

Lesson Plan

Name of Faculty :- V F

Discipline :- Electrical Engineering &
Electrical Vehicle Technology

Semester :- 1st Semester

Subject :- Principle of Electrical
Engineering

Lesson Plan Duration :- 13-14 Week

Theory		Practical	
Lecture Day	Topic	Practical Day	Topic
1	Introduction, Nature of Electricity, Electric current,	1	PRACTICAL-1 Familiarization of basic components/equipment like ammeter, voltmeter, watt meter, resistance, capacitor, inductor, energy meter, power factor meter, CRO, multi-meter etc and their operation, uses .
2	Electrical Energy, Electrical power and their unit.		
3	Resistance, conductivity and resistivity, resistance properties.	2	PRACTICAL-1 Familiarization of basic components/equipment like ammeter, voltmeter, watt meter, resistance, capacitor, inductor, energy meter, power factor meter, CRO, multi-meter etc and their operation, uses .
4	Rating and wattages of Electrical appliances, heating effect of Electrical current. Introduction to Capacitors, capacitance, Variable capacitor, Factors affecting capacitance of a capacitor and its various connections.		
5	Factors affecting capacitance of a capacitor and its various connections.	3	PRACTICAL-2 Determine the value of resistance using colour coding method.
6	Energy stored in capacitor, Charging and discharging of a capacitor.		
7	Charging and discharging of a capacitor.	4	PRACTICAL-3 Observation of change in resistance of a bulb in hot and cold conditions, using voltmeter and ammeter
8	REVISION UNIT-1		

9	Unit-2 DC Machines Ohm's law with practical implementation.	5	PRACTICAL-4 To charge and discharge a capacitor and to show the graph on C.R.O.
10	Definition of DC circuit, types of DC circuits		
11	Concept of voltage source & current source, connections and their conversions.	6	PRACTICAL-5 Verification of laws of capacitors in series and parallel.
12	Concept of voltage source & current source, connections and their conversions.		
13	Wheatstone Bridge.	7	PRACTICAL-6 To verify ohm's law by drawing a graph between voltage and current
14	Kirchhoff's Laws-KVL and KCL.		
15	Star – Delta connections and their conversion.	8	PRACTICAL-7 Verification of Kirchhoff's Current Law in a dc circuit.
16	UNIT III Electrostatics & Magneto statics Concepts of Electrostatics, Coulomb's law.		
17	Concept of magnetism, Magnetic field, Magnetic lines of force	9	PRACTICAL-7 Verification of Kirchhoff's Current Law in a dc circuit.
18	Definition of Electromagnetism,		
19	Magnetic effect of electric current, direction of magnetic field and current.	10	PRACTICAL-8 Verification of Kirchhoff's Voltage Laws in a dc circuit.
20	Current carrying conductors in a magnetic field and methods to find its direction, applications		
21	Analogy between electric and magnetic circuit.	11	PRACTICAL-9 Measurement of current and voltage in series resistive circuit. Measurement of current and voltage in parallel resistive circuit.
22	UNIT IV Electro-Magnetic Induction Determination of Ampere Turns, Series & parallel magnetic circuits,		
23	Magnetic curve (B-H curve) - cause of Hysteresis, Hysteresis loss.	12	PRACTICAL-9 Measurement of current and voltage in series resistive circuit. Measurement of current and voltage in parallel resistive circuit.

24	Faraday's laws of electro-magnetic induction.	13	PRACTICAL-10 To find the ratio of inductance of a coil having air-core and iron-core respectively and to observe the effect of introduction of a magnetic core on coil inductance.
25	E.M.F induced in a conductor. Energy stored in an Inductor,	14	PRACTICAL-10 To find the ratio of inductance of a coil having air-core and iron-core respectively and to observe the effect of introduction of a magnetic core on coil inductance.
26	Eddy currents, Eddy current losses.		
27	UNIT V Batteries Electrolysis,	15	PRACTICAL-11 Verification of Faraday's law of electromagnetic induction
28	Faradays law of electrolysis, Concept of Cells, Concept of Batteries Solution		
29	Charging methods of storage battery and charging indications. Characteristics of battery,	16	PRACTICAL-12 To obtain BH curve of a magnetic material
30	Introduction to maintenance free batteries.		
31	Disposal of batteries	17	PRACTICAL-13 Demonstration of parts of a battery and find the specific gravity of battery, Demonstration of charging and discharging of Battery and measure the terminal voltage During charging and discharging conditions.
32	Revision of Unit 1		
33,34	Revision of Unit 2	18	PRACTICAL-13 Demonstration of parts of a battery and find the specific gravity of battery, Demonstration of charging and discharging of Battery and measure the terminal voltage During charging and discharging condition.
35,36	Revision of Unit 3,4		