Course Course       20ES1151       Year       I       Semester       I         Code       Science       Branch       CSE       Course Type       Lab         Credits       1.5       LT-P       0-0-3       Prorequisites       Nil         Continuous       15       Semester End Evaluation       35       Total       50         Upon successful completion of the course, the student will be able to COI       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         CO3       Examine the network theorems and Kirchhoff's laws for DC electrical circuits (L4).       CO4         CO4       Analyse the open circuit characteristic of DC shunt generator and efficiency of single phase transformer (L4).       CO5         CO3       Examine the network theorems and Kirchhoff's laws for Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)       Eontribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)         CO1       3       3       1       1         CO3       3       3       1       1         CO4       3       3       1					Dasic	Electr		Liecu	TOTICS I	Lingine	ering L	aD			
Course Category       Engineering Science       Branch       CSE       Course Type       Lab         Credits       1.5       L.T-P       0-0-3       Prerequisites       Nil         Continuous       15       Semester End Evaluation       35       Total Marks       50         Prevenuisites       Nil       Course Outcomes       Marks       50         Upon successful completion of the course, the student will be able to       Course Outcomes       Course Outcomes       Course Outcomes         C01       Apply techniques/procedures of Electrical & Electronics Engineering to solve problems (L3).       CO       Conduct experiments as a team / individual by using equipment available in the laboratory.       Examine the network theorems and Kirchhoffs' laws for DC electrical circuits (L4).         C04       Analyse the characteristics/performance parameters of Electronic and Analog Circuits. (L4)       Code       make an effective report based on experiments         Cotribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)       Experiments       Experiments         CO2       0       3       3       0       1       1         CO3       3       3       0       1       1       1         CO4	Course			20ES	1151	Yea	r			Ι	Sem	ester		Ι	
Category       Science       Image: Credits       1.5       L-T-P       0-0-3       Prerequisites       Nil         Continuous       1.5       Semester End       35       Total       50         Internal       Evaluation       Marks       50         Upon successful completion of the course, the student will be able to       Conduct experiments as a team / individual by using equipment available in the laboratory.       CO3         C2       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).         C04       Analyse the open circuit characteristic of DC shunt generator and efficiency of single phase transformer (L4).       Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)         C01       3       3       3       1       1         C03       3       3       3       1       1       1         C05       Analyse the open core out course towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)       PO1       PO1 </td <td>Code</td> <td></td>	Code														
Credits       1.5       L-T-P       0-0-3       Prerequisites       Nil         Continuous Internal Evaluation       15       Semester End Evaluation       35       Total Marks       50         Upon successful completion of the course, the student will be able to COI       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         CO1       3       3         CO1       3       3         CO1       3       3         CO2       13       3         CO3       3       1         CO4       3       3         CO5       3       3         CO6       3       3         CO1       3       3         CO2       3	Course					Bra	Branch		CSE		Cou	Course Type		Lab	
Continuous Internal Evaluation       15       Semester End Evaluation       35       Total Marks       50         Evaluation       Course Outcomes       Course Outcomes       50         Upon successful completion of the course, the student will be able to CO1       Apply techniques/procedures of Electrical & Electronics Engineering to solve problems (L3).         C02       Conduct experiments as a team / individual by using equipment available in the laboratory.       C03         C03       Examine the network theorems and Kirchhoff's laws for DC electrical circuits (L4).       C04         C04       Analyse the open circuit characteristic of DC shunt generator and efficiency of single phase transformer (L4).       C05         C05       Analyse the characteristics/performance parameters of Electronic and Analog Circuits. (L4)       C06         C06       make an effective report based on experiments       Total       1         C011       3       3       1       1       1         C02       13       3       1       1       1       1         C011       3       3       1       1       1       1         C02       1       3       3       1       1       1         C02       3       3				Science											
