

EEE.7-3.5 Mixed Analogue – Digital Circuits

Course contents: * Positive and Negative feedback electronic circuits. Oscillation criterion. Classes of Oscillators. * RC oscillators (Wien oscillator, Phase shift oscillator, Double T oscillator, etc). LC Oscillators (Colpitts oscillator, Hartley oscillator, Clapp oscillator, etc). Crystal oscillator circuits. Voltage Controlled Oscillators. Phase locked Loops. * Introduction to multivibrators. Astable, Monostable, Bistable multivibrators. OpAmp implementation of multivibrators. * Introduction to Signal Conditioning. IC 555 and application. Clock circuits. Non-linear dynamic systems, chaotic circuits. A/D and D/A circuits. Circuit Analog/Digital interaction. * Introduction to passive electronic filters. Transfer Function, Bode analysis. 1st, 2nd and higher order filters. Analysis and design of low-pass, high-pass, and band pass filters. * Introduction to active electronic filters. Sallen-Key filters. 1st, 2nd and higher order filters. Analysis and design of low-pass, high-pass and band-pass filters.