

LESSON PLAN-2022-2023
SWAMI VIVEKANANDA SCHOOL OF ENGG & TECH, BBSR

Discipline- ELECTRICAL	Semester- 6TH	Name of teaching faculty- KAILASH SENAPATI
SUBJECT- SWITCH GEAR AND PROTECTIVE DEVICES	No of days/ per week class allotted-	SEM From date-20.02.2023 No of weeks-
Week	Class day	Theory Topics
4TH	2/20/2023	1.1 Essential Features of switchgear.1.2 Switchgear Equipment
	2/21/2023	1.2 Switchgear Equipment
	2/22/2023	1.3 Bus-Bar Arrangement
	2/23/2023	1.4 Switchgear Accommodation.
	2/24/2023	1.5 Short Circuit.
	2/25/2023	1.6 Short circuit.1.7 Faults in a power system
	2/27/2023	2.1 Symmetrical faults on 3-phase system.
	2/28/2023	2.2 Limitation of fault current
1ST	3/01/2023	2.3 Percentage Reactance.2.4 Percentage Reactance and Base KVA
	3/02/2023	Problems on percentage reactance
	3/03/2023	2.5 Short – circuit KVA
	3/04/2023	2.6 Reactor control of short circuit currents
2ND	3/06/2023	2.7 Location of reactors
	3/07/2023	2.8 Steps for symmetrical Fault calculations.
	3/09/2023	2.9 Solve numerical problems on symmetrical fault.
	3/10/2023	problems on symmetrical fault
	3/11/2023	3.1 Desirable characteristics of fuse element.3.2 Fuse Element materials
3RD	3/13/2023	3.3 Important terms used for fuses
	3/14/2023	Types of Fuses and important terms used for fuses
	3/15/2023	3.4 Low and High voltage fuses.
	3/16/2023	3.5 Current carrying capacity of fuse element.3.6 Difference Between a Fuse and Circuit Breaker
	3/17/2023	4.1 Definition and principle of Circuit Breaker.4.2 Arc phenomenon and principle of Arc Extinction
	3/18/2023	4.3 Methods of Arc Extinction
4TH	3/20/2023	4.4 Definitions of Arc voltage,Re-striking voltage and Recovery voltage,4.5 Classification of circuit Breakers.
	3/21/2023	4.6 Oil circuit Breaker and its classification,4.7 Plain brake oil circuit breaker
	3/22/2023	4.8 Arc control oil circuit breaker
	3/23/2023	4.9 Low oil circuit breaker,4.10 Maintenance of oil circuit breaker
	3/24/2023	4.11 Air-Blast circuit breaker and its classification

	3/25/2023	4.12 Sulphur Hexa-fluoride (SF6) circuit breaker
5TH	3/27/2023	4.13 Vacuum circuit breakers.4.14 Switchgear component
	3/28/2023	4.15 Problems of circuit interruption.
	3/29/2023	4.16 Resistance switching.
	3/31/2023	4.17 Circuit Breaker Rating
1ST	4/3/2023	5.1 Definition of Protective Relay.5.2 Fundamental requirement of protective relay
	4/4/2023	5.3 Basic Relay operation, 5.3.1. Electromagnetic Attraction type
	4/5/2023	5.3.2. Induction type relay
	4/6/2023	5.5 Definition -5.5.1. Pick-up current.5.5.2. Current setting.5.5.3. PS M.5.5.4. Time setting Multiplier
	4/8/2023	5.6 Classification of functional relays,5.7 Induction type over current relay (Non-directional)
2ND	4/10/2023	5.8 Induction type directional power relay,5.9 Induction type directional over current relay
	4/11/2023	5.10 Differential relay,5.10.1. Current differential relay
	4/12/2023	5.10.2. Voltage balance differential relay.5.11 Types of protection
	4/13/2023	6.1 Protection of alternator.
	4/15/2023	6.2 Differential protection of alternators.
3RD	4/17/2023	6.3 Balanced earth fault protection.
		6.4 Protection systems for transformer
	4/18/2023	6.5 Buchholz relay.
	4/19/2023	6.6 Protection of Bus bar.
	4/20/2023	6.7 Protection of Transmission line.6.8 Different pilot wire protection (Merz-price voltage Balance system)
	4/21/2023	6.9 Explain protection of feeder by over current and earth fault relay.
	4/22/2023	7.1. Voltage surge and causes of over voltage,7.2. Internal cause of over voltage.
4TH	4/24/2023	7.3. External cause of over voltage (lighting),7.4. Mechanism of lightning discharge
	4/25/2023	7.5. Types of lightning strokes.7.6. Harmful effect of lightning
	4/26/2023	7.7. Lightning arresters and Type of lightning Arresters.
	4/27/2023	7.7.1. Rod-gap lightning arrester.7.7.2. Horn-gap arrester.
	4/28/2023	7.7.3. Valve type arrester.7.8. Surge Absorber
	4/29/2023	8. 1 Advantage of static relay.
1ST	5/1/2023	-DO-
	5/2/2023	8. 2 Instantaneous over current relay.
	5/3/2023	-DO-
	5/4/2023	8. 3 Principle of IDMT relay
	5/5/2023	-DO-
HOD		PRINCIPAL