GIETPOLYTECHNIC,JAGATPUR,CUTTACK

LESSONPLAN

Discipline: ETC Engineering.	Semester:- 4TH	Name of the Teaching Faculty:- Pradeepta prajnaranjan swain
Subject:- Analog circuits [TH-1]	No of Days/per Week Class Allotted: 03	Semester-4TH From:22.12.2025 To:18.04.2026 No of Weeks:-15
Week	**Class/Day**	**Theory Topics**
1st	1st	**DIODE CIRCUITs** 1.1 Half Wave & Full Wave Rectifiers with Concept of Filter Circuit.
	2nd	1.2 Different type of Non-linear circuits - Clipper, diode series &shunt, positive& negative biased & unbiased and combinational clipper clippers circuit & its application.
	3rd	1.3 Different type of Clamper circuit (positive & negative clampers) & its application
2nd	1st	**AMPLIFIER** 2.1 Amplifier models: 2.1.1 Voltage amplifier 2.1.2 Current amplifier
	2nd	2.1.3 Trans-conductance amplifier 2.1.4 Trans-resistance amplifier
	3rd	2.2 Small signal analysis 2.3 Low frequency transistor models
3rd	1st	2.4 Estimation of voltage gain, input resistance, output resistance
	2nd	2.5 Design procedure for particular specifications 2.6 Low frequency analysis of multistage amplifiers.
	3rd	2.7 High frequency transistor models 2.8 Frequency response of single stage and multistage amplifiers, cascade amplifier
4th	1st	**TUNED AMPLIFIER** 3.1 Defined and classify Tuned amplifier
	2nd	3.2 Explain parallel Resonant circuit
	3rd	3.3 Resonance Curve & sharpness of Resonance.
5th	1st	3.4 Working principle of Single tuned Voltage & Double tuned Amplifier & its limitation
	2nd	**OPERATIONAL AMPLIFIER** 4.1 Differential amplifier & explain its configuration with significance 4.2 Op-Amp 4.2.1 Block diagram of Op-Amp 4.2.2 Symbol of Op-Amp 4.2.3 Characteristics Op-Amp 4.2.4 Open loop and closed loop amplifier 4.2.5 Virtual ground concept 4.2.6 IC-741 and its pin configuration
	3rd	4.3 Op-Amp parameters 4.3.1 Input offset voltage 4.3.2 Output offset voltage 4.3.3 Input offset current 4.3.4 Input bias current
6th	1st	4.3.5 Common Mode Rejection Ratio 4.3.6 Slew rate
	2nd	4.3.7 Input and output Impedance 4.3.8 Bandwidth and gain bandwidth product 4.3.9 Drift parameters

	3rd	4.4 Discuss the types of integrated circuits, manufacturer's designations of ICs, Package types, pin identification and temperature and ordering information
7th	1st	4.5 Draw and explain the Open Loop configuration (inverting, non-inverting Amplifier)
	2nd	4.6 Draw and explain the Closed loop configurations: inverting and Non inverting
	3rd	**APPLICATION OF OPERATIONAL AMPLIFIER** 5.1 Basic mathematical applications such as adder and subtractor 5.2 Discuss the summing scaling using inverting and non-inverting amplifiers
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	2nd	5.3 DC & AC Amplifies using OP-AMP
	3rd	5.4 Integrator and differentiator using op-amp. 5.5 Sample and Hold circuit
9th	1st	5.7 Concept of Zero-Crossing Detector using Op-Amp (Inverting and Non Inverting type)
	2nd	5.8 Comparator 5.9 Schmitt Trigger 5.10 Peak Detector 5.11 Active filter using OP-AMP
	3rd	5.12 Voltage to Frequency Convertor using Operational Amplifier. 5.13 Frequency to Voltage Conversion using Operational Amplifier
10th	1st	**Integrated Circuit Timer** 6.1 Internal block diagram and pin connection of a 555 timer chip
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	3rd	6.2 Function of Output, Reset, Discharge, Control voltage, Trigger and Threshold terminals of a 555 timer
11th	1st	6.3 555 timer used as, Astable Multi-vibrator, Monostable Multi-vibrator, Pulse width modulator and Pulse position modulator
	2nd	**Power Supply and Regulated Power Supply** 7.1 Design a full wave bridge rectifier circuit by choosing the proper size of transformer, diode and capacitors
	3rd	7.2 Measure the percent regulation and percent ripple of dc power suppl
12th	1st	7.3 Design a bipolar unregulated power supply
	2nd	7.4 Design a fixed dual voltage power supply using 7800 and 7900n series of IC three terminal regulator
	3rd	7.5 Design an adjustable dual voltage regulated power supply using LM317 and LM337 chips
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14th	1st	Doubt clearing class
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	3rd	Doubt clearing class

Pradeepta Prajharanjan Swain.
Sign. of faculty 23.12.25

23.12.25
Sign. of sr. lecturer

Head of Dept. (HOD)

23.12.25
Sign. of principal