UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

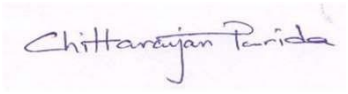
DISCIPLINE: Electronics & TeleCommunicat	SEMESTER: 6TH Sem	NAME OF THE TEACHING FACULTY: Er. YARJILA GAJNI		
SUBJECT:		Semester From Date:14/01/2024		
Th.3- DIGITAL	No of Days/Per week class allotted: 4 Class	To Date:26/04/2024		
SIGNAL	P/W(60)			
PROCESSING				
		No. Of Weeks: 15		
WEEK	**CLASS DAY**	**THEORY TOPICS**	**REMARKS**	
		Basics of Signals,		
	1st	Systems & Signal processing- basic	Date	Dean/Principal
		element of a digital		
		signal processing system		
		Compare the		
	2nd	advantages of digital signal processing over		
1st		analog signal		
		processing.		
		Classify signals - Multi		
		channel& Multi-		
	3rd	dimensional		
		signalsContinuous time		
		verses Discrete -times		
		Signal.		
	4th	Continuous valued verses Discrete -valued		
		signals		
	1st	Concept of frequency in continuous time & discrete time signalsContinuous-time sinusoidal signals		

2nd	2nd	Discrete-time sinusoidal signals-Harmonically related complex exponential.		
	3rd	Analog to Digital & Digital to Analog conversion & explain		
	4th	Sampling of Analog signal, b. The sampling theorem		
3rd	1st	Quantization of continuous amplitude signals, d. Coding of quantized sample.		
	2nd	Digital to analog conversion. f. Analysis of digital systems signals vs. discrete time signals systems.		
	3rd	Concept of Discrete time signals.		
	4th	Elementary Discrete time signals.		
4th	1st	Classification Discrete time signal.		
	2nd	Simple manipulation of discrete time signal.		
	3rd	Discrete time system. Input-output of system		
	4th	Block diagram of discrete- time systems		
5th	1st	Classify discrete time system. Inter connection of discrete - time system		
	2nd	Discrete time time-invariant system. Different techniques for the Analysis of linear system.		

	3rd	Resolution of a discrete time signal in to impulse		
	4th	Response of LTI system to arbitrary inputs using convolution sum		
6th	1st	Convolution & interconnection of LTI system - properties. Study systems with finite duration and infinite duration impulse response.		
	2nd	Discrete time system described by difference equation. Recursive & non-recursive discrete time system.		
	3rd	Determine the impulse response of linear time invariant recursive system.		
	4th	Correlation of Discrete Time signals		
7th	1st	Z-transform & its application to LTI system.		
	2nd	Direct Z-transform.		
	3rd	Inverse Z-transform		
	4th	Various properties of Z-transform.		
8th	1st	Rational Z-transform.		
	2nd	Poles & zeros		
	3rd	Pole location time domain behaviour for casual signals		
	4th	Pole location time domain behaviour for casual signals		
	1st	System function of a linear time invariant system.		

9th	2nd	Discuss inverse Z-transform.		
	3rd	Inverse Z-transform by partial fraction expansion		
	4th	Inverse Z-transform by partial fraction expansion		
10th	1st	Inverse Z-transform by contour Integration		
	2nd	Inverse Z-transform by contour Integration		
	3rd	DISCUSS FOURIER TRANSFORM: ITS APPLICATIONS PROPERTIES.		
	4th	Concept of discrete Fourier transform.		
11th	1st	Frequency domain sampling and reconstruction of discrete time signals.		
	2nd	Discrete Time Fourier transformation(DTFT)		
	3rd	Discrete Fourier transformation (DFT).		
	4th	Discrete Fourier transformation (DFT).		
12th	1st	Compute DFT as a linear transformation.		
	2nd	Relate DFT to other transforms.		
	3rd	Relate DFT to other transforms.		
	4th	Property of the DFT		
13th	1st	Multiplication of two DFT & circular convolution		
	2nd	Multiplication of two DFT & circular convolution		
	3rd	Compute DFT & FFT algorithm.		

	4th	Direct computation of DFT.		
14th	1st	Divide and Conquer Approach to computation of DFT		
	2nd	Radix-2 algorithm. (Small Problems)		
	3rd	Radix-2 algorithm. (Small Problems)		
	4th	Application of FFT algorithms		
15th	1st	Application of FFT algorithms		
	2nd	Introduction to digital filters.(FIR Filters)& General considerations		
	3rd	Introduction to DSP architecture,		
	4th	Familiarisation of different types of processor		



HOD **DEAN** **PRINCIPAL**