

Lesson Plan: SGPD

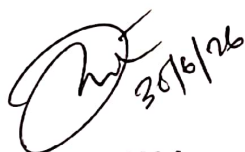
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Semester: (Winter 2026) (5th)

Date: 01-07-2026 to 05-11-2026

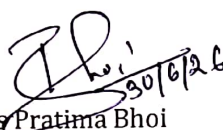
Week	DAYS	Topic
Week 1	1	Necessity and Functions of Protective System
	2	Normal and Abnormal Operating Conditions
	3	Types of Faults and Their Causes
Week 2	4	Protection Zones and Backup Protection
	5	Short Circuit Fault Calculations in Lines Fed by Generators Through Transformers
	6	Need of Current Limiting Reactors and Their Arrangements
Week 3	7	Isolators – Vertical Break, Horizontal Break and Pantograph Type
	8	HRC Fuses – Construction, Working, Characteristics and Applications
	9	Arc Formation Process and Methods of Arc Extinction
Week 4	10	Arc Voltage, Recovery Voltage, Restriking Voltage and RRRV
	11	HT Circuit Breakers – SF6 Circuit Breaker
	12	HT Circuit Breakers – Vacuum Circuit Breaker
Week 5	13	LT Circuit Breakers – ACB, MCB, MCCB and ELCB
	14	Selection of LT and HT Circuit Breakers (Ratings)
	15	Selection of MCCB for Motors and Gas Insulated Switchgear
Week 6	16	Fundamental Quality Requirements of Protective Relays
	17	Basic Relay Terminology
	18	Classification of Protective Relays
Week 7	19	Electromagnetic Relays – Attracted Armature and Solenoid Type
	20	Electromagnetic Relays – Watt-hour Meter Type
	21	Thermal Relay and Static Relay
Week 8	22	Overcurrent Relay – Time Current Characteristics
	23	Microprocessor Based Overcurrent Relay
	24	Distance Relay – Principle and Operation
Week 9	25	Directional Relay – Need and Operation
	26	Current Differential Relay
	27	Voltage Differential Relay
Week 10	28	Alternator Protection – Faults and Differential Protection
	29	Overcurrent, Earth Fault, Overheating and Field Failure Protection
	30	Reverse Power Protection
Week 11	31	Transformer Protection – Faults and Differential Protection

	32	Overcurrent, Earth Fault and Overheating Protection
	33	Buchholz Relay – Construction and Operation
Week 12	34	Buchholz Relay – Merits, Demerits and Limitations of Differential Protection
	35	Motor Faults and Short Circuit Protection
	36	Overload Protection and Single Phasing Preventer
Week 13	37	Bus-bar – Faults and Protection
	38	Bus-bar Differential Protection
	39	Fault Bus Protection
Week 14	40	Transmission Line Faults
	41	Overcurrent Protection of Transmission Lines
	42	Distance and Pilot Wire Protection
Week 15	43	Review of Power System Protection
	44	Numerical Problems and Case Studies
	45	Revision and End Semester Preparation



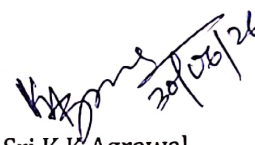
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