

## LESSON PLAN FOR ACADEMIC SESSION: 2025-26 (Summer)

Discipline: Electrical engineering	Semester: 4th	Name of the Teaching Faculty: Miss Pratima Bhoi (Sr. Lect.)
Subject: Electric Power Transmission & Distribution	No. of days / week class allotted	Semester From date: 22/12/2025 to 18/04/2026 Nos. of Weeks per semester: 15
Week	Class Day	Theory Topics
1 <sup>ST</sup>	1 <sup>st</sup>	<b>Chapter-1 Basics of Transmission and Distribution</b> 1.1 Single line diagrams with components of the electric supply transmission and distribution systems
	2 <sup>nd</sup>	Continue.....
	3 <sup>rd</sup>	1.2 Classification of transmission lines
2 <sup>ND</sup>	1 <sup>st</sup>	1.3 Primary and secondary transmission
	2 <sup>nd</sup>	1.4 Standard voltage level used in India
	3 <sup>rd</sup>	1.5 Classification of transmission lines: based on type of voltage, voltage level, length and others
3 <sup>RD</sup>	1 <sup>st</sup>	1.6 Characteristics of high voltage for power transmission
	2 <sup>nd</sup>	1.7 Method of construction of electric supply transmission system- 110 kV, 220 kV, 400 kV
	3 <sup>rd</sup>	Continue.....
4 <sup>TH</sup>	1 <sup>st</sup>	1.8 Method of construction of electric supply distribution systems- 220 V, 400V, 11 kV, 33 kV
	2 <sup>nd</sup>	<b>Chapter-2 Transmission Line Parameters and Performance</b> 2.1 Line Parameters: Concepts of R, L and C of line parameters and types of lines.
	3 <sup>rd</sup>	Continue.....
5 <sup>TH</sup>	1 <sup>st</sup>	2.2 Performance of short line: Efficiency, regulation and its derivation, effect of power factor, vector diagram for different power factor.
	2 <sup>nd</sup>	Continue.....
	3 <sup>rd</sup>	2.3 Performance of medium line: representation, nominal 'T', nominal 'π' and end condenser methods.
6 <sup>TH</sup>	1 <sup>st</sup>	Continue.....
	2 <sup>nd</sup>	Continue.....
	3 <sup>rd</sup>	2.4 Transposition of conductors and its necessity
7 <sup>TH</sup>	1 <sup>st</sup>	2.5 Skin effect and proximity effect
	2 <sup>nd</sup>	<b>Chapter-3 Extra High Voltage Transmission</b> 3.1 Extra High Voltage AC (EHVAC) transmission line: Necessity, high voltage substation components such as transformers and other switchgears.
	3 <sup>rd</sup>	3.1.1 Advantages, limitations and applications of EHVAC 3.1.2 EHVAC lines in India

8 <sup>TH</sup>	1 <sup>st</sup>	3.2 Ferranti and Corona effect
	2 <sup>nd</sup>	3.3 High Voltage DC (HVDC) Transmission Line: Necessity components, advantages, limitations and applications
	3 <sup>rd</sup>	3.3.1 Layout of monopolar, bi-Polar and homo-polar transmission lines of HVDC
9 <sup>TH</sup>	1 <sup>st</sup>	3.3.2 HVDC Lines in India
	2 <sup>nd</sup>	3.4 Features of EHVAC and HVDC transmission line
	3 <sup>rd</sup>	3.5 Flexible AC Transmission line: Features, types of FACTS controller Continue.....
10 <sup>TH</sup>	1 <sup>st</sup>	3.6 New trends in wireless transmission of electrical power
	2 <sup>nd</sup>	<b>Chapter-4 A.C Distribution System</b> 4.1 AC distribution: Components classification, requirements of an ideal distribution system, primary and secondary distribution system
	3 <sup>rd</sup>	Continue.....
11 <sup>TH</sup>	1 <sup>st</sup>	4.2 Feeder and distributor, factors to be considered in design of feeder and distributor
	2 <sup>nd</sup>	4.3 Types of different distribution schemes: radial, ring, and grid, layout, advantages, disadvantages and applications
	3 <sup>rd</sup>	4.4 Voltage drop, sending end and receiving end voltage
12 <sup>th</sup>	1 <sup>st</sup>	4.5 Distribution Sub-Station: Classification, site selection, advantages, disadvantages and applications
	2 <sup>nd</sup>	4.6 Single Line diagram (layout) of 33/11KV Sub-Station, 11KV/400V sub-station
	3 <sup>rd</sup>	Continue.....
13 <sup>th</sup>	1 <sup>st</sup>	4.7 Symbols and functions of their components
	2 <sup>nd</sup>	<b>Chapter-5 Components of Transmission and Distribution Line</b> 5.1 Overhead Conductors: Properties of material, types of conductor with trade names, significance of sag
	3 <sup>rd</sup>	5.2 Line supports: Requirements, types of line structures and their specifications, methods of erection
14 <sup>th</sup>	1 <sup>st</sup>	5.3 Line Insulators
	2 <sup>nd</sup>	5.3.1 Properties of insulating material 5.3.2 Selection of material
	3 <sup>rd</sup>	5.3.3 Types of insulators and their applications 5.3.4 Causes of insulator failure
15 <sup>th</sup>	1 <sup>st</sup>	5.3.5 Derivation of equation of string efficiency for string of three suspension insulator
	2 <sup>nd</sup>	5.3.6 Methods of improving string efficiency
	3 <sup>rd</sup>	5.4 Underground Cables: Requirements, classification, construction, comparison with overhead lines, cable laying and cable jointing.

  
 Prepared By  
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