



SYNERGY SCHOOL OF ENGINEERING, DHENKANAL

LESSONPLAN Session(2025-2026)

Discipline:Electrical Engineering	Semester:4 th , Summer/2025-26	Name of the Faculty: SUNANDITA SAHOO
Subject:ELECTRIC POWER TRANSMISSION AND DISTRIBUTION	No. of Days/week:03	Start Date:22/12/2025 End Date:

Week	Class Day	Theory Topics	Date of delivery
1st	1st	Basics of Transmission and Distribution Single line diagrams with components of the electric supply transmission and distribution systems	
	2nd	Classification of transmission lines	
	3rd	Primary and secondary transmission Standard voltage level used in India	
2nd	1st	Classification of transmission lines: based on type of voltage, voltage level, length and others	
	2nd	Characteristics of high voltage for power transmission Method of construction of electric supply transmission system- 110 kV, 220 kV, 400 kV	
	3rd	Method of construction of electric supply distribution systems- 220 V, 400V, 11 kV, 33 kV	
3rd	1st	Transmission Line Parameters and Performance Line Parameters: Concepts of R, L and C of line parameters and types of lines	
	2nd	Performance of short line: Efficiency, regulation and its derivation, effect of power factor, vector diagram for different power factor	
	3rd	Performance of medium line: representation, nominal 'T', nominal 'π' and end condenser methods	
4th	1st	Transposition of conductors and its necessity Skin effect and proximity effect	
	2nd	Skin effect and proximity effect Assignment -1	
	3rd	Extra High Voltage Transmission Extra High Voltage AC (EHVAC) transmission line: Necessity, high voltage substation components such as transformers and other switchgears	
5 th	1st	Advantages, limitations and applications of EHVAC EHVAC lines in India	
	2nd	Ferranti and Corona effect	
	3rd	High Voltage DC (HVDC) Transmission Line: Necessity components Advantages, limitations and applications	
6 th	1st	Layout of monopolar, bi-Polar and homo-polar transmission lines of HVDC	
	2nd	HVDC Lines in India	
	3rd	Features of EHVAC and HVDC transmission line Flexible AC Transmission line: Features, types of FACTS controller	
7th	1st	New trends in wireless transmission of electrical power Assignment-2	
	2nd	QUIZ TEST-1	
	3rd	A.C Distribution System AC distribution: Components classification, requirements of an ideal distribution system, primary and secondary distribution system	
8 th	1st	Feeder and distributor, factors to be considered in design of feeder and distributor	
	2nd	Feeder and distributor, factors to be considered in design of feeder and distributor	
	3rd	Types of different distribution schemes: radial, ring, and grid. layout, advantages, disadvantages and applications	
9 th	1st	Voltage drop, sending end and receiving end voltage	

	2nd	Distribution Sub-Station Classification, site selection, advantages, disadvantages and applications	
	3rd	Single Line diagram (layout) of 33/11KV Sub-Station, 11KV/400V sub-station Symbols and functions of their components	
10 th	1st	Components of Transmission and Distribution Line Overhead Conductors: Properties of material, types of conductor with trade names, significance of sag	
	2nd	Line supports: Requirements, types of line structures and their specifications, methods of erection	
	3rd	Line Insulators Assignment-3	
11 th	1st	Properties of insulating material	
	2nd	Selection of material	
	3rd	Types of insulators and their applications	
12 th	1st	Causes of insulator failure	
	2nd	Derivation of equation of string efficiency for string of three suspension insulator	
	3rd	Methods of improving string efficiency	
13 th	1st	Underground Cables: Requirements, classification, construction, comparison with overhead lines, cable laying and cable jointing.	
	2nd	Doubt Clearing class	
	3rd	Assignment-4	
14 th	1st	Doubt Clearing class	
	2nd	Doubt Clearing class	
	3rd	QUIZ TEST- 2	
15 th	1st	Discussion of Previous year questions	
	2nd	Discussion of Previous year questions	
	3rd	CLASS TEST -1	

Sunandita Sahu.
20.12.2025
Name of faculty

[Signature]
30/12/25
Name of HOD Electrical