GIETPOLYTECHNIC,JAGATPUR,CUTTACK

LESSONPLAN

Discipline: Electrical Engg.	Semester:- 3rd	Name of theTeaching Faculty:- AMIYA RANJAN DAS
Subject:- Introduction To Electric Generation Systems (TH-1)	No of Days/per Week Class Allotted:- 03	Semester- From:14.07.2025 To:15.11.2025 No of Weeks:- 15
Week	**Class/Day**	**Theory Topics**
1st	1st	**I.Thermal power plants:Coal,Gas/Disel and Nuclear-based** 1.1.Layout and working of a typical thermal power plant with steam turbines and electric generators. (contd....)
	2nd	1.1.Layout and working of a typical thermal power plant with steam turbines and electric generators. (contd....)
	3rd	1.1.Layout and working of a typical thermal power plant with steam turbines and electric generators. (contd....)
2nd	1st	1.1.Layout and working of a typical thermal power plant with steam turbines and electric generators.
	2nd	1.2.Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Coal,Gas,Disel,Nuclear fuels-fusion and fission action. (contd....)
	3rd	1.2.Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Coal,Gas,Disel,Nuclear fuels-fusion and fission action. (contd....)
3rd	1st	1.2.Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Coal,Gas,Disel,Nuclear fuels-fusion and fission action. (contd....)
	2nd	1.2.Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Coal,Gas,Disel,Nuclear fuels-fusion and fission action.
	3rd	1.3.Safe practices and working of various thermal power plants:Coal-based,Gas-based,Disel-based and Nuclear-based. (contd....)
4th	1st	1.3.Safe practices and working of various thermal power plants:Coal based,Gas-based,Disel-based and Nuclear-based. (contd....)
	2nd	1.3.Safe practices and working of various thermal power plants,;Coal based,Gas-based,Disel-based and Nuclear-based. (contd....)
	3rd	1.3.Safe practices and working of various thermal power plants:Coal based,Gas-based,Disel-based and Nuclear-based.
5th	1st	1.4.Functions of the following types of themal power plants and their major auxiliaries. 1.4.1.Coal fired boilers;Fire tube and water tube.
	2nd	1.4.2.Gas/disel based Combustion engines.
	3rd	1.4.3.Types of Nuclear reactors:Disposal of nuclear waste and nuclear shielding.
6th	1st	1.4.3.Types of Nuclear reactors.Disposal of nuclear waste and nuclear shielding.
	2nd	**II.Large Hydro power Plants** 2.1Energy conversion process of Hydro power plant
	3rd	2.2.Classification of hydro power plant:High, Medium and Low head.
7th	1st	2.3.Construction and working of hydro turbines used in different types of hydro power plant. (contd....)
	2nd	2.3.Construction and working of hydro turbines used in different types of hydro power plant. 2.3.1.High head-pelton turbine
	3rd	2.3.2.Medium head-Francis turbine
8th	1st	2.3.3.Low head-Kaplan turbine.
	2nd	2.4.Safe practices for hydro power plants
	3rd	2.5..Location of these different types of large hydro power plants in india.
9th	1st	**III.Micro-Hydropower plants** 3.1.Layout of micro hydro power plants (contd....)
	2nd	3.1.Layout of micro hydro power plants
	3rd	3.2Different types of micro-hydro turbines for different heads. 3.2.1.Pelton turbines. (contd....)

10th	1st	3.2Different types of micro hydro turbines for different heads 3.2.1.Pelton turbines
	2nd	3.2.2.Francis turbines
	3rd	3.2.3Kaplan turbines
11th	1st	3.3.Locations of these different types of micro hydro power plants in india(contd....)
	2nd	3.3.Locations of these different types of micro hydro power plants in india.
	3rd	**IV.Economics of Power Generation and Interconnected power System**
12th	1st	4.1Related terms:Connected load,Firm power,Cold reserve,hot reserve,Spinning reserve.Base load and Peak load,plants,Load curve, Load duration curve,Integrated duration curve (contd....)
	2nd	4.1Related terms:Connected load,Firm power,Cold reserve,hot reserve,Spinning reserve Base load and Peak load,plants,Load curve, Load duration curve,Integrated duration curve (contd....)
	3rd	4.1Related terms:Connected load,Firm power,Cold reserve,hot reserve,Spinning reserveBase load and Peak load,plants,Load curve, Load duration curve,Integrated duration curve(contd....)
13th	1st	4.1Related terms:Connected load,Firm power,Cold reserve,hot reserve,Spinning reserveBase load and Peak load,plants,Load curve, Load duration curve,Integrated duration curve.
	2nd	4.2.Cost generation;Average demand, Maximum demand, Demand factor,plant capacity factor, ,plant use factor,diversity factor,load factor and plant load factor. (contd....)
	3rd	4.2.Cost generation;Average demand, Maximum demand, Demand factor,plant capacity factor, ,plant use factor,diversity factor,load factor and plant load factor. (contd....)
14th	1st	4.2.Cost generation;Average demand, Maximum demand, Demand factor,plant capacity factor, ,plant use factor,diversity factor,load factor and plant load factor. (contd....)
	2nd	4.2.Cost generation;Average demand, Maximum demand, Demand factor,plant capacity factor, ,plant use factor,diversity factor,load factor and plant load factor.
	3rd	4.3.Choice of Size and number of generator units.
15th	1st	4.4.Combined operation of power station;causes,Impact and reasons of Grid system fault,State grid,national grid,brownout and blackout,Sample blackouts at national and international level. (contd....)
	2nd	4.4.Combined operation of power station;causes,Impact and reasons of Grid system fault,State grid,national grid,brownout and blackout,Sample blackouts at national and international level. (contd....)
	3rd	4.4.Combined operation of power station;causes,Impact and reasons of Grid system fault,State grid,national grid,brownout and blackout,Sample blackouts at national and international level.

10/7/25
Signature of faculty

10/7/25
Signature of sr lecturer

Head of Dept. (HOD)
Electrical & ETC Engg.
G.I.E.T (POLY), [illegible]

10/7/25
Signature of principal