled oscillator, Phase locked loop. Waveform generator and Oscillator.