Internal Evaluation       Evaluation       Marks         Evaluation       Course Outcomes $$													s		
Evaluation       Course Outcome         CO1       Apply techniques/procedures of Electrical & Electronics Engineering to solve problems (I.3).         C02       Conduct experiments as a team / individual by using equipment available in the laboratory.         C03       Examine the network theorems and Kirchhoff's laws for DC electrical circuits (I.4).         C04       Analyse the open circuit characteristic of DC shunt generator and efficiency of single phase transformer (L4).         C05       Analyse the characteristics/ performance parameters of Electronic and Analog Circuits. (I.4)         C06       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       PO1       PO1 <td></td> <td></td> <td></td> <td colspan="2">15</td> <td></td> <td colspan="2"></td> <td></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2">50</td>				15										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         CO11       3       3         CO1       3       3       1         CO2       3       3       1         CO3       3       3       1         CO4       Analyse the open circuit 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)         CO2       3       3       1       1         CO3       3       3       1       1   <						Eva	Evaluation				Mar	rks			
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 (S:High, 2: Medium, 1:Low)       PO1     PO2     PO3     PO4     PO5     PO6     PO7     PO8     PO9     PO10     PO11     PO12     PS01     PS02       CO5     3     3     4     3     1     1     1       CO4     3     3     4     3     1     1     1       CO5     3     3     4     4     4     4     4     4       CO4     3     3     4     3     1     1     1	Evalua	tion					Co		utoom	00					
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     PO1     PO12     PS01     PS02       CO2     3     3     3     1     1     1     1       CO3     3     3     3     1     1     1     1       CO3     3     3     3     1	Upon su	ccessf	ful com	nletion	of the	course									
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         CO1       3       Correlations (3:High, 2: Medium, 1:Low)         PO1       PO2       PO3       PO4       PO6       PO7       PO8       PO9       PO1       PO	<u> </u>											ing to so	lve prob	lems (L	3)
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     PO1     PO1     PO2     PS01     PS02       CO1     3     3     0     1															
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     PS01     PS02       CO1     3     3     1     1     1       CO2     3     3     1     PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PS01 PS02       CO1     3     3     1     I     PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO10 PO11 PO12 PS01 PS02       CO1     3     3     1     I     PO1 PO1 PO12 PS01 PS02     PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO10 PO11 PO12 PS01 PS02     CO1       CO2     Strength of correlations (3:High, 2: Medium, 1:Low)     I															
transformer (L4).COSAnalyse the characteristics/ performance parameters of Electronic and Analog Circuits. (L4)Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)POIPO2PO3PO4PO5PO6PO7PO8PO9PO10PO11PO12PS01PS02CO13AABAAAACOULD BOD PO3PO4PO5PO6PO7PO8PO9PO10PO11PO12PS01PS02COUL3AAAAAAACOUL33AAAAACOUL33AAAAACOUL33AAAACOUL33AAAACOUL33AAAACOUL33AAAACOUL33AAAACOUL33AAAACOULSyllabusMaped CO'sConduct any ten experimentsConduct any ten experimentsConduct any ten experimentsConduct any ten experimentsCOULCO2, <b< td=""><td></td><td></td><td colspan="9"></td><td>phase</td></b<>												phase			
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)       POI     PO2     PO3     PO4     PO5     PO6     PO7     PO8     PO9     PO10     PO11     PO12     PS01     PS02       CO1     3     3     0     1     1     1     1     1       CO2     3     3     3     3     1     1     1     1       CO3     3     3     1     1     1     1     1     1       CO4     3     3     1     1     1     1     1     1       CO5     3     3     1     1     1     1     1     1       Syllabus       Expt. No.     Syllabus     Mapped CO's     CO3,CO6     2     Verification of Kirchhoff_s Laws KVL and KCL.     CO1,CO2, CO3,CO6     2     CO1,CO2,     CO3,CO6     3     CO1,CO2,     CO3,CO6     3     CO1,CO2,     CO3,CO6     3     CO1,CO2,     CO3,CO6     3     CO1,CO2, <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5</td><td>0</td><td>•</td></td<>													5	0	•
Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)PO1PO2PO3PO4PO5PO6PO7PO8PO9PO10PO11PO12PS01PS02PS02CO133333111CO23333111CO33331111CO4331111CO5331111CO6331111SyllabusMapped CO'sConduct any ten experiments1Verification of Kirchhoff_s Laws KVL and KCL.CO1,CO2, CO3,CO62Verification of DC Superposition Theorem.CO1,CO2, CO3,CO63Verification of Thevenin's Theorem and Norton's Theorem.CO1,CO2, CO3,CO64Open circuit characteristics/magnetization characteristics of DC shunt generator.CO1,CO2, CO4,CO65OC and SC Tests on single phase transformer.CO1,CO2, CO5,CO66Voltage Current Characteristics of a p-n Junction Diode.CO1,CO2, CO5,CO67Half wave rectifier with and without filter.CO1,CO2, CO5,CO68Full wave rectifier with and without filter.CO1,CO2, CO5,CO69Voltage Regulation with Zener Diode.CO1,CO2, CO5,CO610Inverting and Non-inverting Amplifier Design with Op-amp. </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>s of Ele</td> <td>ectronic</td> <td>and Ana</td> <td>log Circ</td> <td>uits. <u>(L</u>A</td> <td>)</td>										s of Ele	ectronic	and Ana	log Circ	uits. <u>(L</u> A	)
Strength of orrelations (3:High, 2: Medium, 1:Low)       POI     PO2     PO3     PO4     PO5     PO6     PO7     PO8     PO9     PO10     PO11     PO12     PS01     PS02       CO1     3     0     3     0	CO6				1		1								
PO1       PO2       PO3       PO4       PO5       PO6       PO7       PO8       PO9       PO10       PO11       PO12       PS01       PS02         CO1       3       3       3       3       3       3       3       1		Cor	ntribut									0	Dutcom	es &	
CO1       3       3       3       1       1       1         CO2       3       3       3       3       1       1       1         CO3       3       3       3       3       1       1       1       1         CO4       3       3       3       1       1       1       1       1         CO4       3       3       3       1       1       1       1       1         CO6       3       3       1       1       1       1       1         CO6       3       3       1       1       1       1       1       1         Syllabus       Mapped CO's         Conduct any ten experiments         1       Verification of Kirchhoff_s Laws KVL and KCL.       CO1,CO2, CO3,CO6       C		<b>.</b>	<b>D</b> = 1												2000
CO2       3       3       3       1       1         CO3       3       3       3       1       1       1         CO4       3       3       3       1       1       1       1         CO4       3       3       3       1       1       1       1       1         CO5       3       3       3       1       1       1       1       1         CO5       3       3       3       1       1       1       1       1       1         CO5       3       3       1       1       3       1	CO1		PO2	PO3		PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO3     3     3     1     1     1       CO4     3     3     1     1     1       CO5     3     3     1     1     1       CO6     1     3     1     1     1       CO6     3     3     1     1     1       Expt. No.     Syllabus     Mapped CO's     CO3,CO6       2     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. <td></td> <td>3</td> <td></td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td>		3				2				2				1	1
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CO6     3     3     3     1     1       Syllabus     Mapped CO's       Expt. No.     Syllabus     Mapped CO's       Conduct any ten experiments       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															
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## **Basic Electrical & Electronics Engineering Lab**

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		
	Kothari, I.J.Nagrath, Basic Electrical and Electronics Engineering, 1 <sup>st</sup> Editio	on, McGraw Hill
	cation (India) Private Limited, 2017.	
	Theraja, Fundamentals of Electrical Engineering and Electronics, $1^{st}$ Ed	ition, S.Chand
	lishing, New Delhi, 2006.	
	man Jacob, Halkias C Christos, Electronic Devices and Circuits, 2 <sup>nd</sup> Edition, T	ata Mcgrawhi
	lications, 2007.	
Reference I	Books	
1. S.K	Bhattacharya, Basic Electrical and Electronics Engineering, Pearson Education	n, 2011.
	rma Raj Cheruku, B T Krishna, Electronic Devices and Circuits, 2 <sup>nd</sup> E	
	cation, 2008.	·
3. R.K	Rajput, Basic Electrical and Electronics Engineering, University Science Pr	ess. New Delhi
2012		<b>,</b>
e- Resource	es & other digital material	
	://202.53.81.118/course/view.php?id=122	
2. http:	s://nptel.ac.in/courses/108105112/	