

DISCIPLINE – ELECTRICAL ENGG	SEMESTER 6 TH	NAME OF THE TEACHING FACULTY- SIBANI PANDA, LECT(ELECT.)	
SUB-SGPD	No Of Days Per Week Class Alloted-5	SEMESTER FROM 14.02.2023 to 25.05.2023 NO OF WEEK – 15 WEEKS	
WEEK	CLASS DAY	THEORY	STATUS
1 ST WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	INTRODUCTION TO SWITCHGEAR 1.1 Essential Features of switchgear. 1.2 Switchgear Equipment. 1.3 Bus-Bar Arrangement. 1.4 Switchgear Accommodation. 1.5 Short Circuit.	
2 nd WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	1.6 Short circuit. 1.7 Faults in a power system FAULT CALCULATION 2.1 Symmetrical faults on 3-phase system. 2.2 Limitation of fault current. 2.3 Percentage Reactance.	
3 RD WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	2.4 Percentage Reactance and Base KVA. 2.5 Short – circuit KVA. 2.6 Reactor control of short circuit currents.	
4 TH WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	2.7 Location of reactors. 2.8 Steps for symmetrical Fault calculations 2.9 Solve numerical problems on symmetrical fault FUSES 3.1 Desirable characteristics of fuse element. 3.2 Fuse Element materials. .	
5 TH WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	3.3 Types of Fuses and important terms used for fuses. 3.4 Low and High voltage fuses. 3.5 Current carrying capacity of fuse element. 3.6 Difference Between a Fuse and Circuit Breaker	
6 TH WEEK	1 ST day 2 nd day 3 rd day 4 th day	CIRCUIT BREAKERS 4.1 Definition and principle of Circuit Breaker. 4.2 Arc phenomenon and principle of Arc Extinction. 4.3 Methods of Arc Extinction.	

	5 th day	4.4 Definitions of Arc voltage, Re-striking voltage and Recovery voltage. 4.5 Classification of circuit Breakers.	
7 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	4.6 Oil circuit Breaker and its classification. 4.7 Plain brake oil circuit breaker. 4.8 Arc control oil circuit breaker. 4.9 Low oil circuit breaker. 4.10 Maintenance of oil circuit breaker. 4.11 Air-Blast circuit breaker and its classification. 4.12 Sulphur Hexa-fluoride (SF6) circuit breaker.	
8 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	4.13 Vacuum circuit breakers. 4.14 Switchgear component. 4.15 Problems of circuit interruption. 4.16 Resistance switching. 4.17 Circuit Breaker Rating Internal assessment 1	
9 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	PROTECTIVE RELAYS 5.1 Definition of Protective Relay. 5.2 Fundamental requirement of protective relay. 5.3 Basic Relay operation 5.3.1. Electromagnetic Attraction type 5.3.2. Induction type 5.4 Definition of following important terms 5.5 Definition of following important terms. 5.5.1. Pick-up current. 5.5.2. Current setting. 5.5.3. Plug setting Multiplier. 5.5.4. Time setting Multiplier.	
10 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	5.6 Classification of functional relays 5.7 Induction type over current relay (Non-directional) 5.8 Induction type directional power relay. 5.9 Induction type directional over current relay 5.10 differential relay 5.10.1 current differential relay 5.10.2 voltage balance differential relay 5.11 types of protection	
11 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	PROTECTION OF ELECTRICAL POWER EQUIPMENT AND LINES 6.1 Protection of alternator. 6.2 Differential protection of alternators. 6.3 Balanced earth fault protection.	

12 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	7.3.2 Thermistor and Resistance thermometers. 7.3.3 Wire Resistance Strain Gauges 7.4. Inductive Transducer 7.4.1 Principle of linear variable differential Transformer (LVDT)
13 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	7.4.2 Uses of LVDT 7.5. Capacitive Transducer. 7.5.1 General principle of capacitive transducer. 7.5.2 Variable area capacitive transducer
14 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	OSCILLOSCOPE 8.1. Principle of operation of Cathode Ray Tube. 8.2. Principle of operation of Oscilloscope (with help of block diagram).
15 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	8.3. Measurement of DC Voltage & current. 8.4. Measurement of AC Voltage, current, phase & frequency Internal assessment 2

Paul
13.02.23