Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
		--	--	2	--	--	1	1
		Examination Scheme						
ETL44	Integrated Circuits Lab	ISE	ESE			Total		
			Practical	Oral				
		40	10	10		60		

Pre-requisite Course Codes	ET44 (Integrated Circuits)	
After successful completion of the course, student will be able to		
Course Outcomes	CO1	To measure different parameters of Op-Amp.
	CO2	Identify, Analyze and design applications of Op-Amp.
	CO3	Implement different applications using special purpose ICs.
	CO4	Design DC power supply for given specification/s.
	CO5	Design, simulate and implement different applications using integrated circuits.

Exp. No.	Suggested list of Experiments	Ref.	Marks
1	To measure different parameters of Op-Amp.	1,2,3	5
2	Design and test a Schmitt trigger circuit for the given values of UTP and LTP using Op-Amp.	1,2,3	5
3	Design and test the following circuits using IC555 A) Astable multivibrator for given frequency and duty cycle. B) Monostable multivibrator for given pulse width-W.	1,2,3	5
4	Design a circuit in which the frequency of oscillations can be controlled by an externally applied voltage using VCO (IC566).	1,2,3	5
5	Design DC power supply LVLC, LVHC, HVLC and HVHC using Regulator ICs.	1,3	5
6	Design and simulate the given circuit using circuit simulation software like SEQUEL, TINA, Multisim. (A group activity with different problem statements.)	1,3	5
7	**Mini Project:**Design, Develop and analyze the given application using ICs like Op-Amp, Multiplier, DAC, MOSFET and also other required ICs using Analog System Trainer Kit by Texas Instruments. Before implementation simulation using circuit software like SEQUEL, TINA and Multisim.	6	10
	Total Marks		40

References:
1. Sergio Franco, Design with Operational Amplifiers and analog integrated circuits, Third edition, McGraw Hill International edition, 2002.
2. Ramakant A. Gayakwad, "*Op-Amps and Linear Integrated Circuits*", Pearson Prentice Hall, 4th Edition
3. Robert Coughlin, Frederick F. Driscoll, Operational Amplifiers and Linear Integrated circuits, PHI Learning, sixth edition.
4. Datasheets for Op-Amp., regulator ICs, IC555.
5. Circuit Simulation software/s like SEQUEL, TINA, Multisim etc.
6. Analog System Trainer Kit Manual (Texas Instruments).