

LESSON PLAN

Name of the Institute:		C. V. RAMAN POLYTECHNIC
Department:		ELECTRICAL ENGINEERING
Semester/Division/Branch:		6 th SEM/EE
Subject Name with code:		SWITCH GEAR AND PROTECTIVE DEVICE (TH-2)
Total No. of Class (Required):		60L +15P=75
Faculty Name:		RASHMI RANJAN MARTHA
Class No.	<i>Brief description of the Topic/Chapter to be taught</i>	Remarks
1	Essential Features of switchgear	
2	Switchgear Equipment.	
3	Bus-Bar Arrangement	
4	Switchgear Accommodation.	
T1	TUTORIAL CLASS	
5	Short Circuit.	
6	Faults in a power system.	
7	Symmetrical faults on 3-phase system	
8	Limitation of fault current.	
T2	TUTORIAL CLASS	
9	Percentage Reactance.	
10	Percentage Reactance and Base KVA	
11	Short circuit KVA	
12	Location of reactors.	
T3	TUTORIAL CLASS	
13	Steps for symmetrical Fault calculations	

14	Solve numerical problems on symmetrical fault	
15	Low and High voltage fuses.	
16	Current carrying capacity of fuse element.	
T4	TUTORIAL CLASS	
17	Difference Between a Fuse and Circuit Breaker.	
18	Definition and principle of Circuit Breaker.	
19	Arc phenomenon and principle of Arc Extinction	
20	Methods of Arc Extinction.	
T5	TUTORIAL CLASS	
21	Classification of circuit Breakers.	
22	Oil circuit Breaker and its classification.	
23	Method of ARC Extinction	
24	Plain brake oil circuit breaker	
T6	TUTORIAL CLASS	
25	Arc control oil circuit breaker	
26	Low oil circuit breaker.	
27	Maintenance of oil circuit breaker	
28	Air-Blast circuit breaker and its classification.	
T7	TUTORIAL CLASS	
29	Sulphur Hexa-fluoride (SF ₆) circuit breaker	
30	Vacuum circuit breakers.	
31	Switchgear component	
32	Problems of circuit interruption	
T8	TUTORIAL CLASS	
33	Resistance switching	
34	Circuit Breaker Rating	
35	Definition of Protective Relay	

36	Fundamental requirement of protective relay.	
T9	TUTORIAL CLASS	
37	Basic Relay operation	
38	Electromagnetic Attraction type	
39	Definition of following important terms	
40	Pick-up current	
T10	TUTORIAL CLASS	
41	Current setting.	
42	Time setting Multiplier.	
43	Classification of functional relays	
44	Induction type over current relay (Non-directional)	
T11	TUTORIAL CLASS	
45	Induction type directional power relay.	
46	Induction type directional over current relay	
47	Differential relay	
48	Current differential relay	
T12	TUTORIAL CLASS	
49	Voltage balance differential relay	
50	Types of protection	
51	Protection of alternator	
52	Differential protection of alternators.	
T13	TUTORIAL CLASS	
53	Balanced earth fault protection	
54	Protection systems for transformer	
55	Buchholz relay.	
56	Protection of Bus bar	
T14	TUTORIAL CLASS	

57	Protection of Transmission line	
58	Rod-gap lightning arrester	
59	Horn-gap arrester	
60	Valve type arrester, Surge Absorber	
T15	TUTORIAL CLASS	

Rachminanjan Martha
Signature of the Faculty

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Signature of the H.O.D