

LESSON PLAN SESSION JAN. – JUNE 2024

SUBJECT: Analog Electronic Circuit-II

SEMESTER: 4th

BRANCH: - Electronics and Telecommunication Engineering

UNIT NUMBER	NAME OF THE TOPIC	NO OF CLASS REQUIRED	TOTAL CLASSES	REMARK
Unit-1.0 Fundamentals of Operational Amplifier(OP- AMP)	1.1 Working principle and characteristics of basic differential amplifier	01	09	
	1.2 Block diagram of OP-AMP and functions of each block, ideal characteristics of OP-AMP, equivalent circuit of practical OP-AMP, virtual ground concept	02		
	1.3 OP-AMP IC configuration and various IC packages of OP-AMP, pin configuration of OP-AMP ICs and features of data sheet,	02		
	1.4 Electrical parameters of OP-AMP: voltage gain, input resistance, output resistance, CMRR, slew rate, input offset voltage, input offset currents and bandwidth.	02		
	<ul style="list-style-type: none"> • Concepts beyond class 	01		
	<ul style="list-style-type: none"> • QUIZ. • Doubt clearing session 	01		ASSIGNMENT -1
Unit-2.0 Basic OP- AMP Applications	2.1 Inverting and Non-inverting amplifiers using OP-AMP	02	10	
	2.2 OP-AMP as voltage follower, scaling amplifiers, adder, subtractor, integrator and differentiator, Log amplifier	02		
	2.3 Instrumentation amplifier:-circuit diagram and its working	01		
	2.4 Sample/hold circuit- working principle	01		
	2.5 Precision rectifiers: Circuit diagram Working ,function	02		
	<ul style="list-style-type: none"> • Concepts beyond class 	01		
	<ul style="list-style-type: none"> • QUIZ • Doubt clearing session 	01		ASSIGNMENT-2
Unit-3.0 Active Filters and Oscillators using OP- AMP	3.1 Active Filter: Advantages and frequency response characteristics of active filters, parameters of filters: stop band ,pass band, attenuation in stop and pass band, frequency, phase and amplitude response	02	10	
	3.2 General idea about types: Low pass, High pass, Band pass, Band stop, notch and orders of active filters: First, second and higher order	01		
	3.3 Wein bridge Oscillators using OP-AMP, circuit diagram, working and frequency of oscillation.	01		
	3.4 Phase shift oscillator using OP-AMP, circuit diagram, working and frequency of oscillation.	02		

	Derivation of frequency of oscillation of Wien Bridge oscillator, Numericals	02		
	<ul style="list-style-type: none"> • Concepts beyond class 	01		
	<ul style="list-style-type: none"> • QUIZ • Doubt clearing session 	01		ASSIGNMENT-3
Unit-4.0 Comparators and Converters using OP-AMP	<ul style="list-style-type: none"> • OP-AMP based Comparators- types and characteristics 	02	10	
	4.2 OP-AMP based Zero crossing detectors	01		
	4.3 OP-AMP based Schmitt trigger- types and characteristics	03		
	4.4 OP-AMP based Voltage to frequency converter, basic principle and circuit diagram	01		
	4.5 OP-AMP based Voltage to time converter; basic principle and it's circuit diagram	01		
	<ul style="list-style-type: none"> • Concepts beyond class 	01		
	<ul style="list-style-type: none"> • QUIZ • Doubt clearing session 	01		
Unit 5.0 Common Linear ICs and it's Applications	5.1 IC 555 timer- functional block diagram, pin configuration	01	09	
	5.2 Monostable multivibrator and its applications like: frequency divider, PWM and PPM,	01		
	5.3 Astable multivibrator and its applications like: square wave generator and VCO .	01		
	5.4 PLL- block diagram, basic operation, parameters, transfer characteristics, pin configuration of IC 565	01		
	5.5 Transfer characteristics, pin configuration of IC 565	01		
	5.6 Three terminal voltage regulator IC: 78XX and 79XX, block diagram, performance parameters, pin configuration and typical connection of IC 7805.	01		
	5.7 Pin configuration and functional block diagram of IC 723, basic low and high voltage regulators application of IC 723.	01		
	<ul style="list-style-type: none"> • Concepts beyond class 	01		
	<ul style="list-style-type: none"> • QUIZ • Doubt clearing session 	01		
Total Classes Required		48	48	

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