

GOVERNMENT POLYTECHNIC JAIPUR

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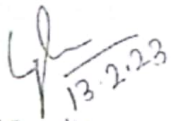
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DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN (2022-2023)		
Discipline: Mechanical	Semester: 6th	Name of the Teaching Faculty: Gitanjali Sethi
Subject: PSE(TH-3)	No. Of Days/Week Class Allotted 04	Semester From Date: 14.02.2023 To Date: 23.05.2023 No. of Weeks - 15
Week	Class Day	Theory/Practical Topics
1st	1st ①	(Chapter – 1) Introduction Overview of different sources of energy.
	2nd ②	Applications of different sources of energy.
	3rd ③	Introduction to Power Plants. Classification of power plants.
	4th ④	Concept of Central and Captive power station. Importance of electrical power in day today life.
2nd	1st ⑤	Various methods of electrical power generation
	2nd ⑥	(Chapter – 2) Thermal power stations Layout of steam power station
	3rd ⑦	Explanations of Carnot vapor power cycle with P-V, T-s diagram and determination of thermal efficiency.
	4th ⑧	Numericals on Carnot vapor power cycle
3rd	1st ⑨	Explanations of Rankine cycle with P-V, T-s and H-s diagram and study of performance of steam power plant
	2nd ⑩	Determination of the thermal efficiency, work done, work ratio and specific steam Consumption for Rankine cycle
	3rd ⑪	Numericals on Rankine cycle, List of thermal power station in state with their capacities.
	4th ⑫	Boiler mountings –Need, Types and their functions
4th	1st ⑬	Boiler Accessories: Operation of Air preheater, Economizer, Super heater, Electrostatic precipitator
	2nd ⑭	Boiler Draught systems with advantages and Disadvantages
	3rd ⑮	Classification of Boiler Draught
	4th ⑯	Steam prime movers: advantages and Disadvantages of steam turbine. Elements of steam turbine. Classifications
	1st ⑰	Working of steam turbines. Performance of steam turbine– Explanation of Thermal efficiency, Stage efficiency and Gross efficiency.

5th	2nd	(17)	Governing of steam turbine
	3rd	(18)	Steam condenser: Function of condenser, Classification of condenser
	4th	(19)	Working of Various Condensers
6th	1st	(20)	Function of condenser auxiliaries such as hot well, condenser extraction pump, air extraction pump, and circulating pump.
	2nd	(21)	Cooling Tower: Function and types of cooling tower, and spray ponds
	3rd	(22)	Selection of site for thermal power stations. List of thermal power stations in the state with their capacities
	4th	(23)	Review class
7th	1st	(24)	Assignment Evaluation & Class Test
	2nd	(25)	(Chapter - 3) Nuclear power stations Introduction to Nuclear Power plant. List of nuclear power stations. Classification of nuclear fuels (Fissile & fertile material).
	3rd	(26)	Nuclear energy.
	4th	(27)	Fusion and Fission reactions.
	1st	(28)	Elements of nuclear power plants & Block diagram and their functions
8th	2nd	(29)	Working of nuclear power plants with block diagram
	3rd	(30)	Working and construction of nuclear reactor
	4th	(31)	Compare the nuclear and thermal plants.
	1st	(32)	Explain the disposal of nuclear waste.
9th	2nd	(33)	Selection of site for nuclear power stations
	3rd	(34)	Review class
	4th	(35)	(Chapter - 4) Diesel electric power stations Introduction to diesel electric power stations. Advantages and disadvantages of diesel electric power stations.
	1st	(36)	Components of diesel electric power stations.
10th	2nd	(37)	Fuel storage and fuel supply system
	3rd	(38)	Fuel injection system and Air supply system
	4th	(39)	Exhaust system and Starting system
	1st	(40)	Cooling and lubrication system
11th	2nd	(41)	Governing system. Selection of site for diesel electric power stations
	3rd	(42)	Performance and thermal efficiency of diesel electric power stations
	4th	(43)	Review class
	1st	(44)	Assignment Evaluation & Class Test

12 th	2nd (45)	(Chapter – 5) Hydel power stations Introduction to hydroelectric power plant and its advantages and disadvantages.
	3rd (46)	General arrangement of storage type hydroelectric project and its operation.
	4th (47)	Selection of site of hydel power plant, List of hydro power stations with their capacities and number of units in the state.
	1st (48)	Types of hydro-turbines and generator used
13 th	2nd (49)	Sample Problems
	3rd (50)	Review class
	4th (51)	(Chapter – 6) Gas turbine power stations Introduction to gas turbine power station. Merits, demerits and application of gas turbine power plants
	1st (52)	Fuels for gas turbine. Selection of site for gas turbine stations
14 th	2nd (52)	Elements of simple gas turbine power plants
	3rd (54)	Working of gas turbine power station
	4th (55)	Comparison between different types of power station
	1st (56)	<i>Assignment Evaluation & Class Test</i>
15 th	2nd (57)	<i>Discussion of previous year Question papers</i>
	3rd (58)	<i>Discussion of previous year Question papers</i>
	4th (59)	<i>Discussion of Possible Questions</i>


 Signature of Faculty
 G. Sethi.
 Sr. Lect. Mech.

LEARNING RESOURCES:			
Sl. No.	Name of Authors	Title of the Book	Name of the Publisher
1	R K Raiput	Power Plant Engineering	Laxmi Publication
2	P K NAG	Power Plant Engineering	TMH
3	Nag pat. G R	Power plant Engineering	Kanika Publisher
4	P C SHARMA	Power Plant Engineering	S & K MARIY & SONS