Department of Electrical and Electronics Engineering

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

Course with Code: Electric Motor & BEE401					Faculty: Sowmyashree K S		Semester & Section: IV SEM	
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 about the course, fundamental laws, syllabus discussion	PPT, Chalk & Talk					
2		Construction and working principle of DC motor, Back EMF and its significance,	PPT, Chalk & Talk					
3		Torque equation., Classification of DC motor.	PPT, Chalk & Talk					
4		Numerical on Torque and Speed	PPT, Chalk & Talk					
5		Characteristics of series motors, shunt motor, compound motors.	PPT, Chalk & Talk					
6		Speed control of DC shunt motors. Application of motors. Numerical.	PPT, Chalk & Talk					
7		Losses in DC machines. Power flow diagram. Efficiency, condition for maximum efficiency.	PPT, Chalk & Talk					
8		Numericals	Chalk & Talk					
9		Swinburne's test and its numerical	PPT, Chalk					
10		Field test and its numerical	& Talk					

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MODULE-2								
1		**Three phase Induction motors:** Review of concept and generation of rotating magnetic field.	PPT, Chalk & Talk					
2		Principle of operation, Constructions of three phase Induction Motor.	PPT, Chalk & Talk					
3		Classification and types - single-phase and three-phase induction motor. Squirrel-cage and slip-ring Induction motor.	PPT, Chalk & Talk					
4		Classification and types - single-phase and three-phase induction motor. Squirrel-cage and slip-ring Induction motor.	PPT, Chalk & Talk					
5		Slip, torque, torque-slip characteristic covering motoring	Chalk & Talk					
6		Numerical	PPT, Chalk & Talk					
7		.Numerical	PPT, Chalk & Talk					
8		Generating and Braking regions of operation.	Chalk & Talk					

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MODULE-3								
1		**Module-3: Performance of Three-phase Induction Motor** Phasor diagram of induction motor on no-load and on load, Equivalent circuit Losses and efficiency.	PPT, Chalk & Talk					
2		No-load and blocked rotor tests.	PPT, Chalk & Talk					
3		Circle diagram and performance evaluation of the motor.	PPT, Chalk & Talk					
4		Cogging and crawling.	PPT, Chalk & Talk					
5		High torque rotors-double cage and deep rotor bars.	Chalk & Talk					
6		Equivalent circuit of double cage inductor motor.	PPT, Chalk & Talk					
7		Performance evaluation of double cage induction motor.	PPT, Chalk & Talk					
8		Induction motor working as induction generator.	Chalk & Talk					

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MODULE-4								
1		**Module-4: Starting and speed Control of Three-phase Induction Motors**: Need for starter. Direct on line (DOL).	PPT, Chalk & Talk					
2		Star-Delta & autotransformer starting.	PPT, Chalk & Talk					
3		Rotor resistance starting. Soft (electronic) starters.	PPT, Chalk & Talk					
4		Speed control - voltage, frequency and rotor resistance.	PPT, Chalk & Talk					
5		Speed control - voltage, frequency and rotor resistance.	Chalk & Talk					
6		**Single-phase Induction Motor:** Double revolving field theory and principle of operation.	PPT, Chalk & Talk					
7		Double revolving field theory and principle of operation.	PPT, Chalk & Talk					
8		Types of single-phase induction motors: split -phase, capacitor start.	Chalk & Talk					

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MODULE-5								
1		**Module-5: Synchronous motor:** Principle of operation.	Chalk & Talk					
2		Phasor diagrams, Torque and torque angle.	Chalk & Talk					
3		Blondel diagram, Effect of change in load, Effect of change in excitation.	Chalk & Talk					
4		V and inverted V curves, Synchronous condenser, Hunting and damping. Methods of starting synchronous motors.	Chalk & Talk					
5		**Other motors:** Construction and operation of Universal motor.	Chalk & Talk					
6		AC servomotor, Linear induction motor and Stepper motor.	Chalk & Talk					
7		**Discussion on VTU Question Paper**	Chalk & Talk					
8		**Discussion on VTU Question Paper**	ICT					

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Sl. No.	Activity	Planned	Actual	Remarks
1	Theory Classes	42		
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:**	