

Discipline: Mechanical Engineering		Semester: 6th		Faculty: Sasmita Sahoo		
Subject: Power Station Engineering		No of day/week of class allotted: 4 periods		Semester starts from – 14/02/2023 to 23/05/2023 No of weeks: 15		
MONTH	WEEK	AVAILABILITY OF CLASSES	CLASS DAY	THEORY TOPICS TO BE COVERED		
February	1st	02	15/02/2023	Briefing about the syllabus. Module 1: Introduction Describe sources of energy		
			15/02/2023	Explain concept of Central and Captive power station.		
	2nd	04	20/02/2023	Classify power plants. Importance of electrical power in day today life		
			20/02/2023	Overview of method of electrical power generation		
			22/02/2023	Module 2: Thermal Power station Layout of steam power stations		
			22/02/2023	Steam power cycle. Explain Carnot vapour power cycle with P-V, T-s diagram and determine thermal efficiency.		
	3rd	02	27/02/2023	Explain Rankine cycle with P-V, T-S & H-s diagram and determine thermal efficiency, Work done, work ratio, and specific steam Consumption.		
			27/02/2023	Explain Rankine cycle with P-V, T-S & H-s diagram and determine thermal efficiency, Work done, work ratio, and specific steam Consumption.		
	March	4th	02	01/03/2023	Solve Simple Problems.	
				01/03/2023	List of thermal power stations in the state with their capacities.	
5th		02	06/03/2023	Boiler Accessories: Operation of Air pre heater, Operation of Economiser.		
			06/03/2023	Operation Electrostatic precipitator and Operation of super heater. Need of boiler mountings and operation of boiler.		
6th		04	13/03/2023	Draught systems (Natural draught, Forced draught & balanced draught) with their advantages & disadvantages		
			13/03/2023	Draught systems (Natural draught, Forced draught & balanced draught) with their advantages & disadvantages		
			15/03/2023	Steam prime movers: Advantages & disadvantages of steam turbine.		
			15/03/2023	Elements of steam turbine, governing of steam turbine.		
7th		04	20/03/2023	Performance of steam turbine: Explain Thermal efficiency, Stage efficiency and Gross efficiency.		
			20/03/2023	Performance of steam turbine: Explain Thermal efficiency, Stage efficiency and Gross efficiency.		
			22/03/2023	Steam condenser: Function of condenser, Classification of condenser.		
			22/03/2023	Class Test:01		
				27/03/2023	function of condenser auxiliaries such as hot well,	

	8th	04		condenser extraction pump, air extraction pump, and circulating pump.		
			27/03/2023	air extraction pump, and circulating pump.		
			29/03/2023	Cooling Tower: Function and types of cooling tower, and spray ponds		
			29/03/2023	Class Teat Q/A Discussion.		
April	9th	04	03/04/2023	Selection of site for thermal power stations. PYQ Discussion.		
			03/04/2023	Module:03 NUCLEAR POWER STATIONS: Classify nuclear fuel (Fissile & fertile material)		
			05/04/2023	Explain fusion and fission reaction.		
			05/04/2023	Explain working of nuclear power plants with block diagram.		
	10th	04	10/04/2023	Explain the working and construction of nuclear reactor		
			10/04/2023	Compare the nuclear and thermal plants.		
			12/04/2023	Explain the disposal of nuclear waste.		
			12/04/2023	Selection of site for nuclear power stations. List of nuclear power stations.		
	11th	04	17/04/2023	Module:04 DIESEL ELECTRIC POWER STATIONS: State the advantages and disadvantages of diesel electric power stations.		
			17/04/2023	Explain briefly different systems of diesel electric power stations: Fuel storage and fuel supply system		
			19/04/2023	Fuel injection system, Air supply system		
			19/04/2023	Exhaust system, cooling system		
			12th	04	24/04/2023	Lubrication system,
					24/04/2023	starting system, governing system.
	26/04/2023	Internal				
	26/04/2023	Selection of site for diesel electric power stations.				
May	13th	04	01/05/2023	Internal Q/A Discussion		
			01/05/2023	Performance and thermal efficiency of diesel electric power stations.		
			03/05/2023	Module:05 HYDEL POWER STATIONS: State advantages and disadvantages of hydroelectric power plant.		
	14th	04	03/05/2023	Classify and explain the general arrangement of storage type hydroelectric project and explain its operation.		
			08/05/2023	Classify and explain the general arrangement of storage type hydroelectric project and explain its operation.		
			08/05/2023	Solve problems		
			10/05/2023	Selection of site of hydel power plant.		

		10/05/2023	Class Test:02
15th	04	15/05/2023	List of hydro power stations with their capacities and number of units in the state. Types of turbines and generation used.
		15/05/2023	Types of turbines and generation used.
		17/05/2023	Module:06 GAS TURBINE POWER STATIONS Selection of site for gas turbine stations.
		17/05/2023	Fuels for gas turbine
16th	02	22/05/2023	Elements of simple gas turbine power plants
		22/05/2023	Merits, demerits and application of gas turbine power plants.
		Extra Class	Class Test Q/A Discussion
		Extra Class	PYQ Discussion
		Extra Class	PYQ Discussion