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

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

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

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

	5th	Earthing of Substation, transmission and distribution lines.