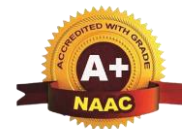


Course with Code: Power System Analysis-2 & 18EE71					Faculty: Mr. Raghavendra L		Semester & Section: VII	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
MODULE-1								
1		Introduction to network topology, Elementary graph theory – oriented graph, tree, co-tree.	Chalk & Talk					
2		Elementary graph theory – basic cut-sets, basic loops; Incidence matrices – Element-node, Bus incidence.	Chalk & Talk					
3		Introduction to Power systems, Direction of Complex Power	Chalk & Talk					
4		Formation of $Y_{bus}$ by method of inspection: Mesh & Nodal Analysis	Chalk & Talk					
5		Formation of $Y_{bus}$ by method of inspection including transformer off-nominal tap setting	Chalk & Talk					
6 & 7		Numerical on $Y_{bus}$ formation	Chalk & Talk					
8		Basic loop and Augmented loop. Primitive network impedance form and admittance form.	Chalk & Talk					
9		Method of singular transformation ( $YBUS = A^T YA$ )	Chalk & Talk					
10		Discussion on Question Paper/Activity	ICT					

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<b>MODULE-2</b>								
1		Introduction to load flow analysis in power system, Power flow equations, Classification of buses.	Chalk & Talk					
2		Operating Constraints, Data for Load flow	Chalk & Talk					
3		Gauss-Seidal Method – Algorithm and flow chart for PQ buses	Chalk & Talk					
4		Numerical problems on Gauss-Seidal Method	Chalk & Talk					
5		Numerical problems on Gauss-Seidal Method	Chalk & Talk					
6		Numerical problems on Gauss-Seidal Method	Chalk & Talk					
7		Numerical problems on Gauss-Seidal Method	Chalk & Talk					
8		Numerical problems on Gauss-Seidal Method	Chalk & Talk					
9		Numerical problems on Gauss-Seidal Method	Chalk & Talk					
10		Discussion on Question Paper/Activity	ICT					

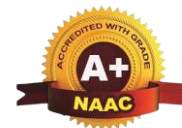
**Department of Electrical and Electronics Engineering**

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MODULE-3								
1		Newton Raphson's Method – Algorithm and flow chart for NR method in polar coordinates.	Chalk & Talk					
2		Numerical problems on Newton Raphson Method.	Chalk & Talk					
3		Numerical problems on Newton Raphson Method.	Chalk & Talk					
4		Numerical problems on Newton Raphson Method.	Chalk & Talk					
5		Numerical problems on Newton Raphson Method.	Chalk & Talk					
6		Algorithm for Fast Decoupled load flow method.	Chalk & Talk					
7		Numerical Problems on Fast Decoupled load flow method.	Chalk & Talk					
8		Numerical Problems on Fast Decoupled load flow method.	Chalk & Talk					
9		Comparison of Load Flow Methods. Summary of M-1 & 2	Chalk & Talk					
10		Discussion on Question Paper/Activity	ICT					



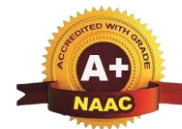
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<b>MODULE-4</b>								
1		Introduction to economic operation of Power System & Performance curves	Chalk & Talk					
2		Economic generation scheduling without including generator limits and neglecting losses	Chalk & Talk					
3		Economic Dispatch including transmission losses	Chalk & Talk					
4		Economic Dispatch including transmission losses – approximate penalty factor	Chalk & Talk					
5		An iterative technique for solution of economic dispatch with losses.	Chalk & Talk					
6		Derivation of transmission loss formula.	Chalk & Talk					
7		Unit Commitment: Introduction, Constraints	Chalk & Talk					
8		Unit commitment solution by prior list method and Dynamic forward DP approach	Chalk & Talk					
9		Discussion on Question Paper/Activity	ICT					
10		Discussion on Question Paper/Activity	ICT					



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<b>MODULE-5</b>								
1		Introduction to Z-Bus Formulation by Step by step building algorithm without mutual coupling between the elements by addition of link.	Chalk & Talk					
2		Z-Bus Formulation by Step by step building algorithm without mutual coupling between the elements by addition of branch.	Chalk & Talk					
3		Z-Bus Formulation by Step by step building algorithm without mutual coupling.	Chalk & Talk					
4		Numerical Problems on Z-bus.	Chalk & Talk					
5		Numerical on Zbus & Algorithm for Short Circuit Studies.	Chalk & Talk					
6		Derivation of Swing Equation, Numerical solution of Swing Equation –Point by Point method.	Chalk & Talk					
7		Numerical problems on Runge-Kutta method.	Chalk & Talk					
8		Numerical problems on Runge-Kutta method.	Chalk & Talk					
9		Discussion on Question Paper/Activity	ICT					
10		Discussion on Question Paper/Activity	ICT					



## Department of Electrical and Electronics Engineering

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