

## Lesson Plan

**Name of Faculty** : **Bunty**  
**Discipline** : **Electronics & Communication Engineering**  
**Semester** : **1<sup>st</sup>**  
**Subject** : **F E E**  
**Lesson Plan Duration** : **15 weeks**  
**Work load (Lecture /Practical) per week (in hours): Lectures-03, Practical-04**

	Lecture Day	Topic (Including Assignment/ Test	Practical Day	Topic
week 1 <sup>st</sup>	1	UNIT1-ELECTRICAL FUNDAMENTAL Nature of Electricity, Charge, Free Electrons, Electric current.	1 <sup>st</sup>	Familiarization of measuring instruments viz- voltmeter, ammeter, CRO, Wattmeter and multimeter
	2	Electric potential and potential difference, Electrical Energy, Electrical power and their unit.		
	3	RESISTANCE:-Definition, Unit, Laws of resistance, conductivity and resistivity.		
2 <sup>nd</sup>	4	Effect of temperature on resistance, Temperature coefficient of resistance.	2 <sup>nd</sup>	To measure (very low)resistance of an ammeter and (very high)resistance of a voltmeter.
	5	Types of resistance & their applications, Color coding of resistance		
	6	Revision		
3 <sup>rd</sup>	7	Inductors and Capacitors with their wattage consideration.	3 <sup>rd</sup>	To verify Ohm's law by drawing a graph between voltage and current. To observe change in resistance of a bulb in a hot & cold condition using voltmeter & ammeter.
	8	Factors affecting capacitance of a capacitor.		
	9	Capacitors in series and parallel.		
4 <sup>th</sup>	10	UNIT2-DC CIRCUITS & THEOREMS Ohm's law and its verification. Kirchhoff 's current law and Kirchhoff 's voltage law	4 <sup>th</sup>	To determine the value of resistance using color coding method. Verification of Kirchhoff's current and voltage laws in a DC circuit on bread board.
	11	Star-Delta conversion.		
	12	Voltage and current sources, symbol and graphical representation, characteristics of ideal and practical sources.		
5 <sup>th</sup>	13	Mesh and Loop analysis.	5 <sup>th</sup>	Verification of Thevenin's theorem./ viva
	14	Thevenin's theorem.		
	15	Norton's theorem.		
6 <sup>th</sup>	16	Superposition's theorem	6 <sup>th</sup>	Verification of Norton's theorem. Verification of Superposition theorem.
	17	Maximum Power Transfer theorem.		
	18	Revision		
7 <sup>th</sup>	19	UNIT3-AC CIRCUITS AC Fundamental: Cycle, frequency, time	7 <sup>th</sup>	Verification of Maximum Power Transfer theorem./ viva

		period, amplitude.		
	20	Difference in AC and DC.		
	21	Instantaneous value, average value, r.m.s. value, maximum value, form factor and peak factor.		
8 <sup>th</sup>	22	Concept of conductance, susceptance, admittance, impedance.	8 <sup>th</sup>	Alternating voltage applied to Resistance & inductance and R & C in series.
	23	Concept of inductive and capacitive resistance.		
	24	RL-RC Circuits		
9 <sup>th</sup>	25	Introduction to series and parallel resonance and its conditions.	9 <sup>th</sup>	To find the VI relationship in a single phase R-L series circuit and draw their impedance triangles.
	26	Power in pure resistance, inductance and capacitance.		
	27	Power in combined RLC circuits.		
10 <sup>th</sup>	28	Power factor, active and reactive power: Definition and significance.	10 <sup>th</sup>	To find the VI relationship in a single phase R-C series circuit and draw their impedance triangles.
	29	UNIT4-ELECTRO MAGNETIC CIRCUIT Concept of electro-magnetic field produced by flow of electric current, magnetic circuit.		
	30	Concept of magneto-motive force (MMF), Flux, reluctance, permeability.		
11 <sup>th</sup>	31	Analogy between electric and magnetic circuit.	11 <sup>th</sup>	Measurement of power and power factor in a single phase R,L,C circuit.
	32	Faraday's laws of electro-magnetic induction.		
	33	Principle of self and mutual induction, self and mutually induced emf.		
12 <sup>th</sup>	34	Energy stored in an inductor, series and parallel combination of inductors.	12 <sup>th</sup>	Calculation of active and reactive powers in single phase RLC circuits
	35	UNIT5-BATTERIES Basic idea of primary and secondary cells		
	36	Construction, working principle and applications of Lead-Acid.		
13 <sup>th</sup>	37	Construction, working principle and applications of Nickel, Cadmium batteries.	13 <sup>th</sup>	To test a lead-acid battery and measure its specific gravity.
	38	Construction, working principle and applications of Lithium batteries.		
	39	Series and parallel connections of batteries.		
14 <sup>th</sup>	40	Introduction to maintenance free batteries	14 <sup>th</sup>	Care and maintenance of lead acid battery./ viva
	41	Disposal of batteries.		
	42	General idea of solar cells, solar panels and their applications.		
15 <sup>th</sup>	43	Revision	15 <sup>th</sup>	Revision
	44	Revision		
	45	Revision		