C.V.RAMAN POLYTECHNIC, BHUBANESWAR

LESSON PLAN
Session (2025-2026)

Discipline: Electronics &Telecommunication Engineering	Semester:6th Semester, Summer/2026	Name of the Faculty: Suchismita Satpathy, Asst. Prof. **Email ID:** suchismita@cvrp.edu.in
Subject: DIGITAL SIGNAL PROCESSING (Th3)	No. Of Days/Week:04	**Start Date:22/12/2025** **End Date:18/04/2026**

Week	Class Day	Theory Topics
1st	1st	Introduction to the subject
	2nd	Basic elements of a digital signal processing system.
	3rd	Compare the advantages of digital signal processing over analog signal processing.
	4th	Classification of signals, Multi channel & Multi dimensional signals.
2nd	1st	Continuous time verses Discrete -times Signal,Continuous valued verses Discrete valued signals.
	2nd	Continuous-time sinusoidal signals.Discrete-time sinusoidal signals. Harmonically related complex exponential
	3rd	Sampling of Analog signal, The sampling theorem
	4th	Sampling of Analog signal, The sampling theorem
3rd	1st	Quantization of continuous amplitude signals,Coding of quantized sample
	2nd	Digital to analog conversion.Analysis of digital systems signals vs. discrete time signals systems.
	3rd	Digital to analog conversion.Analysis of digital systems signals vs. discrete time signals systems.
	4th	Doubt Clearing class of Chapter-1
4th	1st	Doubt Clearing class of Chapter-1
	2nd	Discuss some elementary discrete time signals.Classify discrete time signal.
	3rd	Discuss simple manipulation of discrete time signal.
	4th	Describetionof input-output of system.Draw block diagram of discrete- time systems.
5th	1st	Classify discrete time system.Discuss inter connection of discrete -time system.
	2nd	Discussion of different technique for the analysis of linear system.Discussion of the resolution of a discrete time signal in to impulse.
	3rd	Discussion of differenttechnique for the analysis of linear system.Discussion of the resolution of a discrete time signal in to impulse.
	4th	Discuss the response of LTI system to arbitrary I/Ps using convolution theorem.
6th	1st	Discuss the response of LTI system to arbitrary I/Ps using convolution theorem.
	2nd	Explain the properties of Convolution & interconnection of LTI system.
	3rd	Study systems with finite duration and infinite duration impulse response.

	4th	Study systems with finite duration and infinite duration impulse response.
	1st	Explain recursive & non-recursive discrete time system.
	2nd	Determine the impulse response of linear time invariant recursive system.
7th	3rd	Doubt Clearing class of Chapter-2
	4th	Doubt Clearing class of Chapter-2
	1st	Discuss Z-transform & its application to LTI system. State & explain direct Ztransform.
	2nd	Discuss Z-transform & its application to LTI system. State & explain direct Ztransform.
8th	3rd	Problems of Z-Transform.
	4th	State & explain inverse Z-transform.
	1st	Discuss various properties of Z-transform.
	2nd	Discuss rational Z-transform,Explain poles & zeros.
9th	3rd	Determine pole location time domain behavior for casual signals
	4th	Describe the system function of a linear time invariant system.
	1st	Discuss inverse Z-transform.
	2nd	Determine inverse Z-transform by partial fraction expansion.
10th	3rd	Doubt Clearing class of Chapter-3
	4th	Doubt Clearing class of Chapter-3
	1st	Determine inverse Z-transform by partial fraction expansion.
	2nd	Discuss discrete Fourier transform.Determine frequency domain sampling and reconstruction of discrete time signals.
11th	3rd	Discuss discrete Fourier transform.Determine frequency domain sampling and reconstruction of discrete time signals.
	4th	State & Explain Discrete Time Fourier transformation(DTFT)
	1st	State & explain Discrete Fourier transformation (DFT).
	2nd	Compute DFT as a linear transformation.
12th	3rd	Relate DFT to other transforms.
	4th	Discuss the property of the DFT
	1st	Explain multiplication of two DFT & circular convolution.
	2nd	Doubt Clearing class of Chapter-4
13th	3rd	Doubt Clearing class of Chapter-4
	4th	Compute DFT & FFT algorithm.
	1st	Explain direct computation of DFT
	2nd	Discuss the radix-2 algorithm. (Small Problems)
14th	3rd	Introduction to digital filters.(FIR Filters)
	4th	Introduction to DSP architecture, familarsation of different types of processor
	1st	Doubt Clearing class of Chapter-5
	2nd	Doubt Clearing class of Chapter-5
15th	3rd	Previous Year Semester Question discussion
	4th	Previous Year Semester Question discussion

Concerned Faculty   **H.O.D.**