

VEER SURNDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA, ODISHA

LESSON PLAN

Semester: 6th Semester Bachelor of Technology,

Session:

Subject: Electrical Power Transmission and Distribution, (Theory)

Branch: Electrical Engineering,

Name of Faculty:

Period	Module No.	Topics to be Covered	Signature
1	I	General Introduction to power transmission by D.C. and A.C. overhead lines	
2	I	Lines Constants: Resistance, Inductance	
3	I	Lines Constants: inductance of single and three phase lines with symmetrical and unsymmetrical spacing transposition	
4	I	Lines Constants: inductance of single and three phase lines with symmetrical and unsymmetrical spacing transposition	
5	I	Lines Constants: capacitance of single and three phase lines with symmetrical and unsymmetrical spacing transposition, charging current, skin effect and proximity effect	
6	I	Lines Constants: capacitance of single and three phase lines with symmetrical and unsymmetrical spacing transposition, charging current, skin effect and proximity effect	
7	I	Performance of transmission Lines: Analysis of short, medium	
8	I	Performance of transmission Lines: long lines, equivalent circuit,	
9	I	Representation of the lines and calculation of transmission parameters,	
10	I	use of static or synchronous condensers for improvement of regulation.	
11	II	Corona: Power loss due to corona, practical importance of corona, and inductive interference with neighboring communication lines,	
12	II	Use of bundled conductors in E.H.V. transmission lines and its advantages	
13	II	Overhead line Insulators:	
14	II	Voltage distribution in suspension type insulators,	
15	II	Method of equalizing, voltage distribution, economic use of insulators.	
16	II	Mechanical Design of Overhead Transmission Line, Sag and stress calculation,	
17	II	Tension and sag at erection, effect of ice and wind, vibration dampers	
18	II	Under Ground Cable: Type and construction,	
19	II	Grading of cables,	
20	II	Capacitance in 3 core cables and dielectric loss	
21	III	Distribution System; types of distributors and feeders (radial & ring),	

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23	III	Voltage drop and load calculation for concentrated and distributed loads,	
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25	III	Primary and secondary distribution network,	
26	III	Primary and secondary distribution network,	
27	III	Capacitor placement in distribution network,	
28	III	Capacitor placement in distribution network,	
29	III	Distribution system planning, Service area calculation.	
30	III	Numericals on Distribution and field visit	
31	IV	Substation	
32	IV	Types of substations, arrangement of bus-bars & control equipment	
33	IV	arrangement of bus-bars & control equipment	
34	IV	Earthing: solid earthing, resistance earthing	
35	IV	Earthing: Reactance earthing, Peterson coil	
36	IV	Per unit system one line diagram	
37	IV	Power flow through transmission line,	
38	IV	Power circle diagram, Series and shunt compensation.	
39	IV	Introduction to Flexible AC Transmission System (FACTS), SVC, TCSC,	
40	IV	SSSC, STATCOM and UPFC	

Signature of Faculty

Date: