Prasad V. Potluri Siddhartha Institute of Technology, Kanuru, Vijayawada

PVP20

Department of Freshman Engineering

Basic Electrical & Electronics Engineering Lab

Course Code	20ES1251	**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	15	**Semester End Evaluation**	35	**Total Marks**	50

Course Outcomes

Upon successful completion of the course, the student will be able to

CO1	**Apply** techniques/procedures of Electrical & Electronics Engineering to solve problems (L3).
CO2	Conduct experiments as a team / individual by using equipment available in the laboratory.
CO3	**Examine** the network theorems and Kirchhoff's laws for DC electrical circuits (L4).
CO4	**Analyse** the open circuit characteristic of DC shunt generator and efficiency of single phase transformer (L4).
CO5	**Analyse** the characteristics/ performance parameters of Electronic and Analog Circuits. (L4)
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									1	1
CO2				3	3				3				1	1
CO3		3		3									1	1
CO4		3		3									1	1
CO5		3		3									1	1
CO6				3						3			1	1

Syllabus

Expt. No.	Syllabus	Mapped CO's
	Conduct any ten experiments	
1	Verification of Kirchhoff's Laws KVL and KCL.	CO1,CO2, CO3,CO6
2	Verification of DC Superposition Theorem.	CO1,CO2, CO3,CO6
3	Verification of Thevenin's Theorem and Norton's Theorem.	CO1,CO2, CO3,CO6
4	Open circuit characteristics/magnetization characteristics of DC shunt generator.	CO1,CO2, CO4,CO6
5	OC and SC Tests on single phase transformer.	CO1,CO2, CO4,CO6
6	Voltage Current Characteristics of a p-n Junction Diode.	CO1,CO2, CO5,CO6
7	Half wave rectifier with and without filter.	CO1,CO2, CO5,CO6
8	Full wave rectifier with and without filter.	CO1,CO2, CO5,CO6
9	Voltage Regulation with Zener Diode.	CO1,CO2,

		CO5,CO6
10	Inverting and Non-inverting Amplifier Design with Op-amp.	CO1,CO2, CO5,CO6
11	Verification of KCL and KVL using PSPICE.	CO1,CO2, CO3,CO6
12	Verification of Network Theorems using PSPICE.	CO1,CO2, CO3,CO6
13	Diode and Transistor Circuit Analysis using PSPICE.	CO1,CO2, CO5,CO6
14	Inverting and Non-inverting Amplifier Design with Op-ampusing PSPICE.	CO1,CO2, CO5,CO6

Learning Resources

Text Books

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. Millman Jacob, Halkias C Christos, Electronic Devices and Circuits, 2nd Edition, Tata Mcgrawhill Publications, 2007.

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, 2nd Edition, Pearson Education, 2008.
3. R.K.Rajput, Basic Electrical and Electronics Engineering, University Science Press, New Delhi, 2012.

e- Resources & other digital material

1. http://202.53.81.118/course/view.php?id=122
2. https://nptel.ac.in/courses/108105112/