Basic Electrical & Electronics Engineering Lab

Course Code	19ES1151	Year	I	Semester	I
Course Category	Engineering Sciences	Branch	ECE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	Nil
Continuous Internal Evaluation:	25	Semester End Evaluation:	50	Total Marks:	75

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	To familiarize the basic DC and AC networks used in electrical and electronic circuits.
CO2	To explain the concepts of electrical machines and their characteristics.
CO3	To identify the importance of transformers in transmission and distribution of electric power.
CO4	To impart the knowledge about the characteristics, working principles and applications of semiconductor diodes, metal Oxide semiconductor field effect transistors (MOSFETs).
CO5	To expose basic concepts and applications of Operational Amplifier and configurations

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (H:High, M: Medium, L:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	H	M	M	L					L		L	L	L	L
CO2	H	M	M	L			L		L		L	L		
CO3	H	M	M	L			L		L		L	L		
CO4	H	M	M	L			L		L		L	L	L	M
CO5	H	M	M	L			L		L		L	L	L	M

Syllabus		
Expt. No.	**Contents**	**Mapped CO**
I	Verification of Kirchhoff‘s Laws KVL and KCL.	CO1
II	Verification of DC Superposition Theorem.	
III	Verification of Thevenin's Theorem and Norton's Theorem	
IV	Swinburne's tests on a DC shunt motor.	CO2
V	OC and SC Tests on single phase transformer.	CO3
VI	Brake Test on DC shunt motor.	CO2
VII	Current Voltage Characteristics of a p-n Junction Diode/LED	CO4
VIII	Diode Rectifier Circuits.	
IX	Voltage Regulation with Zener Diodes.	
X	Inverting and Non-inverting Amplifier Design with Op-amps	CO5

Learning Resources
Text Books

1. D.P.Kothari, I.J.Nagrath, Basic Electrical and Electronics Engineering, 1stedition, McGraw Hill Education (India) Private Limited, 2017.
2 B.L.Theraja, Fundamentals of Electrical Engineering and Electronics, 1stedition,S.Chand Publishing, New Delhi, 2006.
3. Adel S. Sedra and Kenneth C. Smith, Microelectronic Circuits 6th edition, Oxford University Press, 2014.

Reference Books

1. S.K. Bhattacharya, Basic Electrical and Electronics Engineering, Pearson Education,2011.
2. Dharma Raj Cheruku, B T Krishna, Electronic Devices and Circuits, 2/e, Pearson Education, 2008.
3. R.K.Rajput, Basic Electrical and Electronics Engineering, University Science Press, New Delhi,2012.