



Maharaja Agrasen Institute of Technology

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

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Department of Electrical & Electronics Engineering

Power Station Practice (ETEE-312)

ACADEMIC PLAN FOR SEMESTER –VI 2022

S.No.	TOPICS TO BE COVERED	Total No. of Lectures (42)	CO
UNIT-I(Different forms of Energy)			
1	Different form energy sources : Renewable & Non RenewableEnergy Sources	1	CO1, CO2
2	Introduction to Solar energy, geo-thermal energy, tidal energy,	2	
3	Wind energy, bio-gas energy and M.H.D. Power generation.	2	
4	Thermal Power Plant- Location and Site selection	1	
5	General layout and working of plant	2	
6	Boilers, economizers, super heaters& Draft eqipments	2	
7	fuel and ash handling plants	2	
UNIT-II (Gas, Hydro & Diesel PP)			
8	Gas turbine power plant-general Layout , Working and components of gas turbine power plant	2	CO2
9	combined gas and steam turbine plant	2	
10	Hydro Electric Plant-Location and site selection, general layout and operation of plant	2	
11	Types of Hydro Turbines and their characteristics – Impulse and reaction type, speed governing system	2	

12	Diesel Power plant Layout and components of plant auxiliary equipments..	2	
After Mid Term			
UNIT-III(Nuclear Power Plant&Economic Operation)			
13	Nuclear Power Plant:Location and site selection, General layout and operation of plant	2	CO2, CO3
14	Brief description of reactors, moderators and reflectors	2	
15	Economic Operation Of Power System Performance curves,, iterative technique for solution of economic dispatch with losses; Derivation of transmission loss formula.	2	
16	Economic generation scheduling neglecting losses and generator limits Economic generation scheduling Economic Dispatch including transmission losses – approximate penalty factor	2	
17	iterative technique for solution of economic dispatch with losses; Derivation of transmission loss formula.	2	
UNIT-IV(Substation Layout)			
18	Substation Layout: Types of substations , typical layout constructional details of pole mounted, Indoor, Outdoor sub-stations	3	CO4
19	hybrid gas insulated sub stations bus bar arrangements	3	
20	application of substation equipment like transformer , circuit breaker, isolator, metering equipments	2	
21	protecting equipment , substation grounding	2	

Course Objectives

ETEE-312.1	Students understand their knowledge of different forms and sources of energy & process of energy generation.
ETEE-312.2	To discuss type of generating power station, their layout & their sub parts.
ETEE-312.3	To execute power plant economics considering different economics operation of power systems parameters.
ETEE-312.4	To distinguish substation & their layouts.