LESSON PLAN

DEPT.OF ELECT.ENGG GOVT.POLY.BHADRAK ESTD-2017

SUB:-GENERATION TRANSMISSION AND DISTRIBUTION.

BRANCH:- ELECTRICAL ENGG.

SEMESTER: 4TH

NAME OF FACULTY: - SUSHANTA KUMAR NAYAK

GOVT. POLYTECHNIC, BHADRAK

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GOVERNMENT POLYTECHNIC, BHADRAK

SESSION :2024-25

HOD Electrical

Academic Co-ordinator

Principal
Govt. Polytechnic Bhadrak

HOD (ELECT.)
G.P.BHADRAK

Academic Co-ordinator

Principal
Govt.Polytechnic
Bhadrak

Discipline: ELECTRICAL ENGG.	Semester: 3rd	Name of the Teaching Faculty : SUSHANTA KUMAR NAYAK(LECT.IN ELECT.ENGG)
Subject: GENERATION TRANSMISSION AND DISTRIBUTION	No. of Days/per week class allotted:4	Semester from date: 04.02.2025 – 17.05.2025 No. of Weeks:15
Week	**Class Day**	**Theory**
1st	1st	GENERATION OF ELECTRICITY Elementary idea on generation of electricity from Thermal, Power station.
	2nd	Elementary idea on generation of electricity from Hydel, Power station.
	3rd	Elementary idea on generation of electricity from Nuclear, Power station.
	4th	Introduction to Solar Power Plant (Photovoltaic cells).
2nd	1st	Layout diagram of Thermal, Power station.
	2nd	Layout diagram of Hydel, Power station.
	3rd	Layout diagram of Nuclear, Power station.
	4th	TRANSMISSION OF ELECTRIC POWER Layout of transmission and distribution scheme.
3rd	1st	Voltage Regulation of transmission
	2nd	Efficiency of transmission
	3rd	State and explain Kelvin's law for economical size of conductor .
	4th	Corona and corona loss on transmission lines.
4th	1st	OVER HEAD LINES Types of supports, size and spacing of conductor.
	2nd	Types of conductor materials.
	3rd	State types of insulator and cross arms
	4th	Sag in overhead line with support at same level .
5th	1st	Sag in overhead line with support at different level.
	2nd	(approximate formula effect of wind, ice and temperature on sag)
	3rd	Simple problem on sag.
	4th	PERFORMANCE OF SHORT TRANSMISSION LINES
6th	1st	Calculation of short transmission lines regulation
	2nd	Calculation of short transmission lines efficiency
	3rd	PERFORMANCE OF MEDIUM TRANSMISSION LINES
	4th	Calculation of medium transmission lines regulation
7th	1st	Calculation of medium transmission lines efficiency
	2nd	Simple problem on Short and Medium Lines.

	3rd	EHV TRANSMISSION EHV AC transmission.
	4th	Reasons for adoption of EHV AC transmission
8th	1st	Problems involved in EHV transmission.
	2nd	Problems involved in EHV transmission.
	3rd	HV DC transmission
	4th	Advantages and Limitations of HVDC transmission system
9th	1st	Limitations of HVDC transmission system
	2nd	DISTRIBUTION SYSTEMS Introduction to Distribution System. Connection Schemes of Distribution System: Radial
	3rd	Connection Schemes of Distribution System: Ring Main and Inter connected system.
	4th	DC distributions. Distributor fed at one End.
10th	1st	Distributor fed at both the ends
	2nd	Ring distributors
	3rd	AC distribution system Method of solving AC distribution problem
	4th	Three phase four wire star connected system arrangement..
11th	1st	UNDERGROUND CABLES Cable insulation and classification of cables
	2nd	Types of L. T. cables with constructional features..
	3rd	Types of H.T. cables with constructional features.
	4th	Methods of cable lying
12th	1st	Localization of cable faults: Murray loop testfor short circuit fault / Earth fault.
	2nd	Localization of cable faults: Varley loop test for short circuit fault / Earth fault. .
	3rd	ECONOMIC ASPECTS Causes of low power factor and methods of improvement of power factor in power system.
	4th	Factors affecting the economics of generation: Define and explain Load curves
13th	1st	Factors affecting the economics of generation: Define and explain Demand factor and Maximum demand
	2nd	Factors affecting the economics of generation: Define and explain Load factor, Diversity factor and Plant capacity factor
	3rd	Peak load on power station
	4th	Base load on power station
14th	1st	TYPES OF TARIFF Desirable characteristic of a tariff

		Explain flat rate, block rate tariff
	2nd	Explain two part and maximum demand tarif
	3rd	Explain two part and maximum demand tarif
	4th	Solve Problems
15th	1st	SUBSTATION Layout of LT, substation.
	2nd	Layout of HT substation.
	3rd	Layout of EHT substation.
	4th	Earthing of Substation, transmission lines. Earthing of distribution lines.

SIGNATURE OF THE FACULTY

Lect.in Elect.Engg.
Govt.Poly.Bhadrak