3/4 B.Tech. FIFTH SEMESTER

EM5L1 **IC APPLICATIONS LAB** **Credits: 2**

Lab Practice: 3Periods/week **Internal assessment: 25 marks**
Semester end examination: 50 marks

Course Objectives:

- This course will introduce the student about the concepts of Linear and Non-Linear wave shaping, OP-Amplifier and Multivibrators using ICs 741 & 555.
- This course will introduce the student about the concepts of digital ICs 7490, 74151, 74155, 7447, logic gates and flip flops.

Learning Outcomes:

- Students will gain practical knowledge about the Linear and Non-Linear wave shaping Circuits. Parameters and applications of Op-Amplifier and timer.
- Design and working of different types of Multivibrators, Converter & working of Voltage Regulators.
- Students will gain practical knowledge about the adders, subtractor s , MUX, DEMUX, and flip flops, counters .

Minimum Twelve Experiments to be conducted:

1. 741 OPAMP Characteristics
2. Adder, Integrator and differentiator using 741 OPAMP
3 .LPF and HPF using 741 OP AMP
4 IC 555 Timer –Astable Operation
5 IC 555 Timer – Monostable Operation
6 Voltage Regulator using IC 723
7 D/A Converter
8 Study of Logic Gates
9 Study of Flip-Flops using Ics
10 Half Adder and Half subtractor
11 Full Adder and Subtractor
12 74194 Shift Register
13 7490 Counter
14 BCD to 7 Segment decoder using IC 7447
15 Multiplexer and Demultiplexer

Learning resources

Text Books:

1.Op-Amps & Linear ICs – Ramakanth A. Gayakwad, PHI, 1987.
2.Digital Design principles & practices- John F. Wakerly ,3rd Ed. ,2010.