

PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY
PANIPAT
DEPARTMENT OF APPLIED SCIENCES & HUMANITIES

LESSON PLAN

Subject Name: - Basics of Electrical and Electronics Engg.

Subject Code: - ECE-102

Semester/ Year: -1st/1st

Sr. No	Lecture No.	Description of Topic	Tentative date	Covered date	Methodology	CO
1	L1	Discussion about subject, Course outcomes and Exam pattern	22-08-2024	22-08-2024	Discussion with Students	CO1
2	L2	Unit-1: Electrical circuit elements (R, L and C), voltage and current sources	23-08-2024	23-08-2024	Lecture	
3	L3	Ohm's Law, Series and Parallel Circuits, voltage and current division rule	27-08-2024	27-08-2024	Lecture	
4	L4	Numerical based on ohms law, series and parallel circuits	28-08-2024	28-08-2024	Lecture	
5	L5	KVL, KCL and its numerical	29-08-2024	29-08-2024	Lecture	
6	L6	Terms used in network terminology, Circuit elements classification	30-08-2024	02-09-2024	Lecture	
7	L7	Mesh analysis of resistive circuit	02-09-2024	03-09-2024	Lecture	
8	L8	Numerical on Mesh analysis of resistive circuit	03-09-2024	04-09-2024	Lecture	
9	L9	Node Voltage analysis of Circuits	04-09-2024	06-09-2024	Lecture	
10	L10	Numerical on Node Voltage analysis of Circuits	06-09-2024	09-09-2024	Lecture	
11	L11	Concept of Super Mesh & Super Node	09-09-2024	10-09-2024	Lecture	
12	L12	Star Delta transformation derivation	10-09-2024	11-09-2024	Lecture	
13	L13	Numerical on Star Delta transformation	11-09-2024	13-09-2024	Lecture	

14	L14	Superposition theorem	13-09-2024	16-09-2024	Lecture	CO2
15	L15	Numerical on Superposition theorem	16-09-2024	17-09-2024	Lecture	
16	L16	Thevenin's Theorem and its numerical	17-09-2024	18-09-2024	Lecture	
17	L17	Norton's Theorem and its numerical	18-09-2024	20-09-2024	Lecture	
18	L18	Duality, reciprocity theorem	20-09-2024	23-09-2024	Lecture	
19	L19	Maximum Power Transfer Theorem	23-09-2024	24-09-2024	Flip Learning	
20	L20	Test of Unit-1	24-09-2024	30-09-2024	Test	
21	L21	Unit 2: AC Fundamentals: Introduction and Some definitions, Generation of AC quantities, EMF equation of AC quantities	25-09-2024	01-10-2024	PPT	
22	L22	Peak value and Average value	27-09-2024	04-10-2024	Lecture	
23	L23	RMS value of alternating quantity	30-09-2024	07-10-2024	Lecture	
24	L24	Numerical on Average and RMS values	01-10-2024	08-10-2024	Lecture	
25	L25	Phase, Phase difference and Phasor addition	04-10-2024	11-10-2024	Lecture	
26	L26	Numerical on Phasor addition and subtraction	07-10-2024	15-10-2024	Lecture	
27	L27	AC circuits with pure Resistor and Inductor	08-10-2024	16-10-2024	Lecture	
28	L28	Pure capacitor, Numerical	09-10-2024	23-10-2024	Lecture	
29	L29	RL series, RC series circuits, P.F., active, reactive & apparent powers	11-10-2024	24-10-2024	Lecture	
30	L30	RLC Series Circuits and Series resonance	14-10-2024	25-10-2024	Flip Learning	
31	L31	AC parallel circuits, phasor method	15-10-2024	04-11-2024	Lecture	
32	L32	Polar & rectangular forms, J-method for solving parallel circuits	16-10-2024	06-11-2024	Lecture	

33	L33	Test of unit 2	23-10-2024	07-11-2024	Test	
34	L34	Unit 3: Working Principle of transformer	24-10-2024	08-11-2024	Lecture	CO3
35	L35	Construction, Emf equation of transformer	25-10-2024	11-11-2024	Lecture	
36	L36	Losses in a transformer, Maximum efficiency condition	28-10-2024	14-11-2024	Lecture	
37	L37	Constructional parts of DC Machines	04-11-2024	18-11-2024	Lecture	
38	L38	Principles of working of DC Machines	06-11-2024	20-11-2024	Video	
39	L39	Generated and back EMF, Types of DC machines	07-11-2024	21-11-2024	Lecture	
40	L40	Speed Control of DC shunt Motor	08-11-2024	22-11-2024	Lecture	
41	L41	Braking of dc motors, Four quadrant operation of DC motor	11-11-2024	25-11-2024	Lecture	
42	L42	Test of unit 3	13-11-2024	28-11-2024	Test	
43	L43	Unit 4: Active and passive components, Introduction of Semiconductors, doping	14-11-2024	02-12-2024	Lecture	
44	L44	PN junction diode, breakdown, barrier potential	18-11-2024	09-12-2024	PPT	
45	L45	Diode as a switch,Zener diode, Voltage regulator using Zener Diode, Avalanche diode	20-11-2024	11-12-2024	PPT	
46	L46	Different types of transistors	21-11-2024	12-12-2024	Lecture	
47	L47	Principle of Operation of transistor	22-11-2024	16-12-2024	Lecture	
48	L48	Input and Output characteristics of Common Emitter, Common Base Configurations	25-11-2024	18-12-2024	Lecture	
49	L49	Common Collector Configurations	27-11-2024	19-12-2024	Lecture	
50	L50	Transistor as a switch and amplifier	28-11-2024	20-12-2024	Lecture	
51	L51	Doubt Class	29-11-2024	20-12-2024	Doubt Class	

Text Books:

1. Charles K. Alexander, Matthew N. O. Sadiku, “Fundamentals of Electric Circuits”, McGraw Hill Education, 6th Edition, 2019.
2. B.L. Theraja, A. K. Theraja, “A Textbook of Electrical Technology”, S Chand Publication, 23rd Edition, 1959.
3. Vijay Kumar Garg, “Basic Electrical Engg: A complete Solution”, Wiley India Ltd, 1st Edition, 2017.
4. S Salivahanan, N Naresh Kumar, “Electronics devices and circuits”, McGraw Hill, 4th Edition, 2017.
5. Vincent Del Toro, “Electrical Engineering Fundamentals”, Pearson, 2st Edition, 2015.
6. N N Bhargava, “Basic Electronics and Linear Circuits”, McGraw Hill, 2nd Edition, 2017.
7. Joseph A. Edminister, “Schaum's Outline of Electric Circuits”, McGraw Hill, 7th Edition, 2018.

Other References:

1. Rajendra Prasad, “Electrical Engg. Fundamentals”, PHI Pub, 1st Edition, 2017.
2. Millman, Halkias, “Integrated Electronics”, TMH, 2nd Edition, 2017.
3. Boylestad, Nashelsky, “Electronic Devices & Circuit Theory”, PHI, 11th Edition, 2015.