## GOVERNMENT POLYTECHNIC JAJPUR

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

Website: https://www.gpjajpur.org E-mail: principalgpjajpur@yahoo.co.in Contact: 9437155107

## 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 ひわ	Semester From Date: 14.02.2023 To Date: 23.05.2023 No. of Weeks - 15	
Week	Class Day	Theory/Practical Topics	
	1st ①	(Chapter - 1) Introduction Overview of different sources of energy.	
1st	2nd (2)	Applications of different sources of energy.	
	3rd (3)	Introduction to Power Plants. Classification of power plants.	
	4th (y)	Concept of Central and Captive power station, Importance of electrical power in day today life.	
2nd	lst 🕥	Various methods of electrical power generation	
	2nd (6)	(Chapter - 2) Thermal power stations Layout of steam power station	
	3rd ( <del>7</del> )	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 (0)	Determination of the thermal efficiency, work done, work ratio and specific steam Consumption for Rankine cycle	
	3rd (I)	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 V	Boiler Draught systems with advantages and Disadvantages	
	3rd (14)	Classification of Boiler Draught	
	4th (IS)	Steam prime movers: advantages and Disadvantages of steam turbine. Elements of steam turbine .Classifications	
	Ist (16)	Working of steam turbines. Performance of steam turbine— Explanation of Thermal efficiency. Stage efficiency and Gross efficiency.	

Site an condenser Function of condenser. Classification of condenser are stated by the state of the condenser and the state with their capacities.    Selection of site for thermal power stations. I sit of thermal power stations in the state with their capacities.	_		company turbing
Steam condenser. Function of condenser. Classification of condenser  4th	5th		Governing of steam turbine
4th	• • • •	3rd (8)	
1st   2st   2st		1112	
6th  2nd		(9)	Function of condenser auxiliaries such as hot well, condenser
2nd		141 (20)	extraction pump, air extraction pump, and circulating pump.
Selection of site for thermal power stations. I set of thermal power stations in the state with their capacities    Selection of site for thermal power stations	6.ds		Cooling Tower Function and types of cooling tower, and spray ponds
Ath 23 Review class  1st 29 Issignment Evaluation & Class Test  (Chapter – 3) Nuclear power stations Introduction to Nuclear Power plant. List of nuclear power stations. Classification of nuclear fuels (Fissile & fertile material).  3rd 66 Nuclear energy  4th 27 Fusion and Fission reactions.  1st 26 Elements of nuclear power plants& Block diagram and there functions  2nd 20 Working of nuclear power plants with block diagram  3rd 30 Working and construction of nuclear reactor  4th 23 Compare the nuclear and thermal plants.  1st 26 Explain the disposal of nuclear waste.  2nd 33 Selection of site for nuclear power stations  3rd 39 Review class  (Chapter – 4) Diesel electric power stations. Advantages and disadvantages of diesel electric power stations.  1st 3.4 Components of diesel electric power stations.  2nd 37 Fuel storage and fuel supply system  4th 26 Fixel storage and fuel supply system  4th 27 Fixel storage and fuel supply system  1st 4th 26 Governing system and Starting system  2nd 4th Governing system. Selection of site for diesel electric power stations  3rd 4th Performance and thermal efficiency of diesel electric power stations  4th 4th 4th Review class	Oth	2-1	Selection of site for thermal power stations. List of thermal power
The last 29   Issignment Evaluation & Class Test		.510 (22)	
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1st   26   Elements of nuclear power plants& Block diagram and there functions			
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.  2nd 33 Selection of site for nuclear power stations  3rd 9 Review class  (Chapter – 4) Diesel electric power stations. Advantages and disadvantages of diesel electric power stations.  1st 34 Jomponents of diesel electric power stations.  1st 35 Jomponents of diesel electric power stations.  2nd 37 Fuel storage and fuel supply system  3rd 36 Fuel injection system and Air supply system  4th 30 Exhaust system and Starting system  1st 40 Cooling and lubrication system  2nd 41 Governing system. Selection of site for diesel electric power stations  3rd 42 Performance and thermal efficiency of diesel electric power stations  4th 47 Review class			
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1st (3.6) Components of diesel electric power stations.  2nd 37 Fuel storage and fuel supply system  3rd 36 Fuel injection system and Air supply system  4th 37 Exhaust system and Starting system  1st 40 Cooling and lubrication system  2nd 41 Governing system. Selection of site for diesel electric power stations  3rd 42 Performance and thermal efficiency of diesel electric power stations  4th 47 Review class			disadvantages of diesel electric power stations.
2nd 37 Fuel storage and fuel supply system  3rd 4th 50 Exhaust system and Air supply system  4th 50 Exhaust system and Starting system  1st 60 Cooling and lubrication system  2nd 60 Governing system. Selection of site for diesel electric power stations  3rd 62 Performance and thermal efficiency of diesel electric power stations  4th 63 Exhaust system and Air supply system  1st 60 Cooling and lubrication system  2nd 60 Performance and thermal efficiency of diesel electric power stations  4th 60 Review class	10 <sup>th</sup>	1st (36	components of diesel electric power stations.
3rd Fuel injection system and Air supply system  4th Confexhaust system and Starting system  1st Go Cooling and lubrication system  2nd Governing system. Selection of site for diesel electric power stations  3rd Governing system. Selection of diesel electric power stations  4th Go Review class		2nd (3)	Fuel storage and fuel supply system
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2nd (4) Governing system. Selection of site for diesel electric power stations  3rd (4) Performance and thermal efficiency of diesel electric power stations  4th (4) Review class		lst /	Cooling and lubrication system
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Performance and thermal efficiency of diesel electric power stations  4th (42) Review class	11th	2nd (41)	
4th (93) Review class			
		416 (40)	Review class
(M) Assignment Evaluation & Class Test			
		131 90	Class Test

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		(Chapter - 5) Hydel power stations
	2nd Our	Introduction to hydroelectric power plant and its advantages and
	(45)	disadvantages.
12th	3rd v. t	General arrangement of storage type hydroelectric project and its
	310 (96)	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
լ էնի	2nd (49)	Sample Problems
	3rd (50)	Review class
		(Chapter - 6) Gas turbine power stations
	4th (51)	Introduction to gas turbine power station. Merits, demerits and
		application of gas turbine power plants
	Ist (52)	Fuels for gas turbine. Selection of site for gas turbine stations
	2nd (Sa)	Elements of simple gas turbine power plants
1.4th	3rd Gy	Working of gas turbine power station
	4th (55	Comparison between different types of power station
	1st (56	Assignment Evaluation & Class Test
	2nd (53)	Discussion of previous year Question papers
15th	3rd (58)	Discussion of previous year Question papers
	4th (59)	Discussion of Possible Questions

Signature of Faculty

G. Suthi.

Sc. Lect. Mech.

SI.	ARNING RESOURCE.    Name of Authors	Title of the Book	Name of the Publisher
\ o.	R k Raiput	Power Plant Lugineering	Laxim Publication
		Power Plant Lugmeering	1/111
-	P.K. NAG		Knama Publishe
;	Nag pal. G.R	Power plant I ngincering	SKKALARIAKSON
	PUSHARMA	Power Plant I numeering	- KATT W