

# Bhoj Reddy Engineering College for Women: Hyderabad

## Department of Electrical and Electronics Engineering

Lesson plan of faculty member for the academic year 2015–16

Class: III B Tech

Branch: EEE

Semester: I

Subject: Power Systems-II

Lectures per week: 4+1 (Tutorial)

Lecture number	Topic to be covered	Date(s)
<b>UNIT-I:Transmission line parameters</b>		
1	Types of conductors	13 June 2016
2	Calculation of resistance for solid conductors	14 June 2016
3	Calculation of inductance for 1-Phase Transmission line	15 June 2016
4	Calculation of inductance for 3-Phase Transmission line Symetrical and Asymetrical conductor configuration	17 June 2016
5	Tutorials (G1, G2, G3) - Numerical problems of previous topics	13, 15, 17 June 2016
6	Transposition of lines	20 June 2016
7	Calculation of inductance of composite conductors	21 June 2016
8	Calculation of inductance of 3-phase double circuit lines	22 June 2016
9	Concept of GMR and GMD	24 June 2016
10	Tutorials (G1, G2, G3) - Numerical problems of previous topics	20, 22, 24 June 2016
11	Capacitance calculations for 1-Phase transmission line	27 June 2016
12	Capacitance calculations for 3-Phase transmission line with symmetrical and asymmetrical spacing	28 June 2016
13	Capacitance calculations for 3-Phase transmission line with double circuit lines	29 June 2016
14	Effect of earth on the calculation of capacitance	01 July 2016
15	Tutorials (G1, G2, G3) - Numerical problems of previous topics	27, 29 June ,01 July 2016
<b>UNIT 2:Performance of short, medium and long length transmission lines</b>		
16	Classification of Transmission lines	04 July 2016
17	Short transmission line model, Determination of regulation , efficiency and ABCD constants	05 July 2016
18	Medium transmission lines:Nominal-T model, Determination of regulation , efficiency and ABCD constants	08 July 2016
19	Tutorials (G1, G3) -Numerical problems of previous topics	04, 08 July 2016
20	Medium transmission lines:Nominal - $\Pi$ model, Determination of regulation , efficiency and ABCD constants	11 July 2016
21	Medium transmission lines:End condenser model, Determination of regulation , efficiency and ABCD constants	12 July 2016
22	Long transmission line model using regorous solution	13 July 2016
23	Surge impedance and SIL of long lines	15 July 2016
24	Tutorials (G1, G2, G3) - Numerical problems of previous topics	11, 13, 15 July 2016
25	Incident wave , reflected wave ,refracted wave	18 July 2016
26	Wave length and velocity of propagation of waves	19 July 2016
27	Representation of long lines	20 July 2016
28	Equivalent-T and $\square$ network models	22 July 2016
29	Tutorials (G1, G2, G3) - Numerical problems of previous topics	18, 20, 22 July 2016

<b>UNIT 3: Power system transients and Factors Governing the Performance of Transmission Line</b>		
30	Types of system transients	25 July 2016
31	Numerical problems	26 July 2016
32	Traveling or propagation of surges, Attenuation, distortion, reflection and refraction coefficients	27 July 2016
33	Termination of lines with different types of conditions: Open circuited line, Short circuited line and T-junction	29 July 2016
34	Tutorials (G1, G2, G3) - Numerical problems of previous topics	25, 27, 29 July 2016
35	Lumped reactive junctions, Bewley's lattice diagrams	02 August 2016
36	Numerical problems	03 August 2016
37	Numerical problems	05 August 2016
38	Tutorials (G2, G3) - Numerical problems of previous topics	03, 05 August 2016
39	Skin and Proximity effects	16 August 2016
40	Ferranti effect-charging currents, Effect on regulation of the transmission line, shunt compensation	17 August 2016
41	Corona-description of phenomenon	19 August 2016
42	Tutorials (G2, G3) - Numerical problems of previous topics	17, 19 August 2016
43	Critical disruptive voltage	22 August 2016
44	Factors affecting corona	23 August 2016
45	Power loss, Radio interference	24 August 2016
46	Advantages and disadvantages of corona	26 August 2016
47	Tutorials (G1, G2, G3) - Numerical problems of previous topics	22, 24, 26 August 2016
<b>UNIT 4: Over head line insulators and Sag and tension calculations</b>		
48	Types of insulators	29 August 2016
49	Voltage distribution, calculation of string efficiency	30 August 2016
50	Method of improvement for String efficiency	31 August 2016
51	Numerical problems	02 September 2016
52	Tutorials (G1, G2, G3) - Numerical problems of previous topics	29, 31 August, 02 September 2016
53	Capacitance grading and static shielding	06 September 2016
54	Calculations with equal height of towers	07 September 2016
55	Numerical problems	09 September 2016
56	Tutorials (G2, G3) - Numerical problems of previous topics	07, 09 September 2016
57	Sag and tension calculations with unequal height of towers	19 September 2016
58	Numerical problems	20 September 2016
59	Effect of wind and ice on weight of conductor	21 September 2016
60	Stringing chart and sag templates and its applications	23 September 2016
61	Tutorials (G1, G2, G3) - Numerical problems of previous topics	19, 21, 23 September 2016
62	Numerical problems	26 September 2016
<b>UNIT 5: Under ground cables</b>		
63	Types of cables	27 September 2016
64	Types of insulating materials	28 September 2016
65	Tutorials (G1, G2) - Numerical problems of previous topics	26, 28 September 2016
66	Calculation of insulation resistance, Calculations of stress in insulating cable	03 October 2016
67	Capacitance of single and three core belted cables	04 October 2016
68	Grading of cables: capacitance grading, Intersheath grading	05 October 2016
69	Tutorials (G1, G2) - Numerical problems of previous topics	03, 05 October 2016
70	HV cables	28 October 2016
71	Tutorial (G3) - Numerical problems of previous topics	28 October 2016
72	Numerical problems	31 October 2016

73	Revision	01 November 2016
74	Revision	02 November 2016
75	Tutorials (G1, G2) -Revision	31 October ,02 November 2016

**Text books:**

1. Electrical Power System- by C L Wadhwa, New Age International Publications(P) limited.
2. Electrical Power Systems, P S R Murthy, B S Publications.
3. A Text book of power system engineering, R K Rajput, Laxmi Publications (P) limited.
4. Power System Analysis and design by B.R. Gupta S.Chand and company limited.
5. Power System Analysis by Hadi Saadat, TMH Edition.
6. Modern Power System Analysis by I J Nagaraj & D P Kothari,THM.
7. A Text book on power systems Engineering by M L Soni, P V Gupta, U S Batnagar, A Charkrabarthy Dhanpat Rai & Co Pvt.Ltd.

Name and Signature of the staff member: Mr. G Karunakar Reddy      ---

Name and signature of Head of the Department: Ms. Y Mastanamma      ---