



NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)



LESSON PLAN

SUBJECT: Th-4 (GENERATION TRANSMISSION & DISTRIBUTION)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Generation of electricity	7	7
2	Transmission of electric power 05	5	5
3	Over head line	7	7
4	Performance of short & medium lines	7	7
5	EHV transmission	7	7
6	Distribution System 07	7	7
7	Underground cable 06	6	6
8	Economic Aspects	6	6
9	Types of tariff	3	3
10	Substation	5	5
	TOTAL	60	60

Discipline: ELECTRICAL&E LECTRONICS ENGG.	Semester: 4TH	Name of the Teaching Faculty: DHARMAPADA OJHA
Week	Class Day	Theory / Practical Topics
1 st	1 st	GENERATION OF ELECTRICITY: Elementary idea on generation of electricity from Thermal, Hydel, Nuclear, Power station.
	2 nd	Elementary idea on generation of electricity from Thermal, Hydel, Nuclear, Power station.
	3 rd	Elementary idea on generation of electricity from Thermal, Hydel,
	4 th	Elementary idea on generation of electricity from Thermal, Hydel, Nuclear, Power station.
	5 th	Elementary idea on generation of electricity from Thermal, Hydel, Nuclear, Power station.
2 nd	1 st	Introduction to Solar Power Plant (Photovoltaic cells).
	2 nd	Layout diagram of generating stations
	3 rd	TRANSMISSION OF ELECTRIC POWER Layout of transmission and distribution scheme.
	4 th	Voltage Regulation & efficiency of transmission.
	5 th	State and explain Kelvin's law for economical size of conductor.
3 rd	1 st	State and explain Kelvin's law for economical size of conductor.
	2 nd	Corona and corona loss on transmission lines.
	3 rd	OVER HEAD LINES Types of supports, size and spacing of conductor.
	4 th	Types of conductor materials.

	5 th	State types of insulator and cross arms.
4 th	1 st	Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)
	2 nd	Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)
	3 rd	Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)
	4 th	Simple problem on sag.
	5 th	PERFORMANCE OF SHORT & MEDIUM LINES Calculation of regulation and efficiency
5 th	1 st	Calculation of regulation and efficiency
	2 nd	Calculation of regulation and efficiency
	3 rd	Calculation of regulation and efficiency
	4 th	Calculation of regulation and efficiency
	5 th	Calculation of regulation and efficiency
6 th	1 st	Calculation of regulation and efficiency
	2 nd	EHV TRANSMISSION EHV AC transmission
	3 rd	Reasons for adoption of EHV AC transmission.
	4 th	Reasons for adoption of EHV AC transmission.

	5 th	Reasons for adoption of EHV AC transmission.
7 th	1 st	Problems involved in EHV transmission
	2 nd	HV DC transmission
	3 rd	Advantages and Limitations of HVDC transmission system
	4 th	DISTRIBUTION SYSTEMS Introduction to Distribution System
	5 th	Connection Schemes of Distribution System: (Radial, Ring Main and Inter connected system)
8 th	1 st	DC distributions Distributor fed at one End.
	2 nd	Distributor fed at both the ends.
	3 rd	Ring distributors. AC distribution system
	4 th	Method of solving AC distribution problem.
	5 th	Three phase four wire star connected system arrangement.
9 th	1 st	UNDERGROUND CABLES Cable insulation and classification of cables.
	2 nd	Types of L. T. & H.T. cables with constructional features
	3 rd	Types of L. T. & H.T. cables with constructional features
	4 th	Methods of cable lying

	5 th	Methods of cable lying
10 th	1 st	Localization of cable faults: Murray and Varley loop test for short circuit fault / Earth fault
	2 nd	ECONOMIC ASPECTS Causes of low power factor and methods of improvement of power factor in power system.
	3 rd	Causes of low power factor and methods of improvement of power factor in power system.
	4 th	Factors affecting the economics of generation: (Define and explain)
	5 th	Load curves. Demand factor. Maximum demand
11 th	1 st	Load factor. Diversity factor
	2 nd	Peak load and Base load on power station.
	3 rd	TYPES OF TARIFF Desirable characteristic of a tariff
	4 th	Desirable characteristic of a tariff
	5 th	Explain flat rate, block rate, two part and maximum demand tariff. (Solve Problems)
12 th	1 st	SUBSTATION Layout of LT, HT and EHT substation
	2 nd	Layout of LT, HT and EHT substation
	3 rd	Layout of LT, HT and EHT substation
	4 th	Earthing of Substation, transmission and distribution lines.

	5 th	Earthing of Substation, transmission and distribution lines.
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