



Department of Electrical and Electronics Engineering

Lesson Plan & Work-done Diary for AY:2026-27, ODD Semester

Course with Code: Power System Analysis-2_BEE703					Faculty: Dr. Raghavendra L		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
MODULE-1								
1		Network Topology: Introduction to the course	PPT with Chalk and Talk ICT	1				
2		Basic definitions of an elementary graph		2				
3		Elementary graph theory: Tree, cut-set, loop.		3				
4		Formation of Incidence Matrices		4				
5		Formation of Incidence Matrices continued.		5				
6		Primitive network-Impedance form and admittance form		6				
7		Formation of the Y Bus by Singular Transformation		7				
8		Y bus by Inspection Method.		8				
9		Illustrative examples		9				
10		Illustrative examples		10				



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MODULE-2								
1		Module-2: Load Flow Studies: Introduction, Classification of buses.	PPT with Chalk and Talk ICT	1				
2		Power flow equation,		2				
3		Operating Constraints		3				
4		Data for Load flow		4				
5		Gauss-Seidel iterative method.		5				
6		Illustrative examples		6				
7		Illustrative examples		7				
8		Illustrative examples		8				
9		Summary of M2-VTU QP		9				
10		Solve VTU QP/SRS Activity		10				



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MODULE-3								
1		Module-3: Load Flow Studies(continued): Newton-Raphson method derivation in Polar form	PPT with Chalk and Talk ICT	1				
2		Fast decoupled load flow method,		2				
3		Flow charts of LF methods.		3				
4		Comparison of Load Flow Methods.		4				
5		Illustrative examples		5				
6		Illustrative examples		6				
7		Illustrative examples		7				
8		Illustrative examples		8				
9		Illustrative examples		9				
10		Solve VTU QP/SRS Activity		10				



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MODULE-4								
1		Module-4: Economic Operation of Power System: Introduction and Performance curves	PPT with Chalk and Talk ICT	1				
2		Economic generation Scheduling neglecting losses and generator limits		2				
3		Economic generation scheduling including generator limits and neglecting losses		3				
4		Economic dispatch including transmission losses		4				
5		Derivation of transmission loss formula.		5				
6		Illustrative examples.		6				
7		Illustrative examples.		7				
8		Unit Commitment: Introduction, Constraints and unit commitment solution by prior list method		8				
9		Dynamic forward DP approach (Flow chart and Algorithm only).		9				
10		Solve VTU QP/SRS Activity		10				



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MODULE-5								
1		Module-5: Symmetrical Fault Analysis: Z Bus Formulation by Step by step building algorithm without mutual Coupling between the elements by addition of link and addition of branch.	PPT with Chalk and Talk	1				
2		Z Bus Formulation continued- addition of a branch.		2				
3		Illustrative examples.		3				
4		Z bus Algorithm for Short Circuit Studies, excluding numerical.		4				
5		Power System Stability: Numerical Solution of Swing Equation by Point-by-Point Method		5				
6		Runge-Kutta Method.		6				
7		Illustrative examples		7				
8		Illustrative examples		8				
9		Illustrative examples		9				
10		Solve VTU QP/SRS Activity		10				



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Cycle-1			
Expt No.	Title of the Experiment	Batch	Batch
1	Y-Bus Formation for Power Systems with and without Mutual Coupling, by Singular Transformation.		
2	Y-Bus Formation for Power Systems without Mutual Coupling, by Inspection method.		
3	Formation of Jacobian matrix in Polar Coordinates, for a System having less than 4 Buses.		
4	Load Flow Analysis using Gauss Siedel Method for the system with both PQ buses and PV Buses. By simulation.		
5	Load Flow Analysis using NR Method and Fast Decoupled Method for the system with both PQ buses and PV Buses. (Using suitable simulation package)		
Cycle-2			
6	Determination of Bus Currents, Bus Power and Line Flows, for a Specified System Voltage		
7	Write a program to generate unit commitment schedule for a system with three units using priority listing method (priority based on least cost).		
8	Optimal Generation Scheduling for Thermal power plants (Using suitable simulation package.)		
9	Formation of Z-Bus (without mutual coupling) using Z-Bus Building Algorithm.		
10	To obtain Swing Curve and to Determine Critical Clearing Time, Regulation, Inertia Constant/Line Parameters /Fault Location/Clearing Time/Pre-Fault Electrical Output for a Single Machine connected to Infinite Bus through a Pair of identical Transmission Lines Under 3-Phase Fault On One of the two Lines. (Using suitable simulation package.)		
11	Repetition		
12	Repetition		
13	Lab CIE		



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Sl. No.	Activity	Planned	Actual	Remarks
1	Theory Classes	50		
2	Lab session	12		
3	Assignments/Quizzes/Self-study	3		
4	Tutorials/ Extra classes	-		
5	Internal Assessments	3		
6	ICT-based Teaching. (% of usage in Curriculum)	20		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	