

Lesson Plan

Name of the Faculty:	Maninder Singh
Discipline:	B.Tech. (CSE)
Semester:	2 nd
Subject& Code:	Basic Electrical Engineering(B24-ECS-104)
Work Load (Lecture/Practical) per week (In hours):	Lecture-3 Tutorial-1

S. No.	Lecture	Topics
1.	L1.	Dc Circuits:- Ohm’s Law, junction & node, circuit elements classification
2.	L2.	Linear & nonlinear, active & passive, lumped, distributed, unilateral & bilateral with examples
3.	L3.	KVL, KCL, Loop analysis of resistive circuit in the context of dc voltages & currents
4.	L4.	Node-voltage circuit in the context of dc voltages & currents
5.	L5.	Star-Delta analysis of resistive transformation for set of pure resistors
6.	L6.	Network Theorems: Superposition
7.	L7.	Thevenin’s and Norton’s theorems
8.	L8.	maximum power transfer theorem
9.	L9.	Relevant D.C. circuit analytical problems for quantitative analysis.
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11.	L11.	Revision
12.		Home Assignment 1
13.	L12.	AC Fundamentals: Mathematical representation of various wave functions, Sinusoidalperiodic signal, instantaneous & peak values
14.	L13.	RMS & average values of various waveforms
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16.	L15.	polar & rectangular form representation of impedances & phasor quantities
17.	L16	Addition & subtraction of two or more phasor sinusoidal quantities using component resolution method
18.	L17.	Laws of EMI
19.	L18.	Revision
20.	L19.	A.C. Circuits: Behavior of various components fed by A.C. source. steady state response ofpure R, pure L
21.	L20.	Behavior of pure C, RL series circuit
22.	L21.	RC, RLC series with waveforms of instantaneous voltage, current & power on simultaneous real axis scale and corresponding phasor diagrams)
23.	L22.	P.F.active, reactive & apparent power
24.	L23.	Frequency response of Series RLC circuit

25.	L24.	Frequency response of parallel RLC circuit
26.	L25.	Revision
27.		Home Assignment 2
28.	L26.	Balanced Three Phase Systems: generation of 3 phase supply, 3-phase balanced circuits,
29.	L27.	voltage and current relations in star and delta connections.
30.	L28.	Measurement of 3-phase power by two wattmeter method for various types of star & delta connected balanced loads.
31.	L29.	Single Phase Transformer (Qualitative analysis only): Concept of magnetic circuits. Relation between MMF & Reluctance. Hysteresis & Eddy current phenomenon.
32.	L30.	Principle, construction of transformer
33.	L31.	emf equation ,Phasor diagram of ideal transformer
34		equivalent circuit of transformer
35.	L32.	Losses & Efficiency of transformer
36.	L33.	OC & SC test, Load test
37.	L34.	Revision
38.		Home Assignment 3
39.	L35.	Electrical Machines (qualitative analysis only): Construction of Dc Machine.
40.	L36.	Generated and back emf equation
41.	L37	Excitation and types of DC machine
42.	L38	Speed control of DC shunt motor
43.	L39	Construction and working of a three-phase induction motor
44.	L40	Concept of slip and phase sequence importance
45.	L41	Basic construction&working of synchronous generator and motor.
46.	L42	Revision
		Home Assignment 4