

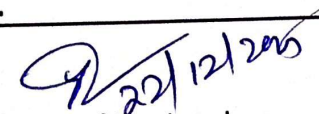
## Lesson Plan

Government Polytechnic Kendrapara

Department of Electronics and Tele-communication Engineering

Discipline: ETC		Semester-6th Summer-2026	Name of the Teaching Faculty: Sri.Jogeswar Naik(Lect. S-II ETC Engg.)
Sl. No.	Subject-Th.3. (DIGITAL SIGNAL PROCESSING )	No. Of Days/Week class alloted:04	Semester From date:-22.12.2025 To date: 18.04.2026 (No of weeks: 15)
	Weeks/Months	Class Day	Topic
1	4th week 22dec to 31st dec	1st	Basics of Signals, Systems & Signal processing.
		2nd	basic element of a digital signal processing system
		3rd	Compare the advantages of digital signal processing over analog signal processing.
		4th	Classify signals - Multi channel& Multi-dimensional signals
2	1st week 2nd jan To 09th jan	1st	Continuous valued verses Discrete -valued signals.
		2nd	Continuous time verses Discrete -times Signal
		3rd	Concept of frequency in continuous time & discrete time signals Continuous-time sinusoidal signals-Discrete-time sinusoidal signals-Harmonically related complex exponential.
		4th	Analog to Digital & Digital to Analog conversion
3	2nd week 12th jan To 17th jan	1st	Explain Sampling of Analog signal, The sampling theorem.
		2nd	Quantization of continuous amplitude signals, Coding of
		3rd	Digital to analog conversion.
		4th	Analysis of digital systems signals vs. discrete time signals systems.
4	3rd week 19th jan To 22th jan	1st	Concept of Discrete time signals,
		2nd	Elementary Discrete time signals.
		3rd	Classification Discrete time signal.
		4th	Simple manipulation of discrete time signal.
5	4th week 27th jan To 31th jan	1st	Discrete time system.
		2nd	Input-output of a system.
		3rd	Block diagram of discrete- time systems.
		4th	Classify discrete time system.
6	1st week 2nd feb To 07th feb	1st	Inter connection of discrete -time system.
		2nd	Discrete time time-invariant system. techniques
		3rd	Different for the Analysis of linear system.
		4th	Resolution of a discrete time signal into impulse
7	2nd week 9th feb To 13th feb	1st	Response of LTI system to arbitrary inputs using convolution sum.
		2nd	Convolution & interconnection of LTI system - properties.
		3rd	Study systems with finite duration and infinite duration impulse response.
		4th	Discrete time system described by difference equation.
		1st	Recursive & non-recursive discrete time system.

8	3rd week 16th feb To 21th feb	2nd	Determine the impulse response of linear time invariant recursive system.
		3rd	Correlation of Discrete Time signals.
		4th	Correlation of Discrete Time signals.
		1st	Z-transform & its application to LTI system.
9	4th week 23th feb To 27th feb	2nd	Compute Direct Z-transform problems.
		3rd	Compute Direct Z-transform problems.
		4th	Inverse Z-transform. Compute Direct Inverse Z-transform problems.
		1st	Various properties of Z-transform.
10	1st week 2nd march To 07th march	2nd	Rational Z-transform.
		3rd	Poles & zeros. Pole location time domain behavior for
		4th	System functions of a linear time invariant system.
		1st	Compute Inverse Z-transform problems. Again.
11	2nd week 9th march To 13th march	2nd	Inverse Z-transform by partial fraction expansion.
		3rd	Inverse Z-transform by contour Integration.
		4th	Doubt clearing class.
		1st	Concepts of discrete Fourier transform. Frequency domain sampling and reconstruction of discrete time signals.
12	3rd week 16th march To 20th march	2nd	Discrete Time Fourier transformation (DTFT) . Discrete Fourier transformation (DFT).
		3rd	Compute DFT as a linear transformation. Relate DFT to
		4th	Property of the DFT. Multiplication of two DFT & circular convolution
		1st	Compute DFT & FFT algorithm. Direct computation of DFT.
13	4th week 23th march To 31th march	2nd	Compute DFT & FFT algorithm. Direct computation of DFT.
		3rd	Divide and Conquer Approach to computation of DFT
		4th	Divide and Conquer Approach to computation of DFT
		1st	Application of FFT algorithms. Introduction to digital filters. (FIR Filters) & General considerations.
14	1st week 02th april To 10th april	2nd	Application of FFT algorithms. Introduction to digital filters. (FIR Filters) & General considerations.
		3rd	Application of FFT algorithms. Introduction to digital filters. (FIR Filters) & General considerations.
		4th	Introduction to DSP architecture.
		1st	Introduction to DSP architecture.
15	2nd week 13th april To 18th april	2nd	Familiarization of different types of processor.
		3rd	Familiarization of different types of processor.
		4th	Doubt clearing class.

  
 Signature of the teacher