

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline: Electrical Engg.	Semester: 4th.	Name of the Teaching Faculty Ajay Kumar Pradhan
Subject: C.T.D	No. of days per week Class Alloted:	Semester from Dt. 14.2.23 to Dt. 23.5.23 No. of Weeks: 14
Week	Class Day	Theory / Practical Topics
1st	1st day	Generation of Electricity; - Elementary idea on generation of Electricity from thermal power plant.
	2nd day	Hydel power plant
	3rd day	Nuclear power plant
	4th day	Introduction to solar power plant (photovoltaic cells)
	1st day	Layout diagrams of generating stations
	2nd day	Transmission of Electric Power. Layout of transmission and distribution Scheme.
	3rd day	Voltage regulation & efficiency of transmission
	4th day	State and explain Kelvin's law for economical size of conductor.
	5th.	Corona and corona loss on transmission lines.
	1st day	Overhead lines: - Types of supports, size and spacing of conductor.
2nd	2nd day	Types of conductor materials
	3rd day	State types of insulator and cross arms

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4th week	4th day	Sag in overhead line with support at same level.
	5th day	Sag in overhead line with different level.
	1st day	Effect of wind, ice and temperature on sag.
	2nd day	Simple problem on sag.
	3rd day	Performance of short & medium lines:- short lines
	4th day	medium lines
5th	5th day	problems on sag.
	1st day	EHV Transmission EHV AC Transmission
	2nd day	Reasons for adoption of EHV AC transmission.
	3rd day	problems involved in EHV transmission
	4th day	HV DC transmission.
	5th day	Advantages and limitations of HV DC transmission system.
6th.	1st day	Introduction to Distribution system.
	2nd day	Connection schemes of Distribution System. (Radial, Ring main and Interconnected system)
	3rd day	D.c distributions.

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7th.	4th day	Distributor fed at one end.
	5th day	Distributor fed at both ends.
	1st day	Ring Distributors
	2nd day	A.C distribution System
	3rd day	method of solving A.C distribution problem.
8th.	4th day	3 phase 4 wire star connected system arrangement.
	1st day	Underground Cables: - Cable insulation and classification of cables.
	2nd day	Types of L.T & H.T cables with constructional features
	3rd day	Methods of cable laying.
	4th day	Localization of cable faults: Murray and Varley loop test for short circuit fault, Earth fault.
9th	5th day	Varley loop test.
	1st day	Economic Aspects. Causes of low power factor and methods of improvement of P.F in Power System

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10th	2nd day	Factors affecting the economics of generation.
	3rd day	Load curves.
	4th day	Explain Demand factor, maximum demand, Load factor, Diversity factor, plant Capacity factor.
	5th day	Peak load and Base load on power station.
	1st day	Types of Tariff. Explain Tariff.
	2nd day	Flat rate Tariff, Block rate, two part tariff.
	3rd day	Explain max demand tariff
	4th day	Substation
	5th day	Layout of L.T. substation
	1st day	Layout of HT substation
11th	2nd day	Layout of EHT substation
	3rd day	Earthing of substation.
	4th day	Earthing of transmission lines
	5th day	Earthing of distribution lines.

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12th	1st day	Numerical problems of short transmission line.
	2nd day	Numerical Problems of Distribution lines.
	3rd day	Question discussion on problems of short transmission line
	4th day	Question discussion on faults
	5th day	Question discussion on voltage regulation and efficiency.
13th	1st day	Question discussion on solar power plant.
	2nd day	Question discussion on Kelvin's law
	3rd day	Question discussion of corona and corona loss on transmission lines.
	4th day	Question on Sag
	5th day	Question discussion on d.c. distribution system
14th	1st day	Question discussion on A.C. distribution system.
	2nd day	Question discussion on faults on cable and Tests on cable
	3rd day	Questions on power factor.
	4th day	Questions on Tariff
	5th day	Questions on LT, HT & EHT substations