MAHAMAYA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCE , NUAPADA

LESSION PLAN

DISCIPLINE : Elect. Engg.	SEMESTER : 6TH SEM	NAME OF TEACHING FACULTY : BARADA PRASAD SAHU
SUBJECT :S.G.P.D.	NO. OF DAYS /PER WEEK CLASS ALLOTED	SEMESTER FROM Dt.13/02/23 TO Dt.23/05/23 NO OF WEEKS : 15

WEEK	CLASS DAY	DATE	THEORY / PRACTICAL TOPICS SUBJECT	SIGN	REMARKS
01			**Introduction To Switchgear**		
	1st		1.1 Essential Features of switchgear		
	2nd		1.2 Switchgear Equipment		
	3rd		1.3 Bus-Bar Arrangement		
	4th		1.4 Switchgear Accommodation.		
	5th		1.5 Short Circuit		
02	1st		1.6 Faults in a power system		
			FAULT CALCULATION		
	2ND		2.1 Symmetrical faults on 3-phase system		
	3rd		2.1 Symmetrical faults on 3-phase system		
	4th		2.2 Limitation of fault current		
	5th		2.3 Percentage Reactance		
03	1st		2.4 Percentage Reactance and Base KVA		
	2nd		2.5 Short – circuit KVA.		
	3rd		2.6 Reactor control of short circuit currents		
	4th		2.7 Location of reactors.		
	5th		2.8 Steps for symmetrical Fault calculations		
04	1st		2.9 Solve numerical problems on symmetrical fault		
			FUSES		
	2nd		3.1 Desirable characteristics of fuse element		
	3rd		3.2 Fuse Element materials		
	4th		3.3 Types of Fuses and important terms used for fuses.		
	5th		3.4 Low and High voltage fuses		
05	1st		3.5 Current carrying capacity of fuse element		
	2nd		3.6 Difference Between a Fuse and Circuit Breaker		
			CIRCUIT BREAKERS		
	3rd		4.1 Definition and principle of Circuit Breaker.4.2 Arc phenomenon and principle of Arc Extinction.		

WEEK	CLASS DAY	DATE	THEORY / PRACTICAL TOPICS		
			SUBJECT	SIGN	REMARKS
	4th		4.3 Methods of Arc Extinction		
	5th		4.4 Definitions of Arc voltage, Re-striking voltage and Recovery voltage.		
06	1st		4.5 Classification of circuit Breakers.		
	2nd		4.6 Oil circuit Breaker and its classification.		
	3rd		4.7 Plain brake oil circuit breaker.		
	4th		4.8 Arc control oil circuit breaker.		
	5th		4.9 Low oil circuit breaker.4.10 Maintenance of oil circuit breaker		
07	1st		4.11 Air-Blast circuit breaker and its classification. 4.12 Sulphur Hexa-fluoride (SF6) circuit breaker. 4.13 Vacuum circuit breakers		
	2nd		4.14 Switchgear component. 4.15 Problems of circuit interruption. 4.16 Resistance switching. 4.17 Circuit Breaker Rating.		
			PROTECTIVE RELAYS		
	3rd		5.2 Fundamental requirement of protective relay.		
	4th		5.3 Basic Relay operation (a) Electromagnetic Attraction type (b) Induction type		
	5th		5.4 Definition of following important terms		
08	1st		5.5 Definition of following important terms.(a) Pick-up current.(b) Current setting.(c) Plug setting Multiplier.(d) Time setting Multiplier		
	2nd		5.6 Classification of functional relays		
	3rd		5.7 Induction type over current relay (Non-directional)		
	4th		5.8 Induction type directional power relay.		
	5th		5.9 Induction type directional over current relay.		
09	1st		5.10 Differential relay (a) Current differential relay (b) Voltage balance differential relay		
	2nd		5.11 Types of protection		
			PROTECTION OF ELECTRICAL POWER EQUIPMENT AND LINES		
	3rd		6.1 Protection of alternator 6.2 Differential protection of alternators.		
	4th		6.3 Balanced earth fault protection.		

WEEK	CLASS DAY	DATE	THEORY / PRACTICAL TOPICS		
			SUBJECT	SIGN	REMARKS
	5th		6.4 Protection systems for transformer.		
10	1st		6.5 Buchholz relay.		
	2nd		6.6 Protection of Bus bar.6.7 Protection of Transmission line		
	3rd		6.8 Different pilot wire protection (Merz-price voltage Balance system) 6.9 Explain protection of feeder by over current and earth fault relay.		
	PROTECTION AGAINST OVER VOLTAGE AND LIGHTING				
	4th		7.1 Voltage surge and causes of over voltage		
	5th		7.2 Internal cause of over voltage 7.3 External cause of over voltage (lighting)		
11	1st		7.4 Mechanism of lightning discharge.		
	2nd		effect of lightning.		
	3rd		7.7 Lightning arresters.		
	4th		7.8 Type of lightning Arresters.a) Rod-gap lightning arrester.b) Horn-gap arrester.c) Valve type arrester		
	5th		7.9 Surge Absorber		
12	STATIC RELAY				
	1st		8.1 Advantage of static relay.		
	2nd		8.1 Advantage of static relay.		
	3rd		8.2 Instantaneous over current relay.		
	4th		8.2 Instantaneous over current relay.		
	5th		8.3 Principle of IDMT relay.		
13	1st		8.3 Principle of IDMT relay.		