

# Badriprasad Institute of Technology, Sambalpur

## Lesson plan for Theory -3, Power Station Engineering

Semester & Branch: 6th Sem. Mechanical Engineering

Name of the Faculty : Mr. Siddharth Purohit

Total Periods- 60

No of periods /week- 4

Week	Day	Topic
1st	1st	Energy, Sources of energy
	2nd	concept of Central and Captive power station.
	3rd	Classify power plants
	4th	Importance of electrical power in day today life
2nd	5th	Overview of method of electrical power generation.
	6th	THERMAL POWER STATIONS
	7th	Layout of steam power stations
	8th	Steam power cycle, Carnot vapour power cycle...continue
3rd	9th	Carnot vapour power cycle with P-V, T-s diagram
	10th	determine thermal efficiency
	11th	Rankine cycle
	12th	P-V, Explanation of Rankine cycle
4th	13th	with P-V, T-S & H-S diagram
	14th	Thermal efficiency of Rankine cycle
	15th	Steam Consumption of Rankine cycle
	16th	Work done, work ratio of Rankine cycle
5th	17th	Numerical
	18th	List of thermal power stations in the state with their capacities
	19th	Boiler and boiler Accessories
	20th	Operation of Air pre heater
6th	21st	Operation of Economiser.
	22nd	Operation of Electrostatic precipitator
	23rd	Operation of super heater
	24th	Boiler mountings and operation of boiler
7th	25th	Draught systems (Natural draught, Forced draught & Balanced draught)
	26th	Advantages & disadvantages of Natural draught, Forced draught & Balanced draught
	27th	Selection of site for thermal power stations.
	28th	NUCLEAR POWER STATIONS: Classify nuclear fuel (Fissile & fertile material)
8th	29th	Explain fusion and fission reaction.Explain working of nuclear power plants with block diagram
	30th	Explain the working and construction of nuclear reactor .
	31st	Compare the nuclear and thermal plants.
	32nd	Explain the disposal of nuclear waste. Selection of site for nuclear power stations.
9th	33rd	List of nuclear power stations.
	34th	DIESEL ELECTRIC POWER STATIONS: State the advantages and disadvantages of diesel electric power stations.
	35th	Explain briefly different systems of diesel electric power stations:

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	36th	Fuel injection system, Air supply system,
10th	37th	Exhaust system, cooling system, Lubrication system, starting system,
	38th	Selection of site for diesel electric power stations
	39th	HYDEL POWER STATIONS
	40th	advantages and disadvantages of hydroelectric power plant
11th	41st	Classify and explain the general arrangement of storage type hydroelectric project
	42nd	explanation of operation of hydroelectrical power plant.
	43rd	Selection of site of hydel power plant.
	44th	List of hydro power stations with their capacities and number of units in the state.
12th	45th	Types of turbines and generation used.
	46th	Simple problems
	47th	Problem continue
	48th	Problem continue
13th	49th	GAS TURBINE POWER STATIONS
	50th	Selection of site for gas turbine stations.
	51st	Fuels for gas turbine
	52nd	Elements of simple gas turbine power plants
14th	53rd	Merits and demerits of gas turbine power plants
	54th	application of gas turbine power plants.
	55th	Revision
	56th	Revision
15th	57th	Different types of problem
	58th	Problem continue
	59th	Revision
	60th	class test

Sign of Faculty

Sign of HOD