LESSON PLAN FOR ACADEMIC SESSION: 2025-26(Winter)

Discipline: Electrical Engineering	Semester : 3rd	Name of the Teaching Faculty : Pratima Bhoi
Subject : Introduction to Electric Generation Systems	No. of days / week class allotted	Semester From : 14/07/2025 to 15/11/2025 Nos. of Weeks per semester : 17
Week	Class Day	Theory Topics
1ST	1st	Unit-I Thermal Power Plants: Coal, Gas/Diesel and Nuclear-based
	2nd	1.1 Layout and working of a typical thermal power plant with steam turbines and electric generators
	3rd	Continue.....
2ND	1st	Continue.....
	2nd	1.2 Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Coal
	3rd	1.2 Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Gas
3RD	1st	1.2 Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Diesel
	2nd	1.2 Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Nuclear fuels-fusion
	3rd	1.2 Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: fission action
4TH	1st	1.3 Safe Practices and working of various thermal power plants: Coal based
	2nd	1.3 Safe Practices and working of various thermal power plants: Gas- based
	3rd	1.3 Safe Practices and working of various thermal power plants: Diesel-based
5TH	1st	1.3 Safe Practices and working of various thermal power plants: Nuclear-based
	2nd	1.4 Functions of the following types of thermal power plants and their major auxiliaries 1.4.1 Coal fired boilers: fire tube and water tube
	3rd	1.4.2 Gas/diesel based combustion engines
6TH	1st	1.4.3 Types of nuclear reactors: Disposal of nuclear waste and nuclear shielding
	2nd	Continue.....
	3rd	Unit-II Large Hydropower Plants
7TH	1st	2.1 Energy conversion process of hydro power plant
	2nd	Continue.....
	3rd	2.3 Construction and working of hydro turbines used in different types of hydro power plant
8TH	1st	2.3.1 High head-Pelton turbine
	2nd	2.3.2 Medium head-Francis turbine
	3rd	2.3.3 Low head-Kaplan turbine
9TH	1st	2.4 Safe Practices for hydro power plants

	2nd	2.5 Locations of these different types of large hydro power plants in India
	3rd	Continue.....
10TH	1st	Unit-III Micro-Hydropower Plants
	2nd	3.1 Lay out of micro hydro power plants
	3rd	Continue.....
11TH	1st	Continue.....
	2nd	3.2 Different types of micro-hydro turbines for different heads: 3.2.1 Pelton turbines
	3rd	3.2 Different types of micro-hydro turbines for different heads: 3.2.2 Francis turbines
12th	1st	3.2 Different types of micro-hydro turbines for different heads: 3.2.3 Kaplan turbines
	2nd	3.3 Locations of these different types of micro-hydro power plants in India
	3rd	Continue.....
13th	1st	Unit-IV Economics of Power Generation and Interconnected Power System
	2nd	4.1 Related terms: Connected load, firm power
	3rd	4.1 Related terms: Cold reserve, hot reserve, spinning reserve.
14th	1st	4.1 Related terms: Base load and peak load plants
	2nd	4.1 Related terms: Load curve, load duration curve, integrated duration curve
	3rd	Continue.....
15th	1st	4.2 Cost of generation: Average demand, maximum demand, demand factor
	2nd	4.2 Plant capacity factor, plant use factor, diversity factor
	3rd	4.2 Load factor and plant load factor
16th	1st	4.3 Choice of size and number of generator units
	2nd	4.4 Combined operation of power station Causes, Impact and reasons of Grid system fault
	3rd	4.4 State grid, national grid, brownout
17th	1st	4.4 Blackout; sample blackouts at national and international level
	2nd	Question discussion
	3rd	Question discussion

11.7.25

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