

Lesson plan

Name of the faculty : Mr. Manoj Bansal

Discipline : Electrical & Electronics Engineering

Semester : 5th & 7th

Subject : High Voltage Engineering (Paper Code: PEC-EE-07-G)

Lesson Plan Duration : 15 weeks (From August, 2020 to November 2020)

Work Load (Lecture/ Practical) per week (in hours): Lecture-02, Practical-01

Week	Theory		Laboratory	
	Lecture day	Topic	Lab Week	Experiment Name
1 st	1 st	Conduction and Breakdown in Gases: Collision Process, Ionization Processes,	1 st	NO LAB FOR THIS SUBJECT
	2 nd	Townsend's Current Growth Equation, Current Growth in the Presence of Secondary Processes,		
2 nd	1 st	Townsend's Criterion for Breakdown, Experimental Determination of Coefficients α and γ ,	2 nd	
	2 nd	Breakdown in Electronegative Gases, Time Lags for Breakdown,		
3 rd	1 st	Streamer Theory of Breakdown in Gases, Paschen's Law	3 rd	
	2 nd	Breakdown in Non-Uniform Fields and Corona Discharges		
4 th	1 st	Conduction and Breakdown in Liquid Dielectrics: Liquids as Insulators, Pure Liquids and Commercial Liquids	4 th	

	2 nd	Conduction and Breakdown in Pure Liquids, Conduction and Breakdown in Commercial Liquids.		
5 th	1 st	Breakdown in Solid Dielectrics: Introduction, Intrinsic Breakdown	5 th	
	2 nd	Electromechanical Breakdown, Thermal Breakdown		
6 th	1 st	Generation of High Voltages and Currents: Generation of High Direct Current Voltages,	6 th	
	2 nd	Generation of High Alternating Voltages, Generation of Impulse Voltages, Generation of Impulse Currents		
7 th		Sessional Examination-I		
8 th	1 st	Tripping and Control of Impulse Generators	8 th	
	2 nd	Measurement of High Voltages and Currents: Measurement of High Direct Current Voltages, Measurement of High AC and Impulse Voltages		
9 th	1 st	Measurement of High Currents - Direct, Alternating and Impulse	9 th	
	2 nd	Cathode Ray Oscillographs for Impulse Voltage and Current Measurements.		
10 th	1 st	Overvoltage Phenomenon and Insulation Coordination in Electric Power Systems: National Causes for Overvoltages - Lightning Phenomenon,	10 th	
	2 nd	Overvoltage due to Switching Surges, System Faults and Other Abnormal		
11 th	1 st	Principles of Insulation Coordination on High		

		Voltage and Extra High Voltage Power Systems.		
	2 nd	Non-Destructive Testing of Materials and Electrical Apparatus: Introduction, Measurement of Dielectric Constant		
12 th	1 st	Loss Factor, Partial Discharge Measurements		
	2 nd	HV Testing of Electrical Apparatus: Testing of Insulators and Bushings,		
13 th	1 st	Testing of Isolators and Circuit Breakers		
	2 nd	Testing of Cables,		
14 th	1 st	Testing of Transformers		
	2 nd	Testing of Surge Arrestors		
15 th	1 st	Radio Interference Measurements		
	2 nd	Testing of HVDC Valves and Equipment		
16 th		Sessional-II + Activity		

Faculty Signature