

# GOVERNMENT CO.ED POLYTECHNIC RAIPUR (C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

## LESSON PLAN

Session:

Session start as per university calendar:

Course Name: Electrical Power Generation, Transmission & Distribution

Name of Subject Teacher:

Lecturer plan T+P = 3

Course code: 2024474(024)

Discipline: EE, EEE			Semester: 4th	Class room Instruction Start Date:					
S.No.	Chapter No.	Topics	Sub Topic to be covered under this unit	Total hours	No. of periods planned	Actual No of periods taken	Date of Class Conduction	Use of AV resources if any	Remarks if any
1	1	<i>Hydroelectric Power Plant</i>	Various Sources of electrical power generation, Hydro, thermal, nuclear etc.	14				NA	
			Hydro electric power station, energy conversion, process, plant layout						
			Hydrograph and simple calculation of electrical power generation, choice of site and constituents of HPS						
			Classification of HPS based on – Head, storage & pondage, plant layout, turbine type, auxiliaries						
			Synchronous generators, in HPS, selection no. of poles, rotor speed, and diameter						
2	2	<i>Thermal &amp; Nuclear Power Station</i>	Thermal power station, energy conversion process, plant layout	14				NA	
			Major equipment and auxiliaries of TPS, boiler, steam turbine, turbo generator, super heater, conomizer.						
			NPS- Energy conversion process, Constituents, layout and selection						
			Reactor main parts, types and its control						
			Nuclear fuels						
3	3	<i>Variable Loads on Generating Stations</i>	Structure of electrical power system	15				NA	
			Connected load, max demand, average, demand, demand factor, diversity factor,						
			load curve and load duration curve, base load and peak load on generating stations.						
			Relationship between units generated per year, max demand and load factor, cost of electrical energy.						
4	4	<i>Transmission line parameters and performance</i>	transmission line parameters- resistance, inductance, capacitance, skin effect, Stranding and transposing of conductors, classification of short, medium and long transmission line.	16				NA	
			Performance of lines, voltage regulation, efficiency, Equivalent circuits, T and Pi networks, ABCD constants						
			Line insulators, requirements, types, failure of insulators, string efficiency						
5	5	<i>Distribution System</i>	Feeders, distributors and service mains, selection of conductors size	16				NA	
			Voltage drops in DC distributors, and AC distributors						
			Types of under ground cables, construction of power cables						
			selection of power cables for LT and HT connections, laying of underground power cables						
			Faults in power cables						
				75 Hours					