3/4 B.Tech – FIRST SEMESTER

EC5L1 **Linear IC Applications Lab** **Credits: 2**

Lecture: -- **Internal Assessment: 25 Marks**
Tutorial/Lab: 3 period /week Semester **Semester End Examination: 50 Marks**

Course Objectives:

- To understand the design concept of linear and non-linear applications of Op-amp.
- To understand the designing industrial applications using 555 timer.
- To study about the various types of data converters.

Learning Outcomes:

Students will be able to:

- Build design concept of Op-amp related applications.
- Develop different order active filters and data converter
- Validate and verify various applications of 555 timer.

NOTE: Minimum of 10 experiments has to be designed theoretically and tested using NI MultiSim software & hardware and recorded by the candidate to attain eligibility for External Practical Examination.

List of Experiments:

1. OP -AMP Applications – Adder, Subtractor, Comparator Circuits.
2. Op-amp inverting and non-inverting amplifiers for desired gain and bandwidth.
3. Practical active integrator and differentiator using IC741.
4. IC 741 Wien Bridge Oscillators for the desired frequency.
5. Schmitt Trigger Circuit using IC 741.
6. Function Generator using OP AMPs.
7. Phase-shift oscillator using IC 741.
8. Active Filter Applications –Design LPF, HPF (first order and second order) for desired value of gain and bandwidth.
9. Active Filter Applications – BPF, Band Reject (Wideband) and Notch Filters (first order) for desired value of gain and bandwidth..
10. IC 555 Timer – Monostable Operation Circuit.
11. IC 555 Timer – Astable Operation Circuit.
12. 4 bit DAC using OP AMP.