Bhoj Reddy Engineering College for Women: Hyderabad
Department of Electrical and Electronics Engineering
Lesson plan of faculty member for the academic year 2020–21

Class: III B Tech Branch-Section: EEE Semester: I
Subject: High Voltage Engineering (HVE) Lectures per week:3+0(Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Breakdown in Gases, Liquid and Solid Insulating Materials		
1	Introduction	2 September 2020
2	Ionization processes and de-ionization processes	2 September 2020
3	Types of Discharge	4 September 2020
4	Gases as insulating materials	9 September 2020
5	Breakdown in Uniform gap and Breakdown in non-uniform gaps	10 September 2020
6	Townsend's theory	11 September 2020
7	Streamer mechanism	16 September 2020
8	Corona discharge	17 September 2020
9	Breakdown in pure and commercial liquids	18 September 2020
10	Solid dielectrics and composite dielectrics	23 September 2020
11	Intrinsic breakdown	24 September 2020
12	Electromechanical breakdown and thermal breakdown	25 September 2020
13	Partial discharge	30 September 2020
14	Applications of insulating materials	1 October 2020
UNIT II: Generation of High Voltages		
15	Generation of high voltages	7 October 2020
16	Generation of high D. C Voltages	8 October 2020
17	Generation of high A. C Voltages	9 October 2020
18	Generation of impulse voltages and currents	14 October 2020
19	Tripping and control of impulse generators	15 October 2020
UNIT III: Measurements of High Voltages and Currents		
20	Peak voltage	16 October 2020
21	Impulse voltage measurement method	28 October 2020
22	High direct current measurement method	29 October 2020
23	Cathode ray oscillographs for impulse voltage measurement method	11 November 2020
24	Cathode ray oscillographs for current measurement method	12 November 2020
25	Measurement of dielectric constant and loss factor	13 November 2020
26	Partial discharge measurements	18 November 2020
27	Revision	19 November 2020
UNIT IV: LIGHTNING AND SWITCHING OVER-VOLTAGES		
28	Charge formation in clouds	20 November 2020
29	Stepped leader and Dart leader	25 November 2020
30	Lightning Surges	26 November 2020
31	Switching over voltages	27 November 2020
32	Protection against over-voltages	2 December 2020

33	Surge diverters and Surge modifiers	3 December 2020
34	Revision	4 December 2020
UNIT V: High Voltage Testing of Electrical Apparatus		
35	High Voltage Testing of Electrical Apparatus and High Voltage Laboratories Various standards for HV Testing of electrical apparatus, IS, IEC standards,	9 December 2020
36	Testing of insulators and bushings and Testing of isolators	10 December 2020
37	Testing of circuit breakers and Testing of cables	11 December 2020
38	Testing of power transformers and Testing of Some high voltage equipment	16 December 2020
39	High voltage laboratory layout	17 December 2020
40	Indoor and outdoor laboratories	18 December 2020
41	Testing facility requirements and Safety precautions in H. V. Labs	23 December 2020
42	Assignment Test	24 December 2020
43	Revision	30 December 2020
44	Revision	31 December 2020

Text Books:

1. M. S. Naidu and V. Kamaraju, “High Voltage Engineering”, McGraw Hill Education, 2013.
2. C. L. Wadhwa, “High Voltage Engineering”, New Age International Publishers, 2007.
3. D. V. Razevig (Translated by Dr. M. P. Chourasia), “High Voltage Engineering Fundamentals”, Khanna Publishers, 1993.
4. E. Kuffel, W. S. Zaengl and J. Kuffel, “High Voltage Engineering Fundamentals”, Newnes Publication, 2000.
5. R. Arora and W. Mosch “High Voltage and Electrical Insulation Engineering”, John Wiley & Sons, 2011.
6. Various IS standards for HV Laboratory Techniques and Testing

Name and signature of the faculty: Ms S Mayuri ----

Name and signature of Head of the Department: Ms R Manju Bhargavi ----