

EC-353**CIRCUIT SIMULATION LAB****L T P C****- - 3 2****COURSE OBJECTIVES:**

1. To build circuit construction skills using circuit simulation software tool.
2. To simulate rectifiers and amplifier circuits.
3. To simulate LC oscillators, RC oscillator and analog modulation techniques.

COURSE OUTCOMES:**After successful completion of the course, the students are able to**

1. design and verify the operations of RL,RC,RLC circuits and Half Wave Rectifier & Full Wave Rectifiers.
2. design electronic circuits such as CS,CE,Class A power Amplifiers and Oscillators and obtain their frequency responses.
3. simulate the operations of Integrator, Differentiator, Clippers, Clampers and Filters.
4. solve the problems pertaining to electronic circuit design.

List of Experiments:

1. Simulate step response of a RL, RC, and RLC circuits.
2. Design and verify the operating point for a self bias circuit.
3. Determine ripple factor and efficiency of a half wave rectifier and full wave rectifier.
4. Obtain the frequency response of a CS amplifier.
5. Obtain the frequency response of enhancement MOSFET amplifier with series-shunt feedback amplifier.
6. Obtain the frequency response of a single stage and two stage CE amplifier and compare the bandwidths.
7. Design and simulate Class A power Amplifier.
8. Simulate Hartley/ Colpitts Oscillator using BJT.
9. Verify the characteristics of Clippers and Clampers.
10. Simulate a differentiator and integrator using OPAMP.
11. Simulate a low pass and high pass filter using OPAMP.
12. Simulate a RC phase shift Oscillator using OPAMP.
13. Simulate a wein bridge Oscillator using OPAMP.
14. Simulate an Amplitude Modulator and Demodulator.
15. Simulate a Frequency Modulator and Demodulator.

Note: A minimum of 10(Ten) experiments have to be Performed and recorded by the candidate to attain eligibility for Semester End Practical Examination.