Electrical Engineering Department
Lesson plan

Name of Faculty	**KAUSHAL KUMAR**
Discipline	**Electrical Engineering**
Semester	**Fifth Sem (5th sem)**
Subject	**Electrical Machine-II**
Lesson Plan Duration	**From Sep 2023**
Work load [Theory + Practical] Per Week	**[04+02]**

Week	Day	Theory Topic/ Assignment/ Test	No.	Practical
1st	1	Unit1: Synchronous Machine	1	To plot relationship between no load terminal voltage and excitation current in a synchronous generator at constant speed
	2	Construction of 3-Phase Synchronous Machine		
	3	Excitation in Synchronous Machines		
	4	E.M.F. Equation of Alternator		
2nd	1	Generation of E.M.F.	2	Revision/Checking of Files
	2	Armature Winding		
	3	Voltage Generate in a Distributed Short Pitch Winding		
	4	Armature Reaction and its effects		
3rd	1	Equivalent Circuit and Phasor Diagram of Synchronous Generator	3	Determination of the relationship between the voltage and load current of an alternator, keeping excitation and speed constant
	2	Voltage Regulation		
	3	Parallel operation		
	4	Procedure of Synchronizing		
4th	1	Synchronous Power and Torque	4	Revision/Checking of Files
	2	Effect of change in excitation and input power		
	3	Synchronous Motor: Working Principle & Equivalent Circuit		
	4	Loading in Synchronous Motor		
5th	1	V-Curve and Inverted V-Curve In Synchronous Motor	5	Determination of the regulation and efficiency of alternator from the open circuit and short circuit test
	2	Synchronous Condenser		
	3	Starting of Synchronous Motor, Hunting in Synchronous Motor		
	4	Applications of Synchronous Motors		

6th	**1**	**Revision/Problem solution**	**6**	**Revision/Checking of Files**
	2	**Class Test/Assignment**		
	3	**Unit 2: 3-Phase Induction Motors**		
	4	**Classification of AC Motors**		
7th	**1**	**Construction of 3 phase Induction Motor**	**7**	**Determination of the effect of variation of excitation on performance of a synchronous motor**
	2	**Comparison of Squirrel Cage and Wound Rotor**		
	3	**Production of Rotating Magnetic Field**		
	4	**Principle of operation, slip and its significance**		
8th	**1**	**Similarity between Induction Motor and Transformer**	**8**	**Revision/Checking of Files**
	2	**Equivalent Circuit of Induction Motor**		
	3	**Torque developed in Induction Motor**		
	4	**Condition for Maximum Starting Torque**		
9th	**1**	**Relation between Full load torque, Starting Torque and Maximum Torque**	**9**	**Determination of efficiency by (a) no load test and blocked rotor test on an induction motor (b) direct loading of an induction motor (refer BIS code)**
	2	**Torque Slip Curve**		
	3	**Power flow diagram of an induction motor**		
	4	**Starting of Induction Motors**		
10th	**1**	**Speed Control of Induction Motors**	**10**	**Revision/Checking of Files**
	2	**Crawling, Cogging and Skewing**		
	3	**Applications of 3- phase Induction motor**		
	4	**Revision/Problem solution**		
11th	**1**	**Class Test/Assignment**	**11**	**Determination of effect of rotor resistance on torque speed curve of an induction motor**
	2	**Unit 3: Single Phase Motors**		
	3	**Single phase induction motors; Construction characteristics, specifications and applications**		
	4	**Nature of field produced in single phase induction motor- double revolving field theory.**		
12th	**1**	**Split phase induction motor**	**12**	**Revision/Checking of Files**
	2	**Alternating current series motor and universal motors, construction, working principle and**		

		operation, application.		
	3	**Single phase synchronous motor: Reluctance Motor & Hysteresis Motor**		
	4	**Revision/Problem solution**		
13th	**1**	**Special Purpose Machines**	**13**	**Observe the performance of a ceiling fan (Single Phase) induction motor) without capacitor Determine the effect of change in capacitor on the performance of 1-phase induction motor and reverse the direction of motor.**
	2	**Linear induction motor & Stepper motor**		
	3	**AC Servomotor & Submersible Motor**		
	4	**Revision/Problem solution**		
14th	**1**	**Revision of Old Question Papers**	**14**	**Revision/Checking of Files**
	2	**Revision of Old Question Papers**		
	3	**Revision of Old Question Papers**		
	4	**Revision of Old Question Papers**		
15th	**1**	**Revision of Old Question Papers**	**15**	**Revision/Checking of Files**
	2	**Revision of Old Question Papers**		
	3	**Revision of Old Question Papers**		
	4	**Revision of Old Question Papers**		