

Lesson Plan

Name of Faculty : Arshad Jamal
Discipline : Electronics & Communication Engineering
Semester : 1st
Subject : F E E
Lesson Plan Duration : 16 weeks
Work load (Lecture /Practical) per week (in hours): Lectures-03, Practical-04

week	Lecture Day	Topic (Including Assignment/ Test	Practical Day	Topic
1 st	1	UNIT1-ELECTRICAL FUNDAMENTAL Nature of Electricity, Charge, Free Electrons, Electric current.	1 st	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 nd	4	Effect of temperature on resistance, Temperature coefficient of resistance.	2 nd	To measure (very low)resistance of an ammeter and (very high)resistance of a voltmeter.
	5	Types of resistance & their applications		
	6	Color coding of resistance		
3 rd	7	Revision	3 rd	To verify Ohm's law by drawing a graph between voltage and current.
	8	Inductors and Capacitors with their wattage consideration.		
	9	Factors affecting capacitance of a capacitor.		
4 th	10	Capacitors in series and parallel.	4 th	To observe change in resistance of a bulb in a hot & cold condition using voltmeter & ammeter.
	11	UNIT2-DC CIRCUITS & THEOREMS Ohm's law and its verification. Kirchhoff's current law and Kirchhoff's voltage law		
	12	Star-Delta conversion.		
5 th	13	Voltage and current sources, symbol and graphical representation, characteristics of ideal and practical sources.	5 th	To determine the value of resistance using color coding method.
	14	Mesh and Loop analysis.		
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6 th	16	Thevenin's theorem.	6 th	Verification of Kirchhoff's current and voltage laws in a DC circuit on bread board.
	17	Norton's theorem.		
	18	Superposition's theorem		
7 th	19	Maximum Power Transfer theorem.	7 th	Verification of Thevenin's theorem.
	20	Revision		
	21	Expert Lecture/ Quiz		

8 th	22	UNIT3-AC CIRCUITS AC Fundamental: Cycle, frequency, time period, amplitude.	8 th	Verification of Norton's theorem.
	23	Difference in AC and DC.		
	24	Instantaneous value, average value, r.m.s. value, maximum value, form factor and peak factor.		
9 th	25	Concept of conductance, susceptance, admittance, impedance.	9 th	Verification of Superposition theorem.
	26	Concept of inductive and capacitive resistance.		
	27	RL-RC Circuits		
10 th	28	Introduction to series and parallel resonance and its conditions.	10 th	Verification of Maximum Power Transfer theorem.
	29	Power in pure resistance, inductance and capacitance.		
	30	Power in combined RLC circuits.		
11 th	31	Power factor, active and reactive power: Definition and significance.	11 th	AC applied to R & L and R & C in series.
	32	UNIT4-ELECTRO MAGNETIC CIRCUIT Concept of electro-magnetic field produced by flow of electric current, magnetic circuit.		
	33	Concept of magneto-motive force (MMF), Flux, reluctance, permeability.		
12 th	34	Analogy between electric and magnetic circuit.	12 th	To find the VI relationship in a single phase R-L series circuit and draw their impedance Δ 's.
	35	Faraday's laws of electro-magnetic induction.		
	36	Principle of self and mutual induction, self and mutually induced emf.		
13 th	37	Energy stored in an inductor, series and parallel combination of inductors.	13 th	To find the VI relationship in a single phase R-C series circuit and draw their impedance Δ 's.
	38	Revision		
	39	Expert Lecture/ Quiz.		
14 th	40	UNIT5-BATTERIES Basic idea of primary and secondary cells	14 th	Measurement of power and power factor in a single phase R,L,C circuit.
	41	Construction, working principle and applications of Lead-Acid.		
	42	Construction, working principle and applications of Nickel, Cadmium batteries.		
15 th	43	Construction, working principle and applications of Lithium batteries.	15 th	Calculation of active and reactive powers in the circuit.
	44	Series and parallel connections of batteries.		
	45	Introduction to maintenance free batteries		
16 th	46	Disposal of batteries.	16 th	To test a lead-acid battery and measure its specific gravity.
	47	General idea of solar cells, solar panels and their applications.		
	48	Expert Lecture/ Quiz.		