ATME College of Engineering

Department of Electrical and Electronics Engineering

Lesson Plan &Work-done Diary for AY: 2025-26, Even Semester

Course with Code: Power System Analysis I- BEE601				Faculty: Maria Sushma S			Semester & Section: VI	
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.		**Representation Of Power System Components** Introduction about the subject, syllabus discussion	Chalk and Talk					
2.		Single-phase Representation of Balanced Three-Phase Networks	Chalk and Talk					
3.		One-Line Diagram	Chalk and Talk					
4.		Impedance or Reactance Diagram, Numerical Problems	Chalk and Talk					
5.		Per Unit (PU) System, Numerical problems	Chalk and Talk					
6.		Steady-State Model of Synchronous Machine, Power transformer, Transmission line and loads	Chalk and Talk					
7.		Steady-State Model of Transmission line and loads	Chalk and Talk					
8.		Numerical problems on per unit system	Chalk and Talk					
9.		Numerical problems on per unit system	Chalk and Talk					
10		Numerical problems and Summary of Module 1 and VTU Question paper discussion	Chalk and Talk					

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MODULE-3								
11.		**Symmetrical Component** Introduction,	Chalk and Talk					
12.		Phase Shift in Star-Delta Transformers	Chalk and Talk					
13.		Sequence Impedances of Transmission Lines	Chalk and Talk					
14.		Sequence Impedances and Sequence Network of Power System	Chalk and Talk					
15.		Sequence Impedances and Networks of Synchronous Machine,	Chalk and Talk					
16.		Sequence Impedances of Transmission Lines	Chalk and Talk					
17.		Sequence Impedances and Networks of Transformers	Chalk and Talk					
18.		Construction of Sequence Networks of a Power System	Chalk and Talk					
19.		Sequence Impedance of SynchronousGenerator	Chalk and Talk					
20.		Numerical Problems on Sequence Networks and VTU Question paper discussion **Summary of Module3**	Chalk and Talk					

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MODULE-4								
21		**Unsymmetrical Fault Analysis** Introduction	Chalk and Talk					
22		Symmetrical Component Analysisof Unsymmetrical Faults	Chalk and Talk					
23		Single Line-To-Ground (LG) Fault,	Chalk and Talk					
24		Numericals on Single Line-To-Ground(LG) Fault	Chalk and Talk					
25		Line-To-Line (LL) Fault	Chalk and Talk					
26		Numericals on Line-To-Line (LL) Fault	Chalk and Talk					
27		Double Line-To-Ground (LLG) Fault	Chalk and Talk					
28		Numericals on Double Line-To-Ground (LLG) Fault	Chalk and Talk					
29		Open Conductor Faults	Chalk and Talk					
30		Open Conductor Faults-Numericals **Summary of Module 4** and VTU Question paper discussion	Chalk and Talk					

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MODULE-5								
31		**Power System Stability**: Introduction	Chalk and Talk					
32		Dynamics of a Synchronous Machine	Chalk and Talk					
33		Power Angle Equation Salient and Non – Salient pole Synchronous Machines	Chalk and Talk					
34		Power Angle Equation Salient and Non –Salient pole Synchronous Machines continued	Chalk and Talk					
35		Simple Systems, numerical problems	Chalk and Talk					
36		Steady-State Stability	Chalk and Talk					
37		TransientStability, Numericals	Chalk and Talk					
38		Equal Area Criterion	Chalk and Talk					
39		Numericals on Equal Area Criterion	Chalk and Talk					
40		Factors Affecting Transient Stability **Summary of Module 5** and VTU Question paper discussion	Chalk and Talk					

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MODULE-2								
41		**Symmetrical Fault Analysis,** Introduction	Chalk and Talk					
42		Transient on a Transmission Line	Chalk and Talk					
43		Transient on a Transmission Line	Chalk and Talk					
44		Short Circuit of a Synchronous Machine (On No Load)	Chalk and Talk					
45		Numericals on Short Circuit of a Synchronous Machine (On No Load)	Chalk and Talk					
46		Short Circuit of a Loaded SynchronousMachine	Chalk and Talk					
47		Numericals on Short Circuit of a Loaded Synchronous Machine	Chalk and Talk					
48		Selection of Circuit Breakers	Chalk and Talk					
49		Numericals on Selection of CircuitBreakers	Chalk and Talk					
50		Numericals and **Summary of Module 2** and VTU Question paper discussion	Chalk and Talk					

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Course with Code: Power System Analysis I- BEE601- IPCC Lab				Faculty: Maria Sushma S			Semester & Section: VI	
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**
List of Experiments								
1.		Write a program to draw power angle curves for salient and non-salient pole synchronous machines, reluctance power, excitation, EMF and regulation.	ICT Chalk and Talk					
2.		Write a program to calculate Sag of a transmission line for i)Poles at equal height ii)Poles at unequal height						
3.		Write a program to determine the efficiency, Regulation, ABCD parameters for short and long transmission line and verify AD-BC=1.						
4.		Write a program to determine the efficiency, Regulation and ABCD parameters for medium transmission line for i) Π- configuration ii) T-Configuration and verify AD-BC=1.						
5.		Write a program to calculate sequence components of line voltages given the unbalanced phase voltages.						

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
6.		Write a program to calculate the sequence components of line currents, given the unbalanced phase currents in a three phase i) 3-wire system ii) 4 wire system.	ICT Chalk and Talk					
7.		Determination of fault currents and voltages in a single transmission line for i) Single Line to Ground Fault. ii)Line to Line Fault iii) Double Line to Ground Fault Using suitable simulating software package.						
8.		Determination of fault currents and voltages in a single transmission line for Three phase Fault Using suitable simulating software package.						
9.		Write a program to obtain critical disruptive voltage for various atmospheric and conductor conditions.						
10.		Write a program to evaluate transient stability of single machine connected to infinite bus.						

	Activity	Planned	Actual	Remarks
1	Theory Classes	50		
2	IPCC Lab	10		
3	Assignments/ Self-study	2		
4	Quiz/Seminar/Group discussion	1		
5	Internal Assessments	3		
6	ICT based Teaching (% of usage in Curriculum)	30%		

Planning	**Execution**
Faculty Signature:	**Faculty Signature:**
HoD Signature:	**HoD Signature:**