

**Lesson Plan for POWER PLANT ENGINEERING (TH.4a) ,
5th Semester, Mechanical Engg. (WINTER-2026)**

Discipline: Mechanical Engg	Semester: 5 th	Name of the Teaching Faculty: Sri B.K.Dash, Senior Lecturer, Mechanical
SUBJECT: POWER PLANT ENGINEERING (TH.4a)	No. of Days/ week class allotted=3	Semester Starts from 01.07.2026

WEEK	PERIOD	TOPICS TO BE COVERED
UNIT-I INTRODUCTION TO POWER PLANT		
1	1	Introduction to Power plant, Different types of energy sources
	2	Classification of Power plant
	3	Indian energy scenario ,Location of Different types of Power Plant
2	4	Layout of Thermal Power plant, Basic Rankine Cycle
	5	Importance of electrical power in day today life
	6	Overview of method of electrical power generation
UNIT-II ECONOMICS OF POWER PLANT		
3	7	Terminology used in power plant ,Peak load, Base load
	8	Difference between peak load and Base load power plant
	9	Difference between captive and central power plant
4	10	Load factor, Load curve
	11	Various factor affecting the operation of power plant
	12	Methods of meeting the fluctuating load in power plant
5	13	Load sharing- cost of power-tariff methods
	14	Performance and operation of power plant
	15	characteristics of power plant.
UNIT-III HYDRO POWER PLANT		
6	16	Introduction to Hydroelectric power plant, Basic Layout
	17	Rainfall, Runoff and its measurement
	18	Hydrograph, flow duration curve
7	19	Selection of sites for hydroelectric power plant
	20	General layout of Hydroelectric power plant and its working
	21	Classification of the Plant-Run off river plant ,Surge tank
8	22	storage river plant, pumped storage plant
	23	Advantages and disadvantages of hydroelectric power plant.
	UNIT-IV DIESEL AND GAS TURBINE PLANT, NUCLEAR POWER PLANT	
9	24	The layout of diesel power plant; Components and the working of diesel power plant
	25	Advantages and disadvantages of diesel power plant
	26	Gas turbine power Plant-Schematic diagram, components and its working
10	27	Combined cycle power generation
	28	Combined gas and steam turbine power plant operation
	29	Introduction to Nuclear power plant, Nuclear reaction
11	30	Nuclear Power-Radio activity-Radioactive charge- types of reactions
	31	Working of a nuclear power plant with neat sketch
	32	Thermal fission Reactors- PWR
	33	BWR and gas cooled reactors

12	34	Advantages and Disadvantages of Nuclear power plant
	UNIT-V ENVIRONMENTAL IMPACT OF POWER PLANT , POWER PLANT SAFETY	
13	35	Social and Economical issues of power plant
	36	Green house effect; Acid precipitation
	37	Acid rain, Acid snow, Dry deposition, Acid fog
	38	Air, water, Thermal pollution from power plants
14	39	Radiations from nuclear power plant effluents
	40	Plant safety concept; Safety policy to be observed in power plants
	41	Safety practices to be observed in boiler operation
15	42	Safety in oil handling system
	43	Safety in Chemical handling system
	44	Statutory provision related to boiler operation
	45	REVISION

Das
20/06/2022
Concerned faculty

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20/06/2022
HOD

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