

Vedang Institute of Technology, 2nd Shift

Khurda

Department of Electrical & Electronics Engineering

Lesson Plan for Even Semester

Course: Diploma in Engineering

Teachers Name: Sarmistha Pradha

Semester: 6th

Subject : DIGITAL SIGNAL PROCESSING

Session Duration: Session Duration: 2020-21

Classes From: 19/04/2021 to 13/08/2021

Date	Module	Topics To Be Covered
1st	1st	Discuss Signals, Systems & Signal processing.
	2nd	Explain basic element of a digital signal processing system.
	3rd	Compare the advantages of digital signal processing over analog signal processing.
	4th	Classify signals
2nd	1st	Multi channel & Multi dimensional signals.
	2nd	Continuous time verses Discrete -time Signal.
	3rd	Continuous valued verses Discrete -valued signals.
	4th	Discuss the concept of frequency in continuous time & discrete time signals.
3rd	1st	Continuous-time sinusoidal signals.
	2nd	Discrete-time sinusoidal signals.
	3rd	Harmonically related complex exponential.
	4th	Discuss Analog to Digital & Digital to Analog conversion & explain the following.
4th	1st	Sampling of Analog signal.
	2nd	The sampling theorem.
	3rd	Quantization of continuous amplitude signals.
	4th	Coding of quantized sample.
5th	1st	Digital to analog conversion.
	2nd	Analysis of digital systems signals vs. discrete time signals systems.
	3rd	State and explain discrete time signals.
	4th	Discuss some elementary discrete time signals.

6th	1st	Classify discrete time signal.
	2nd	Discuss simple manipulation of discrete time signal.
	3rd	Discuss discrete time system.
	4th	Describe input-output of system.
7th	1st	Draw block diagram of discrete- time systems
	2nd	Classify discrete time system.
	3rd	Discuss inter connection of discrete -time system.
	4th	Discuss discrete time time-invariant system.
8th	1st	Discuss different technique for the analysis of linear system.
	2nd	Discuss the resolution of a discrete time signal in to impuse.
	3rd	Discuss the response of LTI system to arbitrary I/Ps using convolution theorem.
	4th	Explain the properties of Convolution & interconnection of LTI system.
9th	1st	Study systems with finite duration and infinite duration impulse response.
	2nd	Discuss discrete time system described by difference equation.
	3rd	Explain recursive & non-recursive discrete time system.
	4th	Determine the impulse response of linear time invariant recursive system.
10th	1st	Discuss Z-transform & its application to LTI system.
	2nd	State & explain direct Z-transform & inverse Z-transform.
	3rd	Discuss various properties of Z-transform.
	4th	Discuss rational Z-transform.
11th	1st	Explain poles & zeros.
	2nd	Determine pole location time domain behavior for casual signals.
	3rd	Describe the system function of a linear time invariant system.
	4th	Determine inverse Z-transform by partial fraction expansion.
12th	1st	Discuss discrete Fourier transform.
	2nd	Determine frequency domain sampling and reconstruction of discrete time signals.
	3rd	State & Explain Discrete Time Fourier transformation(DTFT)
	4th	State & explain Discrete Fourier transformation (DFT).
13th	1st	Compute DFT as a linear transformation.
	2nd	Relate DFT to other transforms.
	3rd	Relate DFT to other transforms.
	4th	Discuss the property of the DFT.
14th	1st	Explain multiplication of two DFT & circular convolution

14th	2nd	Compute DFT algorithm, FFT algorithm.
	3rd	Explain direct computation of DFT.
	4th	Discuss the radix-2 algorithm.
15th	1st	Digital filters.
	2nd	Introduction to DSP architecture, familarisation of different types of processor
	3rd	Revision and Doubt Clearance
	4 th	

Sarmistha Paul
Faculty Signature

A-Smriti Dash
HOD