

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

**LESSON PLAN**

**Name: - Mr. Rajeev Saini**

**Subject Name: - Basic Electrical engineering**

**Semester/Session: -1<sup>st</sup> Sem. (Session 2021-22)**

**Subject Code:- ES-101A**

Sr. No	Lecture No.	Description of Topic	Tentative date	Methodology	CO
1	L1	Discussion about subject, Course outcomes and Exam pattern	08-11-2021	Discussion with Students	<b>CO1</b>
2	L2	<b>Unit-1:</b> Some Basic Definitions, Ohm's Law, Series and Parallel Circuits	09-11-2021	Lecture	
3	L3	Numerical based on ohms law, series and parallel circuits	10-11-2021	Lecture	
4	L4	KVL, KCL and its numerical	11-11-2021	Lecture	
5	L5	Terms used in network terminology, Circuit elements classification	12-11-2021	Lecture	
6	L6	Mesh analysis of resistive circuit	15-11-2021	Lecture	
7	L7	Numericals on Mesh analysis of resistive circuit	16-11-2021	Lecture	
8	L8	Node Voltage analysis of Circuits	17-11-2021	Lecture	
9	L9	Numericals on Node Voltage analysis of Circuits	18-11-2021	Lecture	
10	L10	Concept of Super Mesh & Super Node	22-11-2021	Lecture	
11	L11	Star Delta transformation derivation	23-11-2021	Lecture	
12	L12	Numericals on Star Delta transformation	29-11-2021	Lecture	
13	L13	Superposition theorem	30-11-2021	Lecture	
14	L14	Numericals on Superposition theorem	01-12-2021	Lecture	
15	L15	Thevenin's Theorem and its numericals	02-12-2021	Lecture	
16	L16	Norton's Theorem and its numericals	03-12-2021	Lecture	

17	L17	Maximum Power Transfer Theorem and its numericals	06-12-2021	Lecture
18	L18	Design of DC Electrical Circuits using Multisim/ECS	07-12-2021	Using Multisim/ECS software
19	L19	Revision of Unit 1	08-12-2021	Flip Learning
20	L20	Test of Unit-1	09-12-2021	Test
21	L21	<b>Unit 2:</b> AC Fundamentals: Introduction and Some definitions	10-12-2021	Lecture
22	L22	Generation of AC quantities	13-12-2021	Using animated video
23	L23	EMF equation of AC quantities	14-12-2021	Lecture
24	L24	Peak value and Average value	15-12-2021	Lecture
25	L25	RMS value of alternating quantity	16-12-2021	Lecture
26	L26	Numerical on Average and RMS values	17-12-2021	Lecture
27	L27	Numerical on Average and RMS values	22-12-2021	Flip Learning
28	L28	Phase, Phase difference and Phasor addition	23-12-2021	Lecture
29	L29	Numerical on Phasor addition and subtraction	24-12-2021	Lecture
30	L30	Mathematical representations of Phasors	27-12-2021	Lecture
31	L31	AC circuits with pure Resistor and Inductor	28-12-2021	Lecture
32	L32	Pure capacitor and RL series combination	29-12-2021	Lecture
33	L33	RC series circuits	30-12-2021	Lecture
34	L34	RLC Series Circuits and Series resonance	31-12-2021	Lecture
35	L35	Series RLC Circuit design using Multisim/ECS	03-01-2022	Using Multisim/ECS software
36	L36	AC parallel circuits, phasor method	04-01-2022	Lecture
37	L37	J- method for solving parallel circuits	05-01-2022	Lecture

**CO2**

38	L38	Test of unit 2	06-01-2022	Test	
39	L39	<b>Unit 3:</b> Introduction to three phase circuits,	07-01-2022	Lecture	<b>CO3</b>
40	L40	Generation of alternating 3- phase emf, Phase sequence and its importance	10-01-2022	Lecture	
41	L41	Voltage and current relations in star connections	11-01-2022	Lecture	
42	L42	Voltage and current relations in delta connections	12-01-2022	Lecture	
43	L43	Measurement of 3-phase power by two wattmeter method for various types of star connected balanced loads.	13-01-2022	Lecture	
44	L44	Measurement of 3-phase power by two wattmeter method for various types of delta connected balanced loads.	14-01-2022	Lecture	
45	L45	Introduction to magnetic circuits	17-01-2022	Lecture and discussion with students	
46	L46	Single Phase Transformer: Principle, construction	18-01-2022	Lecture	
47	L47	Emf equation, Ideal transformer, Transformer at no load	19-01-2022	Lecture	
48	L48	Phasor diagram at on load conditions	20-01-2022	Lecture	
49	L49	Losses & Efficiency, regulation,	21-01-2022	Lecture	
50	L50	Concept of auto transformer	27-01-2022	Lecture	
51	L51	OC & SC test, equivalent circuit	28-01-2022	Lecture	
52	L52	Revision of unit 3	31-01-2022	Flip Learning	
53	L53	<b>Unit 4: Electrical Machines:</b> Introduction, Construction of DC machine	01-02-2022	Power Point Presentation	<b>CO4</b>
54	L54	Working of dc machine with commutator action	02-02-2022	Power Point Presentation	
55	L55	Speed control of dc shunt motor	03-02-2022	Power Point Presentation	
56	L56	Construction and working of a three-phase induction motor	04-02-2022	Power Point Presentation	
57	L57	Generation of rotating magnetic fields	07-02-2022	Lecture	

58	L58	Significance of torque-slip characteristic	08-02-2022	Lecture	
59	L59	Basics of Single-phase induction motor, Capacitor start capacitor run Single-phase induction motor working	09-02-2022	Power Point Presentation	
60	L60	Basic construction and working of synchronous generator and motor.	10-02-2022	Power Point Presentation	
61	L61	Revision of various motors and generators	11-02-2022	Flip Learning	
62	L62	Electrical Installations: Switch Fuse Unit (SFU), MCB	14-02-2022	Power Point Presentation	
63	L63	ELCB, MCCB,	15-02-2022	Power Point Presentation	
64	L64	Types of Wires and Cables, Earthing.	17-02-2022	Flip Learning	
65	L65	Test of unit 4	18-02-2022	Test	

**\*Highlighted part represents Content beyond Syllabus topics**

**\* Quizzes on Saturdays**

Subject In charge