

LESSON PLAN(SUMMER-2026)

VENUS GROUP OF EDUCATIONAL & RESEARCH INSTITUTES,BAHANAGA,BALASORE-756042

Discipline:Electrical Engineering		Semester:6 th	Name of the teaching faculty: Prakas Chandra Dash	
Subject: Switch Gear & Protective Device		No of days per week class allotted:5	Semester from date:22/12/2025 to date:18/04/2026, weeks: 12	No of
1	1st	1st	Introduction to Switchgear	
2		2nd	Essential Features of switchgear.	
3		3rd	Switchgear Equipment.	
4		4th	Bus-Bar Arrangement.	
5		5th	Switchgear Accommodation.	
6	2nd	1st	Short Circuit.	
7		2nd	Short circuit.	
8		3rd	Faults in a power system	
9		4th	Fault Calculation	
10		5th	Symmetrical faults on 3-phase system.	
11	3rd	1st	Limitation of fault current.	
12		2nd	Percentage Reactance.	
13		3rd	Percentage Reactance and Base KVA.	
14		4th	Short – circuit KVA.	
15		5th	Reactor control of short circuit currents.	
16	4th	1st	Location of reactors.	
17		2nd	Steps for symmetrical Fault calculations.	
18		3rd	Solve numerical problems on symmetrical fault.	
19		4th	Desirable characteristics of fuse element.	
20		5th	Fuse Element materials	
21	5th	1st	Types of Fuses and important terms used for fuses	
22		2nd	Low and High voltage fuses	
23		3rd	Current carrying capacity of fuse element	
24		4th	Difference Between a Fuse and Circuit Breaker	
25		5th	Definition and principle of Circuit Breaker.	
26		1st	Arc phenomenon and principle of Arc Extinction.	
27		2nd	Methods of Arc Extinction	

28	6th	3rd	Definitions of Arc voltage, Re-striking voltage and Recovery
29		4th	Classification of circuit Breakers.
30		5th	Oil circuit Breaker and its classification.
31	7th	1st	Plain brake oil circuit breaker
32		2nd	Arc control oil circuit breaker.
33		3rd	Low oil circuit breaker.
34		4th	Maintenance of oil circuit breaker.
35		5th	Air-Blast circuit breaker and its classification.
36	8th	1st	Sulphur Hexa-fluoride (SF6) circuit breaker.
37		2nd	Vacuum circuit breakers.
38		3rd	Switchgear component
39		4th	Problems of circuit interruption
40		5th	Resistance switching.
41	9th	1st	Circuit Breaker Rating.
42		2nd	Definition of Protective Relay
43		3rd	Fundamental requirement of protective relay
44		4th	Electromagnetic Attraction type
45		5th	Definition of following important terms
46	10th	1st	Pick-up current.
47		2nd	Classification of functional relays
48		3rd	Induction type over current relay (Non-directional)
49		4th	Induction type directional power relay.
50		5th	Induction type directional over current relay
51	11th	1st	Protection of alternator.
52		2nd	Differential protection of alternators.
53		3rd	Balanced earth fault protection
54		4th	Protection systems for transformer.
55		5th	Voltage surge and causes of over voltage
56	12th	1st	Internal cause of over voltage
57		2nd	External cause of over voltage (lighting)
58		3rd	Mechanism of lightning discharge.
59		4th	Advantage of static relay.
60		5th	Principle of IDMT relay