
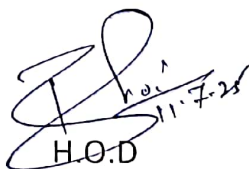


## LESSON PLAN FOR ACADEMIC SESSION: 2025-26(Winter)

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

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

  
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