

## Basic Electrical & Electronics Engineering Lab

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

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

<b>Contribution of Course Outcomes towards achievement of Program Outcomes &amp; Strength of correlations (H:High, M: Medium, L:Low)</b>														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	H	M	M	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
CO5	H	M	M	L			L		L		L	L		L

<b>Syllabus</b>		
<b>Expt. No.</b>	<b>Contents</b>	<b>Mapped CO</b>
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

<b>Learning Resources</b>
<b>Text Books</b>

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

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**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.