Discipline: **EE**	Semester: 4th	Name of the Teaching Faculty: **SRI SUBODH KANTA BARIK**
Subject: **GENERATION TRANSMISSION & DISTRIBUTION**	No. of Days/per week class allotted: **04**	No. of Weeks : **15**
Week	**Class Day**	**Theory Topics**
1st	01	**Uni 1: GENERATION OF ELECTRICITY** Elementary idea on generation of electricity from Thermal, Hydel, Nuclear, Power station.
	02	Thermal Power Plant
	03	Hydel Power Plant
	04	Hydel Power Plant
2nd	01	Nuclear Power Plant
	02	Introduction to Solar Power Plant (Photovoltaic cells).
	03	Layout diagram of generating stations.
	04	**Unit 2: TRANSMISSION OF ELECTRIC POWER** Layout of transmission and distribution scheme.
3rd	01	Voltage Regulation & efficiency of transmission.
	02	State and explain Kelvin's law for economical size of conductor.
	03	State and explain Kelvin's law for economical size of conductor.
	04	Corona and corona loss on transmission lines.
4th	01	**Unit 3: OVER HEAD LINES** Types of supports, size and spacing of conductor.
	02	Types of supports, size and spacing of conductor.
	03	Types of conductor materials.
	04	State types of insulator and cross arms.
5th	01	Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)
	02	Sag in overhead line with support at same level and different level. (approximate formula effect of wind, ice and temperature on sag)
	03	Simple problem on sag.
	04	**Unit 4: PERFORMANCE OF SHORT & MEDIUM LINES** Different types of Line
6th	01	Short transmission Line
	02	Medium transmission Line
	03	Regulation & Efficiency
	04	Calculation of regulation and efficiency.
7th	01	Problem
	02	Problem
	03	

		Unit 5: EHV TRANSMISSION : Introduction
	04	EHV AC transmission.
8th	01	Reasons for adoption of EHV AC transmission.
	02	Problems involved in EHV transmission.
	03	HVDC transmission.
	04	HVDC transmission.
9th	01	Advantages and Limitations of HVDC transmission system.
	02	**Unit 6: DISTRIBUTION SYSTEMS** Introduction to Distribution System.
	03	Connection Schemes of Distribution System: (Radial, Ring Main and Inter connected system)
	04	DC distributions. Distributor fed at one End.
10th	01	Distributor fed at both the ends.
	02	Ring distributors.
	03	AC distribution system Method of solving AC distribution problem.
	04	Three phase four wire star connected system arrangement.
11th	01	**Unit 7: UNDERGROUND CABLES** Cable insulation and classification of cables.
	02	Cable insulation and classification of cables.
	03	Types of L. T. & H.T. cables with constructional features.
	04	Methods of cable lying.
12th	01	Localization of cable faults: Murray test for short circuit fault / Earth fault.
	02	Varley loop test for short circuit fault / Earth fault
	03	**Unit 8: ECONOMIC ASPECTS** Introduction
	04	Causes of low power factor and methods of improvement of power factor in power system.
13th	01	Factors affecting the economics of generation: (Define and explain)
	02	Load curves, Demand factor, Maximum demand
	03	Load factor, Diversity factor, Plant capacity factor
	04	Peak load and Base load on power station.
14th	01	**Unit 9: TYPES OF TARIFF** Desirable characteristic of a tariff.
	02	Explain flat rate, block rate, two part and maximum demand tariff
	03	Solve Problems
	04	**Unit 10: SUBSTATION** Layout of LT substation.
15th	01	Layout of HT substation.
	02	Layout of EHT substation.
	03	Earthing of Substation, transmission and distribution lines.
	04	Revision(Q&A discussion, and doubt Clearing)