

GOVT. POLYTECHNIC, PANCHKULA

**DEPARTMENT OF ELECTRONICS AND
COMMUNICATION ENGINEERING**

LESSON PLANS

(August-November 2026)

Subject: FEEE

Name of the Faculty: Ms. Priyanka Kundu	
Discipline: ECE	
Subject: FEEE	Semester: 1st
Lesson Plan Duration: 15-16 Weeks	
Work load (Lecture /Practical) per week (in hours): 03 hours (Theory), 04 hours (practical)	

Week	Lecture	Topic (Including Assignment/ Test	Practical	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, Color coding of resistance		
	6	Revision		
3 rd	7	Inductors and Capacitors with their wattage consideration.	3 th	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 th	10	UNIT2-DC CIRCUITS & THEOREMS Ohm's law and its verification. Kirchhoff 's current law and Kirchhoff 's voltage law	4 th	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 th	13	Mesh and Loop analysis.	5 th	Verification of Thevenin's theorem./ viva
	14	Thevenin's theorem.		
	15	Norton's theorem.		

6 th	16	Superposition's theorem	6 th	Verification of Norton's theorem. Verification of Superposition theorem.
	17	Maximum Power Transfer theorem.		
	18	Revision		
7 th	19	UNIT3-AC CIRCUITS AC Fundamental: Cycle, frequency, time period, amplitude.	7 th	Verification of Maximum Power Transfer theorem./ viva
	20	Difference in AC and DC.		
	21	Instantaneous value, average value, r.m.s. value, maximum value, form factor and peak factor.		
8 th	22	Concept of conductance, susceptance, admittance, impedance.	8 th	Alternating voltage applied to Resistance & inductance and R & C in series.
	23	Concept of inductive and capacitive resistance.		
	24	RL-RC Circuits		
9 th	25	Introduction to series and parallel resonance and its conditions.	9 th	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 th	28	Power factor, active and reactive power: Definition and significance.	10 th	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 th	31	Analogy between electric and magnetic circuit.	11 th	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 th	34	Energy stored in an inductor, series and parallel combination of inductors.	12 th	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 th	37	Construction, working principle and applications of Nickel, Cadmium batteries.	13 th	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 th	40	Introduction to maintenance free batteries	14 th	Care and maintenance of lead acid battery./ viva
	41	Disposal of batteries.		
	42	General idea of solar cells, solar panels and their applications.		
15 th	43	Revision	15 th	Revision
	44	Revision		
	45	Revision		