

## Lesson Plan

<b>Lesson Plan</b>		
<b>DISCIPLINE:</b> Electronics and Telecommunication Engineering	<b>SEMESTER:</b> 4 <sup>th</sup>	<b>NAME OF THE TEACHING FACULTY:</b> Er. Kishore Kumar Sethi
<b>SUBJECT:</b> Th. 1 - Electrical Machine	<b>NO. OF DAYS/ PERIODS PER WEEK CLASS ALLOTTED:</b> 4	Semester From Date: <b>13.02.2023</b> <b>To Date: 23.05.2023</b> No. of Weeks: <b>15</b>
<b>Weeks/Months</b>	<b>Class Day</b>	<b>Topic</b>
1 <sup>st</sup>	1st	Properties & uses of different conducting material.
	2nd	Properties & use of various insulating materials used electrical engineering.
	3rd	Various magnetic materials & their uses.
	4th	Revision of Unit-1
2 <sup>nd</sup>	1st	Class Test on Unit-1
	2nd	Construction, Principle & application of DC Generator
	3rd	Construction, Principle & application of DC Generator
	4th	Classify DC generator including voltage equation.
3 <sup>rd</sup>	1st	Derive EMF equation & simple problems.
	2nd	Derive EMF equation & simple problems.
	3rd	Parallel operation of DC generators
	4th	Simple Problems on DC Generator
4 <sup>th</sup>	1st	Revision of Unit-2
	2nd	Class Test on Unit-2
	3rd	Analysis of Class Test
	4th	Principle of working of a DC motor.
5 <sup>th</sup>	1st	Concept of development of torque & back EMF in DC motor including simple problems.
	2nd	Derive equation relating to back EMF, Current, Speed and Torque equation

	3rd	Classify DC motors & explain characteristics, application
	4th	Classify DC motors & explain characteristics, application
6 <sup>th</sup>	1st	Three point stator/static of DC motor by solid State converter
	2nd	Four point stator/static of DC motor by solid State converter
	3rd	Revision of Unit-3
	4th	Class Test on Unit-3 & its Analysis
7 <sup>th</sup>	1st	Mathematical representation of phasors, significant of operator "J"
	2nd	Addition, Subtraction of phasor quantities.
	3rd	Multiplication and Division of phasor quantities.
	4th	AC series circuits containing resistance, capacitances.
8 <sup>th</sup>	1st	Conception of active, Reactive and apparent power and Q-factor of series circuits
	2nd	solve related problems on AC series circuits
	3rd	Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances
	4th	Q-factor of parallel circuits
9 <sup>th</sup>	1st	Ideal transformer, Construction & working principle of transformer
	2nd	Derive of EMF equation of transformer, voltage transformation ratio.
	3rd	Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load Condition.
	4th	Phasor representation of transformer flux, current EMF primary and secondary Voltages under loaded condition.
10 <sup>th</sup>	1st	Types of losses in Single Phase (1- $\phi$ ) Transformer
	2nd	Open circuit & short-circuit test (simple problems)
10 <sup>th</sup>	3rd	Parallel operation of Transformer.
	4th	Auto Transformer
11 <sup>th</sup>	1st	Revision of Unit-4 & Unit-5
	2nd	Class Test on Unit – 4 and 5

	3rd	Analysis of Class Test
	4th	Construction feature, types of three-phase induction motor.
12 <sup>th</sup>	1st	Principle of development of rotating magnetic field in the stator.
	2nd	Establish relationship between synchronous speed, actual speed and slip of induction motor.
	3rd	Establish relation between torque, rotor current and power factor.
	4th	Explain starting of an induction motor by using DOL stator. State industrial use of induction motor.
13 <sup>th</sup>	1st	Explain starting of an induction motor by using Star-Delta stator. State industrial use of induction motor.
	2nd	Revision of Unit-6
	3rd	Class Test on Unit-6
	4th	Analysis of Class Test
14 <sup>th</sup>	1st	Construction features and principle of operation of capacitor type single-phase induction motor.
	2nd	Construction features and principle of operation of shaded pole type of single-phase induction motor.
	3th	Explain construction & operation of AC series motor.
	4th	Explain construction & operation of AC series motor.
15 <sup>th</sup>	1st	Concept of alternator & its application.
	2nd	Revision of Unit-7
	3rd	Class Test on Unit-7
	4th	Analysis of Class Test