

LESSON PLAN

**SUB:-GENERATION TRANSMISSION AND
DISTRIBUTION.**

BRANCH:- ELECTRICAL ENGG.

SEMESTER: 4TH

NAME OF FACULTY: - SUSHANTA KUMAR NAYAK



**GOVERNMENT POLYTECHNIC,
BHADRAK**

SESSION :2023-24

[Signature]
HOD Electrical

HOD (ELECT.)
G.P. BHADRAK

[Signature]
Academic Co-ordinator

Academic Co-ordinator

[Signature]
Principal

Govt. Polytechnic Bhadrak

Principal
Govt. Polytechnic
Bhadrak


Discipline: ELECTRICAL ENGG.	Semester: 3 rd	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: 16.01.2024 To Date: 26.04.2024 No. of Weeks:15
Week	Class Day	Theory
1 st	1 st	GENERATION OF ELECTRICITY Elementary idea on generation of electricity from Thermal. Power station.
	2 nd	Elementary idea on generation of electricity from Hydel. Power station.
	3 rd	Elementary idea on generation of electricity from Nuclear. Power station.
	4 th	Introduction to Solar Power Plant (Photovoltaic cells).
2 nd	1 st	Layout diagram of Thermal, Power station.
	2 nd	Layout diagram of Hydel, Power station.
	3 rd	Layout diagram of Nuclear, Power station.
	4 th	TRANSMISSION OF ELECTRIC POWER Layout of transmission and distribution scheme.
3 rd	1 st	Voltage Regulation of transmission
	2 nd	Efficiency of transmission
	3 rd	State and explain Kelvin's law for economical size of conductor .
	4 th	Corona and corona loss on transmission lines.
4 th	1 st	OVER HEAD LINES Types of supports, size and spacing of conductor.
	2 nd	Types of conductor materials.
	3 rd	State types of insulator and cross arms
	4 th	Sag in overhead line with support at same level .
5 th	1 st	Sag in overhead line with support at different level.
	2 nd	(approximate formula effect of wind, ice and temperature on sag)
	3 rd	Simple problem on sag.
	4 th	PERFORMANCE OF SHORT TRANSMISSION LINES
6 th	1 st	Calculation of short transmission lines regulation
	2 nd	Calculation of short transmission lines efficiency
	3 rd	PERFORMANCE OF MEDIUM TRANSMISSION LINES
	4 th	Calculation of medium transmission lines regulation
7 th	1 st	Calculation of medium transmission lines efficiency
	2 nd	Simple problem on Short and Medium Lines.

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

7 th	Explain flat rate, block rate tariff
8 th	Explain two part and maximum demand tariff
9 th	Explain two part and maximum demand tariff
10 th	Solve Problems
11 th	SUBSTATION
12 th	Layout of L.T. substation.
13 th	Layout of HT substation.
14 th	Layout of EHT substation.
15 th	Earthing of Substation, transmission lines, Earthing of distribution lines.

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Signature _____
 Date _____


 HON. CHIEF OF THE FACULTY
 Govt. Engineering
 College, Bhadrak