III Year-I Semester		L	T	P	C
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LIC APPLICATIONS LAB(RT31048)

Prerequisite Course:

Need basic idea of Electronics circuit analysis

Course Description and Objectives:

- Study characteristics, realize circuits, design for signal analysis using Op-amp ICs.
- Study the linear and non-linear applications of operational amplifiers.
- Study IC 555 timer, PLL and VCO with their applications.
- Study and understand different types of ADCs and DACs
- Acquire skills required for designing and testing integrated circuits

Course Outcomes:

Upon completion of the course, the student will be able to achieve the following outcomes.

COs	Course Outcomes	POs
1	Design circuits using operational amplifiers for various applications.	**3**
2	Analyze and design amplifiers and active filters using Op-	**3**
3	Acquire skills required for designing and testing integrated circuits	**3**
4	Understand the gain-bandwidth concept and frequency response of the three basic amplifiers. Understand thoroughly the operational amplifiers with linear integrated circuits	**3**

SYLLABUS

Minimum Twelve Experiments to be conducted:

1. Study of ICs – IC 741, IC 555, IC 565, IC 566, IC 1496 – functioning, parameters and Specifications.
2. OP AMP Applications – Adder, Subtractor, Comparator Circuits.
3. Integrator and Differentiator Circuits using IC 741.
4. Active Filter Applications – LPF, HPF (first order)
5. Active Filter Applications – BPF, Band Reject (Wideband) and Notch Filters.
6. IC 741 Oscillator Circuits – Phase Shift and Wien Bridge Oscillators.
7. Function Generator using OP AMPs.
8. IC 555 Timer – Monostable Operation Circuit.
9. IC 555 Timer – Astable Operation Circuit.
10. Schmitt Trigger Circuits – using IC 741 and IC 555.
11. IC 565 – PLL Applications.
12. IC 566 – VCO Applications.
13. Voltage Regulator using IC 723.
14. Three Terminal Voltage Regulators – 7805, 7809, 7912.

15. 4 bit DAC using OP AMP.

Equipment required for Laboratories:

1. RPS
2. CRO
3. Function Generator
4. Multi Meters
5. IC Trainer Kits (Optional)
6. Bread Boards
7. Components:- IC741, IC555, IC565, IC1496, IC723, 7805, 7809, 7912 and other essential components
8. Analog IC Tester