Bhoj Reddy Engineering College for Women

Hyderabad

LESSON PLAN FOR THE ACADAMIC YEAR **2016-17**

Name of the Faculty Member: **MOHAMMED HAFEEZUDDIN** Department: **EEE**

Class: **IV B.Tech, I Semester** Branch:**EEE**

Subject: **High Voltage Engineering** No. of lectures per week: **4+1**

Lecture number	Topic to be covered	Date
Unit-1 :Introduction to High Voltage Engineering		
1	Introduction and Applications of High Voltage Engineering	13 June 2016
2	Electric Filed Stress- Gas, Liquid and Solid dielectric insulating media	14 June 2016
3	Estimation and control of Electric Stress	16 June 2016
4	Numerical Methods for Elec Filed Computation	18 June 2016
5	Tutorial G1,G3,G2 - Problems of Electric Filed Intensity	13, 17 & 18 June 2016
6	Surge Voltages and their Distribution	20 June 2016
7	Control of Surge voltages	21 June 2016
8	Applications of Insulating Material in Transformers, Rotating Machines	23 June 2016
9	Applications of Insulating Material in Circuit Breakers, Cable power capacitors and Bushings	25 June 2016
10	Tutorial G1,G3,G2 - Problems on Electric Filed Computation	20, 24 & 25 June 2016
Unit-2: Breakdown in Di-electric Materials		
11	Gases as insulating media – Collision process – ionization process	27 June 2016
12	Towsends criteria of breakdown in gases	28 June 2016
13	Explanation of Paschen's Law	30 June 2016
14	Liquid as Insulator- Pure and Commercial Liquids	02 June 2016
15	Tutorial G1,G3,G2 - Problems on Breakdown of Gases	27 June,01&02 July 2016
16	Breakdown in Pure and Commercial Liquids	04 July 2016
17	Intrinsic Breakdown, Electromechanical Breakdown, Thermal Breakdown	05 July 2016
18	Breakdown of Solid Dielectrics	09 July 2016
19	Tutorial G1,G3,G2 - Problems on Breakdown of Liquids	4, 8 & 9 July 2016
20	Breakdown in composite dielectrics	11 July 2016
21	Problems on breakdown in solid and composite media	12 July 2016
Unit-3 : Generation & Measurement of High voltages and Currents		
22	Generation of High Direct Current Voltages	14 July 2016
23	Generation of High Alternating Current Voltages	16 July 2016
24	Tutorial G1,G3,G2 - Problems on Breakdown of Solids and Composite Dielectrics	11,15 & 16 July 2016
25	Generation of Impulse Voltages	18 July 2016
26	Generation of Impulse Currents	19 July 2016

27	Tripping and Control of Impulse generators	21 July 2016
28	Measurement of High Direct Current Voltages	23 July 2016
29	Tutorial G1,G3,G2 - Problems on Generation of Voltages	18, 22 & 23 July 2016
30	Measurement of High AC voltages and Impulse	25 July 2016
31	Measurement of High Currents – a.Direct Current	26 July 2016
32	Measurement of High Currents – b. Alternating Current	28 July 2016
33	Measurement of High Currents – c. Impulse	30 July 2016
34	Tutorial G1,G3,G2 - Problems on Measurement of Voltages	25,29 & 30 July 2016
35	Oscilloscope for Impulse Voltage measurement	01 August 2016
36	Oscilloscope for Impulse Current measurement	02 August 2016
37	Numerical Problems	04 August 2016
38	Numerical Problems	06 August 2016
39	Tutorial G1,G3 G2 - Problems on generation of Currents	01,05 & 06 August 2016
Unit-4 : Over Voltages and Insulation Coordination		
40	Natural Causes for over voltages	16 August 2016
41	Lightening Phenomenon	18 August 2016
42	Over Voltage due to switching surges	20 August 2016
43	Tutorial G3,G2 - Problems on over voltages	19, 20 August 2016
44	System Faults	22 August 2016
45	Abnormal Fault Conditions	23 August 2016
46	Principles of Insulation coordination on High Voltages	25 August 2016
47	Insulation coordination on High Voltage power systems	27 August 2016
48	Tutorial G1,G3,G2 - Problems on faults	22,26 & 27 August 2016
49	Principles of Insulation coordination on Extra High Voltages	29 August 2016
50	Insulation coordination on Extra High Voltage Power systems	30 August 2016
51	Problems on Insulation coordination of High voltages	01 September 2016
52	Problems on Insulation coordination of Extra High voltages	03 September 2016
53	Tutorial G1,G3,G2 - Problems on Insulation Coordination	29 August, 02 & 03 September 2016
54	Problems on faults and abnormal fault conditions	06 September 2016
Unit – 5 : Testing of Materials & Electrical Apparatus		
55	Measurement of DC Resistivity	08 September 2016
56	Measurement of Dielectric Constant	10 September 2016
57	Tutorial G3, G2 - Problems on Measurement of Resistivity	09 ,10 September 2016
58	Measurement of Loss Factor	13 September 2016
59	Partial discharge Measurements	15 September 2016
60	Testing of Insulators	17 September 2016
61	Problems on Measurement of dielectric constant and loss factor	16,17 September 2016
62	Testing of Bushings	19 September 2016
63	Testing of Bushings continued	20 September 2016
64	Testing of Isolators	22 September 2016
65	Testing of Circuit Breakers	24 September 2016
66	Tutorial G1,G3,G2 - Problems on Testing	19 , 23 & 24 September 2016
67	Testing of Cables	26 September 2016

68	Testing of Transformers	27 September 2016
69	Testing of Transformers	29 September 2016
70	Problems of Testing of Cables	01 October 2016
71	Tutorial G1,G2 - Problems on Testing of Transformers	26 September & 01 October 2016
72	Problems on Testing of Transformers	3 October 2016
73	Testing of Surge Arrestors	4 October 2016
74	Tutorial G1 - Miscellaneous problems on Testing	3 October 2016
75	Radio Interference Measurements	27 October 2016
76	Radio Interference Measurements	29 October 2016
77	Tutorial G3,G2 - Problems of Previous Question Papers	28, 29October 2016
78	Revision Class- 1	31 October 2016
79	Revision Class - 2	01 November 2016
80	Discussion on presentation of HVE in Semester exams	3 November 2016
81	Tutorial G1 - Discussion on presentation of HVE in Semester exams	31 October 2016

Text Books:

1. High Voltage Engineering, M.S.Naidu and V. Kamaraju, TMH Publications
2. High Voltage Engineering, C.L Wadhwa, New Age Internationals(P) Limited

Name and signature of the faculty: **Mohammed Hafeezuddin** ----

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