



PROGRAM: DIPLOMA IN ELECTRICAL ENGINEERING	Semester: 4TH	Name of the Teaching Faculty: MRS. SANDHYA KUMARI RANDHI
COURSE: GENERATION TRANSMISSION & DISTRIBUTION	SUBJECT CODE: TH4	COURSE CODE: C212
TOTAL PERIOD:60	No. of Days/per week class allotted:04	Semester From Date: 14/02/2023 To Date: 23/05/2023 No. of Weeks:15

### DEPARTMENT OF ELECTRICAL

#### Vision:-

To create competent and industry ready Electrical diploma engineers with professional and social values to meet future challenges.

#### Mission:-

- To prepare diploma holders through “qualitative competency based education system” to compete with national requirement along with core values
- To produce dynamic Electrical Engineers to serve the society and industry .
- To develop leadership qualities, communication skills, critical thinking and attitude for Lifelong learning.

#### Program educational objectives:-

PEO1:	Apply technical knowledge and skills learned in the field of Electrical Engineering to excel in professional and/or higher education.
PEO2:	to provide students an excellent academic environment and make them aware the needs of Society and Industry to become a successful Professional/Entrepreneur.
PEO3:	To engage in lifelong learning, career enhancement to adopt emerging technologies

#### Course outcomes:-

	Course Outcome Statement
CO1	Explain different method of power generation with their block diagram
CO2	Understand the mechanical design of over head lines and underground cables with fault locating tests ,analyze the performance of over head transmission lines and Explain the advantages and limitations of EHV and HVDC transmission system
CO3	Understand different types of distribution system and solve problems related to it
CO4	Understand the economic aspects of power system,layout of substation ,type of tariff of electricity and solve problem related to it

Sl.no.	Topic	period
01	Generation of electricity	07
02	Transmission of electric power	05
03	Over head line	07
04	Performance of short & medium lines	07
05	EHV transmission	07
06	Distribution System	07
07	Underground cable	06
08	Economic Aspects	06
09	Types of tariff	03
10	Substation	05
<b>Total</b>		<b>60</b>

Week	Class Day	Theory/Practical Topics
1 <sup>st</sup>	01	<b>GENERATION OF ELECTRICITY</b> Thermal power plant
	02	Thermal power plant
	03	Hydroelectric power plant
	04	Hydroelectric power plant
2 <sup>nd</sup>	01	nuclear power plant
	02	solar power plant
	03	<b>TRANSMISSION OF ELECTRIC POWER</b> Layout of transmission and distribution scheme.
3 <sup>rd</sup>	04	Voltage Regulation & efficiency of transmission.
	01	State and explain Kelvin's law for economical size of conductor.
	02	Corona and corona loss on transmission lines.
	03	<b>OVER HEAD LINES</b> Types of supports, size and spacing of conductor
4 <sup>th</sup>	04	Types of conductor materials.
	01	State types of insulator and cross arms.
	02	Sag in overhead line with support at same level
	03	Sag in overhead line with support at different level
5 <sup>th</sup>	04	Simple problem on sag.
	01	effect of wind, ice and temperature on sag
	02	<b>PERFORMANCE OF SHORT &amp; MEDIUM LINES</b> classification of overhead transmission line and important terms
	03	performance of single phase short transmission line
6 <sup>th</sup>	04	3 phase short transmission line
	01	effect of load on regulation and efficiency
	02	medium transmission line
	03	end condenser method
7 <sup>th</sup>	04	nominal T- method
	01	nominal pi- method
	02	<b>EHV TRANSMISSION</b> EHV AC transmission
	03	EHV AC transmission
	04	limitations and advantages

8 <sup>th</sup>	01	hvdc transmission
	02	hvdc transmission
	03	limitations and advantages
	04	<b>DISTRIBUTION SYSTEMS</b> Introduction to Distribution System
9 <sup>th</sup>	01	Connection Schemes of Distribution System: (Radial, Ring Main and Inter connected system)
	02	DC distributions.
	03	Distributor fed at one End.
	04	Distributor fed at both the ends.
10 <sup>th</sup>	01	Ring distributors.
	02	AC distribution system.
	03	Method of solving AC distribution problem.
	04	Three phase four wire star connected system arrangement.
11 <sup>th</sup>	01	<b>UNDERGROUND CABLES</b> Cable insulation and classification of cables
	02	Types of L. T. & H.T. cables with constructional features.
	03	Types of L. T. & H.T. cables with constructional features.
	04	Methods of cable lying.
12 <sup>th</sup>	01	Methods of cable lying.
	02	Localization of cable faults: Murray loop test for short circuit fault / Earth fault.
	03	Localization of cable faults: varley loop test for short circuit fault / Earth fault.
	04	Methods of cable lying.
13 <sup>th</sup>	01	<b>ECONOMIC ASPECTS</b> Causes of low power factor
	02	methods of improvement of power factor in power system
	03	Factors affecting the economics of generation
	04	Factors affecting the economics of generation
14 <sup>th</sup>	01	Factors affecting the economics of generation
	02	<b>TYPES OF TARIFF</b> Desirable characteristic of a tariff.
	03	Explain flat rate, block rate tariff
	04	two part and maximum demand tariff.
15 <sup>th</sup>	01	Solve Problems
	02	<b>SUBSTATION</b> Layout of LT, HT substation.
	03	Layout of EHT substation.
	04	Earthing of Substation, Earthing of transmission and distribution lines

*[Signature]*  
13/02/23  
SIGNATURE OF COURSE CO-ORDINATOR

*[Signature]*  
13/02/23  
SIGNATURE OF H.O.D.