

ANALOG AND DIGITAL CIRCUITS LAB

Course Code	23EE3552	Year	III	Semester	I
Course Category	Professional Core	Branch	EEE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	EEEW, AC
Continuous Internal Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Illustrate Fundamental Principles of Analog Circuits (L3)
CO2	Analyze the Performance of Non-linear wave shaping, oscillators, data converters and wave form generators (L4)
CO3	Apply the fundamental Principles of Combinational and sequential Logic Circuits (L3)
CO4	Analyze the operation of various combinational and sequential Logic Circuits (L4)
CO5	Conduct experiments as a team / individual by using equipment available in the laboratory Make an effective report based on experiments

CO-PO and CO-PSO Mapping Matrix (3 = High, 2 = Medium, 1 = Low)

CO \ PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	1	2		–	–	–	–	–	2	3	2
CO2	3	3	1	2		–	–	–	–	–	2	3	2
CO3	3	2	1	2		–	–	–	–	–	2	3	2
CO4	3	3	1	2		–	–	–	–	–	2	3	2
CO5	–	–	–	2	–	–	–	3	3	2	2	2	2

SYLLABUS (Any 5 of the Following Experiments are to be conducted from each PART)		
Expt .No	Part-A	Mapped CO
1	Analysis of clipper and clamper circuits	CO1, CO2 CO5
2	Analysis of self-bias to a transistor (BJT).	CO1, CO2 CO5
3	Basic applications of op-amp like adder, subtractor, differential amplifier average amplifier	CO1, CO2 CO5
4	Determination of frequency of Wien Bridge oscillator and RC-phase shift oscillator.	CO1, CO2 CO5

5	Analysis of Integrator and Differentiator Circuits using IC 741	CO1, CO2 CO5
6	Plot the frequency response of CE amplifier to determine the bandwidth	CO1, CO2 CO5
7	Generation of square wave using IC 741	CO1, CO2 CO5
8	Verify the PLL characteristics using IC 565	CO1, CO2 CO5
9	Analysis of 8 bit A to D and D to A circuits	CO1, CO2 CO5
PART-B		
1	Design of Full adder and Full Subtractor using logic gates.	CO3, CO4 CO5
2	Realization of parallel adder/subtractor using IC 7483.	CO3, CO4 CO5
3	Implementation of 3 to 8 line decoder using logic gates and IC 7445	CO3, CO4 CO5
4	Implementation of 8 to 1 multiplexer using logic gates and IC 74151.	CO3, CO4 CO5
5	Verify the operation of master-slave JK flip-flop using IC7476	CO3, CO4 CO5
6	Implementation of the following shift registers using IC7495. SISO b) SIPO c) PISO d) PIPO	CO3, CO4 CO5
7	Realization of Boolean functions with PROM/ PAL/ PLA	CO3, CO4 CO5
8	Implementation of Mod-8 synchronous up/down counters using flip-flops	CO3, CO4 CO5
9	Implementation of 4 bit Ring Counter and Johnson Counter using D flip-flops/J-K flip-flops.	CO3, CO4 CO5

Learning Resources	
Text Books:	
1.	J. Millman, C.Halkias, "Electronic Devices and Circuits", Tata Mc-Graw Hill, 2nd Edition, 2010.
2.	D. Roy Choudhury, "Linear Integrated Circuits", New Age International (p) Ltd, 2 nd Edition,

2003

3. Thomas L. Floyd, "Digital Fundamentals", Pearson Education, 2009

Course Coordinator

Module Coordinator