

Electrical & Electronics Engineering Workshop														
CourseCode	23ES1253	Year	I	Semester	II									
Course Category	Engineering Science	Branch	ECE	Course Type	Lab									
Credits	1.5	L-T-P	0-0-3	Prerequisites	Nil									
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	Solve for various electrical parameters in an Electrical Circuit L3													
CO2	Analyze Wheatstone bridge and Open Circuit Characteristics of DC Shunt Generator L4													
CO3	Analyze the Characteristics of Different Electronic Circuits L4													
CO4	Examine the Truth Tables of Logic Gates and Flip-flops Using Respective IC's L4													
CO5	Conduct experiments as a team / individual by using equipment available in the laboratory													
CO6	Make an effective report based on experiments													
Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: High, 2: Medium, 1: Low)														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3			3										
CO2				3									1	1
CO3		3			3								1	1
CO4		3		3	3								1	1
CO5									3				1	1
CO6										3			1	1
Syllabus														
Expt. No.	CONTENTS											Mapped CO's		
Part A: Electrical Engineering Lab														
Conduct any six experiments														
1	Verification of KCL and KVL.											CO1,5,6		
2	Verification of Superposition theorem.											CO1,5,6		
3	Measurement of Resistance using Wheat stone bridge.											CO2,5,6		
4	Magnetization Characteristics of DC shunt Generator.											CO2,5,6		
5	Measurement of Power and Power factor using Single-phase wattmeter.											CO1,5,6		
6	Measurement of Earth Resistance.											CO1,5,6		
7	Calculation of Electrical Energy for Domestic Premises.											CO1,5,6		

Part B: Electronics Engineering Lab		
Conduct any six experiments (Both Software and Hardware)		
8	Plot V-I characteristics of PN Junction diode A) Forward bias B) Reverse bias.	CO3,5,6
9	Plot V – I characteristics of Zener Diode and its application as voltage Regulator.	CO3,5,6
10	Implementation of half wave and full wave rectifiers.	CO3,5,6
11	Plot Input & Output characteristics of BJT in CE and CB configurations.	CO3,5,6
12	Frequency response of CE amplifier.	CO3,5,6
13	Simulation of RC coupled amplifier with the design supplied.	CO3,5,6
14	Verification of Truth Table of AND, OR, NOT, NAND, NOR, Ex-OR, Ex-NOR gates using ICs.	CO4,5,6
15	Verification of Truth Tables of S-R, J-K& D flip flops using respective ICs.	CO4,5,6
Learning Resources		
Reference Books (Part-A)		
1. Basic Electrical Engineering, D. C. Kulshreshtha, Tata McGraw Hill, 2019, 1 st Ed.		
2. Power System Engineering, P.V. Gupta, M.L. Soni, U.S. Bhatnagar and A. Chakrabarti, Dhanpat Rai & Co, 2013		
3. Fundamentals of Electrical Engineering, Rajendra Prasad, PHI publishers, 2014, 3 rd Ed.		
Reference Books (Part-B)		
1. R. L. Boylestad & Louis Nashlesky, Electronic Devices & Circuit Theory, Pearson Education, 2021.		
2. R. P. Jain, Modern Digital Electronics, 4 th Ed., Tata Mc Graw Hill, 2009		
3. R. T. Paynter, Introductory Electronic Devices & Circuits – Conventional Flow Version, PearsonEducation, 2009.		