



Maharaja Agrasen Institute of Technology

(Approved by AICTE & Affiliated to GGSIP University, New Delhi)

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Department of Electrical & Electronics Engineering

Power Systems-II (EEC-303)

ACADEMIC PLAN FOR SEMESTER- V 2023

S.No.	TOPICS TO BE COVERED	Total No. of Lectures (42)	CO
UNIT-I (Classification of Relays, Protection of Generators and Transformers)			
1	Electromechanical, static and numerical relays: Construction, operating characteristic and their applications.	3	CO1
2	Differential Protection, protection of stator windings,	2	
3	Rotor earth fault protection, protection against unbalanced loading,	2	
4	Loss of excitation and prime mover failure;	1	
5	Protection of motors (induction and synchronous) and bus bars.	2	
UNIT-II (Protection of Transmission lines)			
6	Over current protection, Grading of over current relays,	2	CO2
7	Distance protection, types of distance relays and their characteristics,	3	
8	Carrier current protection	1	
9	Protection against surges, surge diverters, surge absorbers,	2	
10	Use of ground wires on transmission lines, methods of grounding	2	

After Mid Term			
UNIT-III (Fuses and Circuit Breakers)			
11	Types & Applications of Fuse and MCB,	3	CO3
12	Current interruption theories,	2	
13	Types of Circuit Breakers: Air, air-blast,	3	
14	Oil, SF6 and Vacuum circuit breakers-Principle, ratings and applications.	4	
UNIT-IV (Stability and Load Dispatch)			
15	Swing equation, steady state stability, equal area criteria, critical clearing angle, point by point method	2	CO4
16	Load frequency control, load frequency control with GRC, Speed Governor Dead Band and its effects,	3	
17	System constraint, Economic Dispatch Neglecting losses,	2	
18	Optimum load dispatch including transmission losses, Automatic load dispatching.	3	

Course Objectives

C.303.1	To introduce the concepts and constructional features and operation of relays, fuses and circuit breakers
C.303.2	Familiarise students with various protection schemes of generators Transformers, generator, bus bars, motors and transmission lines
C.303.3	Knowledge of power system stability for stable operation
C.303.4	Exposure with load dispatch for analysis and design of power system