

Lesson Plan

Lesson Plan			
	Discipline: ETC	Semester-4th Summer-2024	Name of the Teaching Faculty: Payal Bindia Parida(GF, ETC Engg)
Sl. No.	Subject-Th.1 (ELECTRICAL MACHINE)	No. Of Days/Week class allotted:04	Semester From date: 16.01.2024 To date: 26.04.2024 (No of weeks: 15)
	Weeks/Months	Class Day	Topic
1	3rd week 16 jan To 20 jan	1st	Unit-1. ELECTRICAL MATERIAL(INTRODUCTION)
		2nd	1.1 Properties & uses of different conducting material
		3rd	1.2 Properties & use of various insulating materials used electrical engineering.
		4th	1.3 Various magnetic materials & their uses.
2	4th week 22 jan To 27 jan	1st	Unit-2. DC GENERATOR(INTRODUCTION)
		2nd	2.1 Construction, Principle & application of DC Generator.
		3rd	2.2 Classify DC generator including voltage equation.
		4th	2.3 Derive EMF equation & simple problems.
3	5th week 29 jan To 1st week 03 feb	1st	2.3 Derive EMF equation & simple problems.
		2nd	2.4 Parallel operation of DC generators.
		3rd	Unit-3. DC MOTOR(INTRODUCTION)
		4th	3.1 Principle of working of a DC motor
4	2nd week 05 feb To 10 feb	1st	3.2 Concept of development of torque & back EMF in DC motor including simple problems.
		2nd	3.3 Derive equation relating to back EMF, Current, Speed and Torque equation.
		3rd	3.4 Classify DC motors & explain characteristics, application.
		4th	3.5 Three point & four point stator/static of DC motor by solid State converter.
5	3rd week 12 feb To 17 feb	1st	3.6 Speed of DC motor by field control and armature control method.
		2nd	3.7 Power stages of DC motor & derive Efficiency of a DC motor.
		3rd	Unit-4. AC CIRCUITS(INTRODUCTION)
		4th	4.1 Mathematical representation of phasors, significant of operator "j
6	4th week 19 feb To 24 feb	1st	4.2 Addition, Subtraction, Multiplication and Division of phasor quantities.
		3rd	4.3 AC series circuits containing resistance, capacitances, Conception of active, Reactive and apparent power and Q-factor of series circuits & solve related problems.
		3rd	4.3 AC series circuits containing resistance, capacitances, Conception of active, Reactive and apparent power and Q-factor of series circuits & solve related problems
		4th	4.4 Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances Q-factor of parallel circuits.
7	5th week 26 feb To 1st week 02 march	1st	Unit-5. TRANSFORMER(INTRODUCTION)
		2nd	5.1 Ideal transformer.
		3rd	5.2 Construction & working principle of transformer.
		4th	5.3 Derive of EMF equation of transformer, voltage transformation ratio.

8	2nd week 04 march To 09 march	1st	5.4 Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load Condition.
		2nd	5.5 Phasor representation of transformer flux, current EMF primary and secondary Voltages under loaded condition.
		3rd	5.6 Types of losses in Single Phase (1- ϕ) Transformer.
		4th	5.7 Open circuit & short-circuit test (simple problems)
9	3rd week 11 march To 16 march	1st	Open circuit & short-circuit test (simple problems)
		2nd	5.8 Parallel operation of Transformer.
		3rd	5.9 Auto Transformer
		4th	Unit-6. INDUCTION MOTOR
10	4th week 18 march To 23 march	1st	1 Construction feature, types of three-phase induction motor
		2nd	Establish relation between torque, rotor current and power factor.
		3rd	Parallel operation of Transformer.
		4th	Open circuit & short-circuit test (simple problems)
11	5th week 25 march To 30 march	1st	6.2 Principle of development of rotating magnetic field in the stator.
		2nd	6.3 Establish relationship between synchronous speed, actual speed and slip of induction motor
		3rd	Auto Transformer
		4th	6.4 Establish relation between torque, rotor current and power factor
12	1st week 01 april To 06 april	1st	6.5 Explain starting of an induction motor by using DOL and Star-Delta stator. State industrial use of induction motor.
		2nd	Establish relation between torque, rotor current and power factor.
		3rd	Principle of development of rotating magnetic field in the stator.
		4th	Unit-7. SINGLE PHASE INDUCTION MOTOR
13	2nd week 08 april To 13 april	1st	Parallel operation of Transformer.
		2nd	Establish relationship between synchronous speed, actual speed and slip of induction motor
		3rd	Open circuit & short-circuit test (simple problems)
		4th	Explain starting of an induction motor by using DOL and Star-Delta stator. State industrial use of induction motor.
14	3rd week 15 april To 20 april	1st	7.1 Construction features and principle of operation of capacitor type and shaded pole type of single-phase induction motor
		2nd	Principle of development of rotating magnetic field in the stator.
		3rd	Auto Transformer
		4th	7.3 Concept of alternator & its application.
15	4th week 22 april To 26 april	1st	Parallel operation of Transformer.
		2nd	Concept of alternator & its application.
		3rd	Explain construction & operation of AC series motor
		4th	Principle of development of rotating magnetic field in the stator.

Signature of the Faculty