

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electrical And Electronics Engineering

Lesson plan of faculty member for the academic year 2016–17

Class: II B Tech

Branch-Section: ECE-B

Semester: I

Subject: Electrical circuits (EC)

Lectures per week: 4+1 (Tutorial)

Lecture number	Topics to be covered	Date (s)
UNIT-I Introduction to electrical circuits		
1	Introduction to electrical circuits	13 June 2016
2	Circuit concepts	16 June 2016
3	R-L-C Parameters	17 June 2016
4	Classification of Energy sources	18 June 2016
5	Tutorials (G2,G3,G1) – Problems related to R-L-C parameters	15, 17, 18 June 2016
6	Source transformation & Kirchhoff's laws	20 June 2016
7	Voltage and current relationships for passive elements	23 June 2016
8	Network reduction techniques Mesh analysis	24 June 2016
9	Nodal analysis & Mesh analysis	25 June 2016
10	Tutorials (G2,G3,G1) – Problems related to source transformation	22, 24, 25 June 2016
11	Super node techniques for DC excitation	27 June 2016
12	Super mesh techniques for DC excitation	30 June 2016
UNIT-II Single phase a.c circuits		
13	Introduction to single phase ac circuits	1 July 2016
14	Definitions related to a.c circuits	2 July 2016
15	Tutorials (G2,G3,G1) – Problems related ac circuits	29 June, 1, 2 July 2016
16	RMS Value & Average value for periodic waveforms Form factor & peak factor for periodic waveforms	4 July 2016
17	Phase and phase difference & Complex and polar forms of representation & J-notation	8 July 2016
18	Steady state analysis :AC through pure resistor	9 July 2016
19	Tutorials (G3,G3) – Problems related rms and average values	8, 9 July 2016
20	AC through pure capacitor, AC through pure inductor	11 July 2016
21	Series RL circuits & Series RC circuits	14 July 2016
22	Series RLC circuits	15 July 2016
23	Parallel circuits	16 July 2016
24	Tutorials (G2,G3,G1) – Problems related RL RC RLC circuits	13, 15, 16 July 2016
25	Series parallel circuits	18 July 2016
26	Problems on parallel circuits	21 July 2016
27	Problems on series circuits	22 July 2016
UNIT-III Locus diagrams, resonance and magnetic circuits		
28	Concept of locus diagrams	23 July 2016
29	Tutorials (G2,G3,G1) – Problems related locus diagrams	20, 22, 23 July 2016
30	Series RC circuits with the variation of parameters	25 July 2016
31	Series RLC circuits with the variation of parameters	28 July 2016
32	Parallel circuits with the variation of parameters	29 July 2016
33	Concept of resonance	30 July 2016
34	Tutorials (G2,G3,G1) – Problems related series RL RC networks	27, 29, 30 July 2016
35	Series resonance	4 August 2016
36	Parallel resonance	5 August 2016
37	Problems on series and parallel resonance	6 August 2016
38	Tutorials (G2,G3,G1) – Problems related resonance	3, 5, 6 August 2016
39	Concept of magnetic circuits	18 August 2016
40	Faraday's laws of electromagnetic induction & Concept of self and mutual induction	19 August 2016
41	Dot convention & coefficient of coupling & Composite magnetic circuits	20 August 2016

42	Tutorials (G2,G3,G1) – Problems related mutual induction	17,19,20 August 2016
UNIT – IV Network topology		
43	Concept of tree and co-tree Introduction to network topology	22 August 2016
44	Incidence matrix & Basic cutset matrix	26 August 2016
45	Basic tie set matrix	27 August 2016
46	Tutorials (G2,G3,G1) – Problems related Tie set matrix	24,26,27August 2016
47	Mesh analysis for ac networks	29 August 2016
48	Nodal analysis for ac networks	1 September 2016
49	Dual and duality	2 September 2016
50	Problems on duality	3 September 2016
51	Tutorials (G2,G3,G1) – Problems related Mesh and Nodal analysis	27 August, 2, 3 September 2016
52	Problems on tieset and cutset matrix	8 September 2016
53	Problems on nodal analysis	9 September 2016
54	Problems on mesh analysis	10 September 2016
55	Tutorials (G2,G3,G1) – Problems related Duality	7,9,10September2016
UNIT 5 Network theorems		
56	Network theorems	15 September 2016
57	Superposition theorem	16 September 2016
58	Problems on superposition theorem	17 September 2016
59	Tutorials (G2,G3,G3) – Problems related Super position theorem	14,16,17September 2016
60	Thevinin's theorem	19 September 2016
60	Nortons theorem	22 September 2016
62	Problems on thevinin's and Norton's theorem	23 September 2016
63	Maximum power transfer theorem	24 September 2016
64	Tutorials (G2,G3,G1) – Problems related Thevinin's theorem	21, 23, 24 September 2016
65	Tellegen's theorem	26 September 2016
66	Problems on Tellegen's theorem	29 September 2016
67	Milliman's theorem	1 October 2016
68	Tutorials (G2,G3) – Problems related Tellegen's theorem	28 September,1October 2016
69	Reciprocity theorem	3 October 2016
70	Problems on reciprocity and milliman's theorem	27 October 2016
71	Problems on maximum power transfer theorem	28 October 2016
72	Compensation theorem	29 October 2016
73	Tutorials (G2,G3,G1) – Problems related Maximum power transfer theorem	26, 28, 29 October 2016
74	Revision on Unit V	31 October 2016
75	Tutorials (G2) – Problems related Theorems	2 November 2016
76	Discussion on previous papers	3 November 2016

Text Books:

1. N.C. Jagan&C.Lakshminarayana, 'Network Theory', B.S Publications.
2. Circuits and Networks – A.Sudhakar,Shyamohan S.Pillai,3 ed., 2009TMH
3. Electric Circuits by A.Chakrabarthy, Dhanipat Rai & Sons.

Name and signature of the faculty: T Vinay Kumar ----

Name and signature of Head of the Department: Ms N Shribala