

C. V. RAMAN POLYTECHNIC, BHUBANESWAR

LESSON PLAN


Session (2025-2026)

Discipline: Mechanical Engineering	Semester: 6th Sem, Summer-2026	Name of the Faculty: Radhamohan Kabisatapathy, Asst. Prof. Email ID: r.m.kabisatapathy@cvrp.edu.in
Subject: Power Station Engineering. (Th-3)	No. of Days/week: 04	Start Date: 22.12.2025 End Date: 18.04.2026
Week	Class	Theory Topics
1st	1st	Introduction to Power Station Engineering & Describe sources of energy.
	2nd	Explanation about concept of Central and Captive power station.
	3rd	Classification of power plants & Importance of electrical power in day today life. .
	4th	Overview of method of electrical power generation.
2nd	1st	Layout of steam power stations.
	2nd	Steam power cycle. Explanation of Carnot vapours power cycle with P-V, T-s diagram and determination of thermal efficiency.
	3rd	Explanation of Rankine cycle with P-V, T-S & H-s diagram and determination of thermal efficiency.
	4th	Determination of Work done, work ratio, and specific steam Consumption. Numerical on above.
3rd	1st	Numerical on Rankine cycle.
	2nd	List of thermal power stations in the state with their capacities.
	3rd	Boiler Accessories: Operation of Air pre heater, Operation of Economiser.
	4th	Operation Electrostatic precipitator and Operation of super heater.

4th	1st	Need of boiler mountings and operation of boiler.
	2nd	Draught systems: Natural draught & Forced draught with their advantages & disadvantages.
	3rd	Balanced draught with its advantages & disadvantages.
	4th	Steam prime movers: Advantages & disadvantages of steam turbine.
5th	1st	Elements of steam turbine and governing of steam turbine.
	2nd	Performance of steam turbine: Explanation of Thermal efficiency, Stage efficiency and Gross efficiency.
	3rd	Steam condenser: Function of condenser, Classification of condenser.
	4th	Function of condenser auxiliaries such as hot well, condenser extraction pump.
6th	1st	Air extraction pump and circulating pump.
	2nd	Cooling Tower: Function and types of cooling tower, and spray ponds.
	3rd	Selection of site for thermal power stations.
	4th	Discussion and doubt clearing class about thermal power station.
7th	1st	Classification of nuclear fuel (Fissile & fertile material)
	2nd	Explanation of fusion and fission reaction.
	3rd	Explanation of working of nuclear power plants with block diagram.
	4th	Explanation of working and construction of nuclear reactor.
8th	1st	Comparison of nuclear and thermal plants.
	2nd	Explanation of disposal of nuclear waste.
	3rd	Selection of site for nuclear power stations.
	4th	List of nuclear power stations and discussion.

9th	1st	Previous year question discussion.
	2nd	Advantages and disadvantages of diesel electric power stations.
	3rd	Explanation of different systems of diesel electric power stations.
	4th	Fuel storage and fuel supply system.
10th	1st	Quiz Test
	2nd	Fuel injection system & Air supply system
	3rd	Exhaust system & cooling system.
	4th	Lubrication system & starting system
11th	1st	Governing system of diesel electric power stations.
	2nd	Selection of site for diesel electric power stations.
	3rd	Performance and thermal efficiency of diesel electric power stations.
	4th	Doubt clearing and discussion about diesel electric power stations.
12th	1st	Previous year question discussion.
	2nd	Advantages and disadvantages of hydroelectric power plant.
	3rd	Classification of hydroelectric power plant.
	4th	Explanation of general arrangement of storage type hydroelectric project and its operation.
13th	1st	Selection of site of hydel power plant.
	2nd	List of hydro power stations with their capacities and number of units in the state.
	3rd	Doubt clearing and discussion about hydro electric power stations.
	4th	Previous year question discussion.
14th	1st	Selection of site for gas turbine stations. Fuels for gas turbine.
	2nd	Types of turbines and generation used.

15th	3rd	Workout of Simple numerical gas turbine stations.
	4th	Elements of simple gas turbine power plants.
	1st	Merits, demerits and application of gas turbine power plants.
	2nd	Previous year question discussion.
	3rd	Revision & Doubt clearing.
	4th	Revision & Doubt clearing.


Concerned Faculty


H.O.D.