Govt. Polytechnic Hamirpur (H.P.)
Lesson Planning (Theory)

Branch : ELECTRICAL ENGG

Subject : ELECTRICAL CIRCUITS

Teacher: ANIL KUMAR

Semester: 3rd

Session: AUG-2025

Class Room: L1

S.No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	12	Single Phase A.C Series Circuits	Generation of alternating voltage, Phasor representation of sinusoidal quantities R, L, C circuit elements its voltage and current response R-L, R-C, R-L-C combination of A.C series circuit, impedance, reactance, impedance triangle, Power factor, active power, reactive power, apparent power, power triangle and vector diagram, Resonance, Bandwidth, Quality factor and voltage magnification in series R-L, R-C, RL-C circuit	R1,R2	
2	13	Single Phase A.C Parallel Circuits	R-L, R-C and R-L-C parallel combination of A.C. circuits. Impedance, reactance, phasor diagram, impedance triangle R-L, R-C, R-L-C parallel A.C. circuits power factor, active power, apparent power, reactive power, power triangle Resonance in parallel R-L, R-C, R-L-C circuit, Bandwidth, Quality factor and voltage magnification	R1,R2	
3	16	Three Phase Circuits	Phasor and complex representation of three phase supply, Phase sequence and polarity Types of three-phase connections, Phase and line quantities in three phase star and delta system, Balanced and unbalanced load, neutral shift in unbalanced load. Three phase power, active, reactive and apparent power in star and delta system	R1,R2	
4	13	Network Reduction and Principles of Circuit Analysis	Source transformation, Star/delta and delta/star transformation Mesh Analysis, Node Analysis	R1,R2	
5	16	Network Theorems	Superposition theorem. Thevenin's theorem. Norton's theorem Maximum power transfer theorem Reciprocity theorem Duality in electric circuits.	R1,R2	

REFERENCE RESOURCES

R1- Ashfaq Husain, Networks & Systems, Khanna Book Publishing, New Delhi

R2- Gupta, B.R; Singhal, Vandana;, Fundamentals of Electrical Network, S.Chand and Co

01/08/25

Signature of Teacher

(Anil Kumar)

Signature of H.O.D