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**Department of Electrical and Electronics Engineering**


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**Lesson Plan & Work-done Diary for AY: 2023-24, ODD Semester**

Course with Code: Transmission and Distribution- 21EE51				Faculty: Dr. Vinod Kumar P			Semester & Section: V	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
<b>MODULE-1</b>								
1.		<b>Introduction to power system:</b> Structure of electric power system: Generation, Transmission and distribution.	Chalk and Talk					
2.		Advantages of high voltage transmission: HVAC, EHVAC, UHVAC and HVDC, Interconnection. Feeders, Distributors and service mains.	Chalk and Talk					
3.		Overhead transmission lines: A brief introduction to types of supporting structures and line conductors- Conventional conductors	Chalk and Talk					
4.		ATI, ZTAI, GTACSR, GZTACSR, Bundle conductor and its advantages.	Chalk and Talk					
5.		Sag Calculation – Supports at same and different levels. Effect of wind and ice on sag.	Chalk and Talk					
6.		Line vibration and vibration dampers. Overhead line protection against lightening; ground wires.	Chalk and Talk					
7.		A brief introduction to types of insulators, Material used porcelain, toughened glass and polymer (composite).	Chalk and Talk					
8.		Potential distribution over a string of suspension insulators.	Chalk and Talk					

9.		String efficiency, Methods of increasing string efficiency. Arcing horns.	Chalk and Talk					
10.		Module Summary and VTU Question paper discussion	Chalk and Talk					
11.		Module 1 SRS Conduction	ICT					

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<b>MODULE-3</b>								
12.		<b>Performance of transmission lines:</b> Classification of lines – Short, medium Lines and Long Lines.	Chalk and Talk					
13.		Current and voltage relations, Line regulation in short length lines.	Chalk and Talk					
14.		Ferranti effect in short length lines.	Chalk and Talk					
15.		Medium length lines considering Nominal T circuits.	Chalk and Talk					
16.		Nominal – $\pi$ circuits.	Chalk and Talk					
17.		Equivalent circuit of a long line.	Chalk and Talk					
18.		ABCD constants of Medium Lines and Long Lines	Chalk and Talk					
19.		Solving problems on Medium transmission lines	Chalk and Talk					
20.		Solving problems on long transmission lines.	Chalk and Talk					
21.		Module Summary and VTU Question paper discussion	Chalk and Talk					

22.		Module 3 SRS Conduction	ICT					
Note:								

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<b>MODULE-4</b>								
23.		<b>Line parameters:</b> Introduction to line parameters- Resistance, Inductance and capacitance.	Chalk and Talk					
24.		Calculation of inductance of single phase transmission lines	Chalk and Talk					
25.		Calculation of Inductance of three phase lines with equilateral spacing, Unsymmetrical spacing.	Chalk and Talk					
26.		Inductance of composite – conductors, Numerical on Inductance calculation.	Chalk and Talk					
27.		Calculation of capacitance of single phase and three phase lines with equilateral spacing, Unsymmetrical spacing.	Chalk and Talk					
28.		Double circuit and transposed lines. Geometric mean radius (GMR).	Chalk and Talk					
29.		Double circuit and transposed lines, Geometric Mean Distance (GMD).	Chalk and Talk					
30.		Capacitance of composite – conductor, Advantages of single circuit and double circuit lines.	Chalk and Talk					
31.		Module Summary and VTU Question paper discussion	Chalk and Talk					
32.		Module 4 SRS Conduction	ICT					

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MODULE-5								
33.		<b>Corona:</b> Phenomena, Disruptive and visual critical voltages.	Chalk and Talk					
34.		Corona loss, Advantages and disadvantages of corona, Methods of reducing corona.	Chalk and Talk					
35.		<b>Underground cable:</b> Types of cables	Chalk and Talk					
36.		Constructional features, Insulation resistance, Thermal rating, Charging current.	Chalk and Talk					
37.		Grading of cables – capacitance	Chalk and Talk					
38.		Inter sheath grading	Chalk and Talk					
39.		Dielectric loss. Comparison between ac and dc cables.	Chalk and Talk					
40.		Limitations of cables. Specification of power cables	Chalk and Talk					
41.		Solving problems on grading of cables	Chalk and Talk					
42.		Module Summary and VTU Question paper discussion	Chalk and Talk					
43.		Module 5 SRS Conduction	ICT					
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<b>MODULE-2</b>								
44.		<b>Distribution:</b> Primary AC distribution systems	Chalk and Talk					
45.		Radial feeders, parallel feeders, loop feeders and interconnected network system	Chalk and Talk					
46.		Secondary AC distribution systems – Three phase 4 wire system, single phase 2 wire distribution	Chalk and Talk					
47.		AC distributors with concentrated and uniform loads.	Chalk and Talk					
48.		Effect of disconnection of neutral in a 3 phase four wire system.	Chalk and Talk					
49.		<b>Reliability and Quality of Distribution system:</b> Introduction, Definition of reliability, failure, Probability concepts.	Chalk and Talk					
50.		Limitation of distribution systems.	Chalk and Talk					
51.		Power quality, Reliability aids, Numerical on uniform and concentrated loads.	Chalk and Talk					
52.		Module Summary and VTU Question paper discussion. Module-2 SRS conduction.	Chalk and Talk					

	Activity	Planned	Actual	Remarks
1	Theory Classes	50		
2	Assignments/ Quizzes/ Self-study	3		
3	Tutorials/ Extra classes	04		
4	Internal Assessments	3		
5	ICT based Teaching (% of usage in Curriculum)	10%		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	