GOVERNMENT GIRLS POLYTECHNIC BILASPUR

DEPARTMENT OF ELECTRONICS

LESSON PLAN

Session : July-Dec 2025

Course Name : Analog Electronic Circuit – I
Subject Code : 2028373(028)
Name of Subject teacher : SUMEET KUMAR DEWANGAN
Lecture plus Tutorial/Week : 3
Total Period Planned : 40

Course Outcomes	Topics / Subtopics to be Covered	No. of Periods Planned
CO-1 Analyze transistor amplifier at low frequency.	**Unit 1 – Transistor at Low Frequency**	
	• Need for h-parameter Model	1
	• Calculation of Input and Output Impedance	1
	• Current Gain and Voltage Gain using h-parameters	1
	• Comparison of CE, CB and CC Amplifiers	2
	• Load Line Analysis	1
	• Miller's Theorem in CE Amplifier	1
	• Simplified Transistor Model	1
CO-2 Analyze single stage and multistage transistor amplifiers at high frequency.	**Unit 2 – Transistor at High Frequency and Multistage Amplifier**	
	• Hybrid π Model in CE Configuration	2
	• Hybrid π Model in CC Configuration	1
	• Relation between Hybrid π and h-parameter Model	1
	• Need of Multistage Amplifier	1
	• Direct Coupled Multistage Amplifier	1
	• RC Coupled Multistage Amplifier	2
	• Transformer Coupled Multistage Amplifier	1
	• Selection of Amplifier Configuration	1
CO-3 Test the performance of feedback amplifier.	**Unit 3 – Feedback Amplifiers**	
	• Positive and Negative Feedback	1
	• Effect of Negative Feedback on Gain and Stability	1
	• Effect on Distortion, Noise and Bandwidth	1
	• Effect on Input and Output Impedance	1
	• Feedback Topologies (Voltage Series, Voltage Shunt, Current Series, Current Shunt)	2
	• Distortion in Amplifiers	1
	• Noise in Amplifier Circuits	1
CO-4 Build and test various types of oscillators.	**Unit 4 – Oscillators**	
	• Concept of Oscillation and Barkhausen Criteria	2
	• Mechanism of Starting and Stabilization of Oscillations	1

	• RC Phase Shift Oscillator	1
	• Wien Bridge Oscillator	1
	• Resonant Oscillators (Colpitts and Hartley)	2
	• Crystal Oscillator	1
	Unit 5 – Power Amplifier and Tuned Amplifier	
CO-5 Maintain power amplifiers and tuned amplifiers used in various electronics circuits.	• Class A, B, AB and C Amplifiers	2
	• Voltage vs Power Amplifier	1
	• Transformer Coupled Class A Amplifier	1
	• Class B Push Pull Amplifier	1
	• Class C Amplifier	1
	• Tuned Amplifier: Quality Factor and Bandwidth	1
	• RF Amplifier: Single Tuned and Double Tuned	1