

LESSON PLAN

Faculty : SH. PARDEEP KUMAR
 Discipline : ELECTRICAL ENGINEERING
 Semester : 6th
 Subject : POWER SYSTEM PROTECTION
 Duration : 15 WEEKS(20/01/2025 toApril 2025)
 (Lecture/ Practical) per week (in hours) : Theory- 03
 : Practical- 2

Week	Theory		Practical	
	Lecture Day	Topic	Practical Day	Topic
1st	1st	Common type of faults in both overhead and underground systems	1st	Identify various switchgears installed in the laboratory and their specification.
	2nd	Introduction to symmetrical/unsymmetrical faults, Single line to ground fault, double line to ground fault.		
	3rd	3-phase to ground fault open circuit, simple problems relating to fault finding.		
2nd	1st	(a) Introduction to the Protective Gear and its purpose (b) Different Components used at the Protective Gear and their Functions.		Test HRC fuse by performing the load test
	2nd	(a) Difference between switch, isolator and circuit breakers (b) Function of isolator and circuit breaker.		
	3rd	(a) Making capacity and breaking capacity of circuit breaker (b) Numerical problems related to Making and Breaking capacity of a Circuit Breaker		
3rd	1st	Introduction to the methods of Arc Extinction and their Principle of working	1st	Perform the overload and short circuit test of MCB as per IS specifications
	2nd	(a) Introduction to the types of Circuit breakers (b) Construction, Working, Application and Limitations of Oil circuit breaker		
	3rd	Construction, Working and Limitations of Bulk Oil Circuit Breaker (a) Construction, Working and Limitations of Minimum Oil circuit breaker (b) Difference between Minimum oil circuit breaker and Bulk Oil Circuit Breaker		
4th	1st	Construction, Working, Application and Limitations of SF6 Circuit Breaker	1st	Plot the time-current characteristics of Kit-Kat fuse wire
	2nd	Construction, Working, Application and Limitations of Air circuit breaker		
	3rd	Construction, Working and Application of an MCB for distribution and Transmission system To give the Assignment No-01		

	4th	Construction, Working and Application of ELCB For distribution and Transmission system		
5th	1st	Construction, Working and Application of ELCB For distribution and Transmission system	1st	Plot the time current characteristics of over current relay
	2nd	Fuses: function of fuse. Types of fuses, HV and LV fuses, Rewire-able Fuse		
	3rd	Cartridge fuse, HRC fuse		
6th	1st	Purpose of earthing, Introduction to the methods of earthing, Methods of reducing earth resistance.	1st	Power measurement by using CTs and PTs
	2nd	Equipment earthing, Substation earthing, system earthing as per Indian Electricity rules		
	3rd	Construction and Working of Electromagnetic relay, thermal relay		
7th	1st	Induction type over-current, earth fault relays, instantaneous over current	1st	(a) Technical Quiz for Experiment no. 03 and 04 (b) Viva Voce and Practical file Evaluation
	2nd	Directional over-current,		
	3rd	differential relays, their functions		
8th	1st	Distance relays, their functions	1st	Earthing of different equipment/Main Distribution Board and
	2nd	Idea of static relays and their applications		
	3rd	Test of Chapter No 03		
9th	1st	Relays for generator and transformer protection	1st	Perform the overload and short circuit test of MCB as per IS specifications
	2nd	Buchholz relay protection for Transformer		
	3rd	Protection of feeders and bus bars: Over current Protection earth fault protection		
10th	1st	Distance protection for transmission system	1st	(a) Technical Quiz for Experiment no. 05 and 06 (b) Viva Voce and
	2nd	Relays for motor protection		
	3rd	Quiz 02		
11th	1st	Evaluation of Assignment-02 and Technical Quiz	1st	Plot the time-current characteristics of Kit-Kat fuse wire
	2nd	Protection of system against over voltages, causes of over voltages,		
	3rd	Utility of Ground Wire Lightning arrestors, rod gap, horn gap.		
12th	1st	Metal Oxide type Lightning Arrestor	1st	Taking reading of current on any LT line with clip on meter
	2nd	Transmission Line and substation protection against over-voltages and lightning		
	3rd	Test of Chapter No 05		
13th	1st	Technical Quiz No. 03	1st	(a) Technical Quiz for Experiment no. 07 and 08 (b) Viva Voce and
	2nd	Evaluation of Assignment-03 and Technical Quiz 03		
	3rd	Revision unit-1		
14th	1st	Technical Quiz No. 03	1st	Study of different types of Tarriffs with special reference to the Haryana state Electricity board
	2nd	Evaluation of Assignment-03 and Technical Quiz 03		
	3rd	Revision unit-1		
15th	1st	Revision unit-2	1st	(a) Study of different types of circuit breakers and isolators
	2nd	Revision unit-3		
	3rd	Revision unit-4,5		