

**UTKAL GOURAV MADHUSUDAN INSTITUTE OF TECHNOLOGY, RAYAGADA**  
**Academic lesson plan for summer semester - 2024**

Name of the teaching faculty: **Kishore Chandra Prusty**  
 Semester: **4<sup>th</sup>**  
 No. of periods per week: **4**  
 Semester Exam: **80**  
 Total Marks: **100**

Discipline / Dept.: **EE**  
 Subject (Theory): **GTD**  
 Total Periods: **60**  
 Class Test: **20**

Week	Period	Unit / chapter	Topic to be covered
1 <sup>st</sup>	1 <sup>st</sup>	Generation of electricity	Elementary idea on generation of electricity from Thermal, Power station
	2 <sup>nd</sup>	Generation of electricity	Elementary idea on generation of electricity from Hydel Power station
	3 <sup>rd</sup> 3RD	Generation of electricity	Elementary idea on generation of electricity from Hydel Power station
	4 <sup>th</sup>	Generation of electricity	Elementary idea on generation of electricity from Nuclear Power station
2 <sup>nd</sup>	1 <sup>st</sup>	Generation of electricity	Elementary idea on generation of electricity from Nuclear Power station
	2 <sup>nd</sup>	Generation of electricity	Introduction to Solar Power Plant
	3 <sup>rd</sup>	Generation of electricity	Layout diagram of generating stations
	4 <sup>th</sup>	Transmission of electric power	Layout of transmission and distribution scheme
3 <sup>rd</sup>	1 <sup>st</sup>	Transmission of electric power	Voltage Regulation & efficiency of transmission.
	2 <sup>nd</sup>	Transmission of electric power	State and explain Kelvin's law for economical size of conductor
	3 <sup>rd</sup>	Transmission of electric power	Corona and corona loss on transmission lines.
	4 <sup>th</sup>	Transmission of electric power	Corona and corona loss on transmission lines.
4 <sup>th</sup>	1 <sup>st</sup>	Over head line	Types of supports
	2 <sup>nd</sup>	Over head line	size and spacing of conductor.
	3 <sup>rd</sup>	Over head line	Types of conductor materials.
	4 <sup>th</sup>	Over head line	State types of insulator and cross arms.
5 <sup>th</sup>	1 <sup>st</sup>	Over head line	State types of insulator and cross arms.
	2 <sup>nd</sup>	Over head line	Sag in overhead line
	3 <sup>rd</sup>	Over head line	support at same level and different level.
	4 <sup>th</sup>	Performance of short & medium lines	Calculation of regulation.
6 <sup>th</sup>	1 <sup>st</sup>	Performance of short & medium lines	Calculation of regulation.
	2 <sup>nd</sup>	Performance of short & medium lines	Calculation of regulation.
	3 <sup>rd</sup>	Performance of short & medium lines	Calculation of efficiency.
	4 <sup>th</sup>	Performance of short & medium lines	Calculation of efficiency.
7 <sup>th</sup>	1 <sup>st</sup>	Performance of short & medium lines	Problems on regulation and efficiency.
	2 <sup>nd</sup>	Performance of short & medium lines	Problems on regulation and efficiency.
	3 <sup>rd</sup>	EHV transmission	EHV AC transmission
	4 <sup>th</sup>	EHV transmission	EHV AC transmission
8 <sup>th</sup>	1 <sup>st</sup>	EHV transmission	Reasons for adoption of EHV AC transmission
	2 <sup>nd</sup>	EHV transmission	Problems involved in EHV transmission.
	3 <sup>rd</sup>	EHV transmission	HV DC transmission.
	4 <sup>th</sup>	EHV transmission	Advantages and Limitations of HVDC transmission
9 <sup>th</sup>	1 <sup>st</sup>	EHV transmission	Advantages and Limitations of HVDC transmission
	2 <sup>nd</sup>	Distribution System	Introduction to Distribution System
	3 <sup>rd</sup>	Distribution System	Radial Distribution System
	4 <sup>th</sup>	Distribution System	Ring Main Distribution System
10 <sup>th</sup>	1 <sup>st</sup>	Distribution System	Inter connected Distribution System
	2 <sup>nd</sup>	Distribution System	Distributor fed at one End Distributor fed at both the ends. Ring distributors.
	3 <sup>rd</sup>	Distribution System	Method of solving AC distribution problem.
	4 <sup>th</sup>	Distribution System	Three phase four wire star connected system

11 <sup>th</sup>	1 <sup>st</sup>	UNDERGROUND CABLES	Cable insulation and classification of cables.
	2 <sup>nd</sup>	UNDERGROUND CABLES	Types of L. T. cables with constructional features.
	3 <sup>rd</sup>	UNDERGROUND CABLES	Types of H.T. cables with constructional features
	4 <sup>th</sup>	UNDERGROUND CABLES	Methods of cable lying.
12 <sup>th</sup>	1 <sup>st</sup>	UNDERGROUND CABLES	Localization of cable faults: Murray loop test for short circuit fault / Earth fault.
	2 <sup>nd</sup>	UNDERGROUND CABLES	Localization of cable faults: Varley loop test for short circuit fault / Earth fault.
	3 <sup>rd</sup>	ECONOMIC ASPECTS	Causes of low power factor and methods of improvement of power factor in power system
	4 <sup>th</sup>	ECONOMIC ASPECTS	Factors affecting the economics of generation: (Define and explain)
13 <sup>th</sup>	1 <sup>st</sup>	ECONOMIC ASPECTS	Load curves, Demand factor, Maximum.
	2 <sup>nd</sup>	ECONOMIC ASPECTS	Demand. ,Load factor
	3 <sup>rd</sup>	ECONOMIC ASPECTS	Diversity factor. , Plant capacity factor. , Peak.
	4 <sup>th</sup>	ECONOMIC ASPECTS	Load and Base load on power station
14 <sup>th</sup>	1 <sup>st</sup>	TYPES OF TARIFF	Desirable characteristic of a tariff.
	2 <sup>nd</sup>	TYPES OF TARIFF	Explain flat rate, block rate, two part and. (Solve Problems)
	3 <sup>rd</sup>	TYPES OF TARIFF	Explain maximum demand tariff. (Solve Problems)
	4 <sup>th</sup>	SUBSTATION	Layout of LT, substation
15 <sup>th</sup>	1 <sup>st</sup>	SUBSTATION	Layout of HT substation.
	2 <sup>nd</sup>	SUBSTATION	Layout of EHT substation. 10.2 Earthing of Substation, transmission and distribution lines
	3 <sup>rd</sup>	SUBSTATION	Earthing of Substation, transmission and distribution lines
	4 <sup>th</sup>	SUBSTATION	Earthing of transmission and distribution lines

The lesson plan is prepared by the concerned faculty.

KISHORE CHANDRA PRUSTY

GUEST FACULTY  
ELECTRICAL DEPARTMENT

