

RAJA KISHORE CHANDRA ACADEMY OF TECHNOLOGY
NILGIRI, BALASORE
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

Subject- Power Station Engineering

SEMESTER-6TH

Name of the Faculty:- ER.NIMAIN PRASAD DHAMUDIA

Session-

Period	Date	Unit	Topics to be covered
1		Module-01	INTRODUCTION :Energy and its units,Relationship between the units,Power and its units,Relationship between the units
2			Sources of energy,Conventional source and non-conventional source of energy,Types of fuel
3			Classification of power plants as captive and central power Plants
4			Classification of power plants as captive and central power Plants
5			Discussion of important questions and revision
6		Module-02	THERMAL POWER PLANT: Steam power plant, components of steam power plant ,Layout of steam power plant
7			Thermodynamic Cycle, Types of cycle, Carnot cycle in P-V,T-S Determination of Thermal efficiency
8			Limitations of Carnot cycle, Rankine cycle, P-V,T-S diagram,Determination of thermal efficiency , Net work done,Meaning of work ratio, specific steam consumption of Rankine Cycle
9			Numericals on Carnot cycle
10			Numericals on Rankine cycle using Mollier chart and steam Tables
11			List of Thermal power Stations in Odisha with capacity, Boiler and its Accessories, Air-Preheater, Economiser
12			Superheater, Working of Sugden's Superheater
13			Electrostatic precipitator, components and working
14			Performance test
15			Boiler mountings and Its need ,operation of boiler
16			Boiler draught and its types, advantages and disadvantages
17			Balanced draught and derivation of minimum height of Chimney
18			Comparsion Between Forced draught and Induced draught,Steam Turbines and Its Classification
19			Elements of steam turbine and Governing of Steam turbine
20			Performance of Steam Turbine
21			Steam Condensers and its Classification
22			Working of steam condenser and function of its components
23			Cooling tower and its types
24			Working of cooling Tower and site selection of thermal power Stations
25		Module-3	NUCLEAR POWER PLANT: Pre-requisites of nuclear power Plant
26			Nuclear Reaction and its types
27			Working of Nuclear Power plant
28			Construction and Working of Nuclear Reactor
29			Comparison of Nuclear power plant and Thermal power plant
30			1 st class test

31			Nuclear Waste and its Classification
32			Nuclear waste disposal methods
33			Site selection of Nuclear Power plant, Nuclear Power plants in India
34			Revision
35		Module-4	DIESEL ELECTRIC POWER PLANT: Diesel electric power station: its advantages and disadvantages
36			Fuel storage system and fuel supply system of Diesel electric power station
37			Fuel Injection system of diesel electric power station
38			Air supply system and exhaust system of diesel electric power Station
39			Cooling and Lubrication system of diesel electric power station
40			Starting system of diesel electric power station
41			Governing system of Diesel Electric power station
42			Selection of site for diesel electric power stations
43			Performance parameters and thermal efficiency of diesel electric power station
44			Discussion of important question
45		Module-5	Hydel Power station: Its advantages and disadvantages
46			Classification of Hydel power stations
47			General arrangement of storage type hydroelectric project
48			Operation of hydroelectric project
49			Selection of site of hydel power plant
50			Hydro power stations with their capacities and number of units in Odisha
51			Types of turbines and generation used in power stations
52			Numericals on Hydel power stations
53			Numericals on Hydel power stations
54			Quiz test and discussion on questions
55		Module-6	Gas turbine power station: Selection of site for gas turbine power stations
56			Fuels for gas turbine plants
57			2 nd class test
58			Elements of Simple gas turbine power plant
59			Merits and demerits of Gas turbine power stations, Application of gas turbine power stations
60			Previous year semester question discussion
Signature of Faculty Member Signature of H.O.D			