GOVERNMENT GIRLS POLYTECHNIC BILASPUR

DEPARTMENT OF ELECTRONICS

LESSON PLAN

Session : July-Dec 2025

Course Name : Network Analysis
Subject Code : 2028371(028)
Name of Subject teacher : SUMEET KUMAR DEWANGAN
Lecture plus Tutorial/Week : 3
Total Period Planned : 38

Course Outcomes	Topics / Subtopics to be Covered	No. of Periods Planned
CO-1 Analyze electrical circuit using basic law.	**Unit 1 – Basic Concepts of Networks**	
	• Ohm`s Law	1
	• Kirchhoff`s Current Law (KCL) and Kirchhoff`s Voltage Law (KVL)	2
	• Controlled and Independent Sources	1
	• Source Transformation (Voltage to Current and Current to Voltage)	1
	• Voltage Division and Current Division Techniques	2
	• Star–Delta Transformation	1
	• Nodal Analysis and Super Node	2
	• Mesh Analysis and Super Mesh	2
CO-2 Apply basic circuit theorems to simplify complicated circuits.	**Unit 2 – Network Theorems**	
	• Linearity and Superposition Theorem	2
	• Thevenin`s and Norton`s Theorem	2
	• Milliman and Dual of Milliman Theorem	1
	• Reciprocal Theorem	1
	• Maximum Power Transfer Theorem	1
	• Numerical Problems / Applications	1
CO-3 Analyze series and parallel resonance condition in the given circuit.	**Unit 3 – Resonance and Filter Circuits**	
	• Series Resonance: Circuit, Resonant Frequency, Impedance	2
	• Quality Factor, Bandwidth and	1

Course Outcomes	Topics / Subtopics to be Covered	No. of Periods Planned
	Selectivity of Series Resonance	
	• Parallel Resonance: Circuit and Resonant Frequency	1
	• Quality Factor, Bandwidth and Selectivity of Parallel Resonance	1
	• Basics of Filters: Cutoff Frequency, Pass Band, Stop Band	1
	• Types of Filters: LPF, HPF, BPF, BSF, Notch Filter	1
CO-4 Analyze the circuit using two port network theorems.	**Unit 4 – Two Port Network**	
	• Z-Parameters	1
	• Y-Parameters	1
	• Transmission Parameters	1
	• Hybrid Parameters	1
	• Condition for Reciprocity and Symmetry	1
	• Interconnection of Two Port Networks (Series, Parallel, Cascade)	1
CO-5 Analyze basic switching conditions and transient response.	**Unit 5 – Transient and Steady State Analysis**	
	• Transient and Steady State Concepts	1
	• Behavior of L and C at Initial and Final Conditions	1
	• Transient Analysis of RL and RC Circuits	2
	• Application of Laplace Transformation in Circuit Analysis	1