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DEPARTMENT OF ELECTRICAL ENGINEERING Govt. Polytechnic, Balasore

LESSON PLAN FOR ACADEMIC SESSION - 2025-26 INTRODUCTION TO ELECTRIC GENERATION SYSTEMS

Course Code : EEPC201 (Th-1)	Semester : 3rd
Total Periods : 45 Hours	Examination : 3 Hours
Theory Periods : 3 P/Week	Progressive Assessment: 30 Marks
Maximum Marks : 100	End Semester Examination : 70 Marks
Semester From Date : 14/07/2025	To Date : 15/11/2025 (approx.)
Name of the Teaching Faculty: Er. Radha Rani Panda, Lect stage - I (ELECT)	

WEEK	PERIOD	TOPIC
1st	1 st	Thermal Power Plants: Coal, Gas/Diesel and Nuclear-based Layout and working of a typical thermal power plant with steam turbines and electric generators
	2 nd	Layout and working of a typical thermal power plant with steam turbines and electric generators
	3 rd	Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Coal
2nd	1 st	Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Gas
	2 nd	Properties of conventional fuels used in the energy conversion equipment used in thermal power plants: Diesel
	3 rd	Nuclear fuels-fusion
3rd	1 st	Nuclear fuels-fission action
	2 nd	Safe Practices and working of various thermal power plants: coal based
	3 rd	Safe Practices and working of various thermal power plants: gas- based
4th	1 st	Safe Practices and working of various thermal power plants: diesel-based
	2 nd	Safe Practices and working of various thermal power plants: nuclear-based
	3 rd	Functions of the following types of thermal power plants and their major auxiliaries- Coal fired boilers: fire tube and water tube
5th	1 st	Coal fired boilers: fire tube and water tube
	2 nd	Gas/diesel based combustion engines
	3 rd	Types of nuclear reactors :Disposal of nuclear waste and nuclear shielding
6th	1 st	Types of nuclear reactors :Disposal of nuclear waste and nuclear shielding
	2 nd	Large Hydropower Plants Energy conversion process of hydro power plant
	3 rd	Energy conversion process of hydro power plant

7 th	1 st	Classification of hydro power plant: High ,medium and low head
	2 nd	Classification of hydro power plant: High ,medium and low head
	3 rd	Construction and working of hydro turbines used in different types of hydro power plant: High head-Pelton turbine
8 th	1 st	Medium head-Francis turbine
	2 nd	Low head-Kaplan turbine
	3 rd	Safe Practices for hydro power plants
9 th	1 st	Locations of these different types of large hydro power plants in India
	2 nd	Micro-Hydropower Plants Lay out of micro hydro power plants
	3 rd	Lay out of micro hydro power plants
10 th	1 st	Different types of micro-hydro turbines for different heads: Pelton turbines
	2 nd	Pelton turbines
	3 rd	Francis turbines
11 th	1 st	Kaplan turbines
	2 nd	Kaplan turbines
	3 rd	Locations of these different types of micro-hydro power plants in India
12 th	1 st	Economics of Power Generation and Interconnected Power System Related terms: connected load, firm power
	2 nd	Cold reserve, hot reserve, spinning reserve
	3 rd	Base load and peak load plants; Load curve, load duration curve
13 th	1 st	Integrated duration curve
	2 nd	Cost of generation: Average demand, maximum demand
	3 rd	Demand factor, plant capacity factor, plant use factor
14 th	1 st	Diversity factor, load factor and plant load factor
	2 nd	Choice of size and number of generator units
	3 rd	Combined operation of power station Causes
15 th	1 st	Impact and reasons of Grid system fault: State grid, national grid
	2 nd	Brownout and blackout
	3 rd	Sample blackouts at national and international level

Panda
14/07/2025

Lect. Stage-I, Elect Dept.
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Teaching Faculty

B. Mallick
14/07/2025

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**Sr. Lecturer in Electrical Engg.
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4/14/25

Academic Coordinator
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