

LESSON PLAN
6th SEMESTER MECHANICAL ENGINEERING (2023-24)
SUBJECT- POWER STATION ENGINEERING (TH.3)

(w.e.f 16/01/2024)

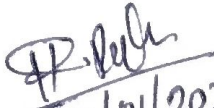
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TOTAL PERIODS-60
THEORY-4P/WEEK

Sl No.	week	Day	Topics to be covered
1	1st	1st day	INTRODUCTION: Describe sources of energy.
		2nd day	Explain concept of Central and Captive power station.
		3rd day	Classify power plants.
		4th day	Importance of electrical power in day today life
Sl No.	week	Day	Topics to be covered
2	2nd	1st day	Overview of method of electrical power generation
		2nd day	THERMAL POWER STATIONS
		3rd day	Layout of steam power stations
		4th day	Steam power cycle.
Sl No.	week	Day	Topics to be covered
3	3rd	1st day	Explain Carnot vapour power cycle with P-V, T-s diagram and determine thermal efficiency.
		2nd day	Explain Rankine cycle with P-V, T-S & H-s diagram and determine thermal efficiency, Work done, work ratio, and specific steam Consumption
		3rd day	Solve Simple Problems.
		4th day	List of thermal power stations in the state with their capacities.
Sl No.	week	Day	Topics to be covered
4	4th	1st day	Boiler Accessories
		2nd day	Operation of Air pre heater, Operation of Economiser, Operation Electrostatic precipitator and Operation of super heater
		3rd day	Need of boiler mountings
		4th day	operation of boiler
Sl No.	week	Day	Topics to be covered
5	5th	1st day	Draught systems (Natural draught, Forced draught & balanced draught) with their advantages & disadvantages
		2nd day	Natural draught, Forced draught & balanced draught) with their advantages & disadvantages
		3rd day	Steam prime movers
		4th day	Advantages & disadvantages of steam turbine
Sl No.	week	Day	Topics to be covered
6	6th	1st day	Elements of steam turbine
		2nd day	governing of steam turbine
		3rd day	Performance of steam turbine
		4th day	Explain Thermal efficiency, Stage efficiency and Gross efficiency.
Sl No.	week	Day	Topics to be covered

7	7th	1 st day	Assignment evaluation and discussion
		2 nd day	Steam condenser Function of condenser,
		3 rd day	Classification of condenser
		4 th day	function of condenser auxiliaries
Sl No.	week	Day	Topics to be covered
8	8th	1 st day	hot well, condenser extraction pump
		2 nd day	air extraction pump, and circulating pump.
		3 rd day	Cooling Tower
		4 th day	Function and types of cooling tower,
Sl No.	week	Day	Topics to be covered
9	9th	1 st day	spray ponds
		2 nd day	Selection of site for thermal power stations
		3 rd day	NUCLEAR POWER STATIONS
		4 th day	Classify nuclear fuel (Fissile & fertile material)
Sl No.	week	Day	Topics to be covered
10	10 th	1 st day	Explain fusion and fission reaction.
		2 nd day	Explain working of nuclear power plants with block diagram .
		3 rd day	Explain the working and construction of nuclear reactor
		4 th day	Compare the nuclear and thermal plants.
Sl No.	week	Day	Topics to be covered
11	11 th	1 st day	Explain the disposal of nuclear waste.
		2 nd day	Selection of site for nuclear power stations
		3 rd day	List of nuclear power stations.
		4 th day	DIESEL ELECTRIC POWER STATIONS:
Sl No.	week	Day	Topics to be covered

12	12 th	1 st day	State the advantages and disadvantages of diesel electric power stations.
		2 nd day	Explain briefly different systems of diesel electric power stations: Fuel storage and fuel supply system, Fuel injection system, Air supply system, Exhaust system, cooling system, Lubrication system, starting system, governing system.
		3 rd day	Selection of site for diesel electric power stations.
		4 th day	Performance and thermal efficiency of diesel electric power stations.
Sl No.	week	Day	Topics to be covered
13	13 th	1 st day	HYDEL POWER STATIONS: State advantages and disadvantages of hydroelectric power plant
		2 nd day	Classify and explain the general arrangement of storage type hydroelectric project and explain its operation
		3 rd day	Selection of site of hydel power plant.
		4 th day	List of hydro power stations with their capacities and number of units in the state.
Sl No.	week	Day	Topics to be covered
14	14 th	1 st day	Types of turbines and generation used
		2 nd day	Simple problems.
		3 rd day	GAS TURBINE POWER STATIONS : Selection of site for gas turbine stations.
		4 th day	Fuels for gas turbine
Sl No.	week	Day	Topics to be covered
15	15 th	1 st day	Elements of simple gas turbine power plants
		2 nd day	Merits, demerits and application of gas turbine power plants
		3 rd day	Doubt clearance and Revision
		4 th day	Revision


 15/01/2024
 Lect. (AF)