

B.TECH III YEAR; SESSION: JAN-JUNE 2024
EC35514: Applied DSP
LECTURE PLAN

Lecture No.	Topic / Sub Topic planned to teach
1.	Unit 1: Introduction, Discrete-time Sequences
2.	Discrete-time systems attributes, DTFT
3.	z-Transform, Properties, Inverse z-transform methods
4.	LCCDE, Unilateral z-Transform
5.	Transform analysis of LSI systems, Frequency analysis
6.	Inverse systems, Linear phase systems
7.	Unit 2: Discrete Fourier Series,
8.	Discrete Fourier Transform (DFT) & its Properties
9.	Linear convolution using DFT
10.	Fast Fourier Transform (FFT) & its techniques
11.	Linear filtering approach for computing DFT
12.	Unit 3: Design of FIR Digital filters: Window method
13.	Park-McClellan's method
14.	Design of IIR Digital Filters
15.	Bilinear Transformation and Impulse Invariant method
16.	Butterworth Approximations
17.	Chebyshev and Elliptic Approximations
18.	Lowpass filters and transformation to Bandpass, Bandstop and High pass filters.
19.	Unit 4: Implementation of Discrete Time Systems: FIR filters
20.	Implementation of Discrete Time Systems: IIR filters
21.	Introduction to finite word length effect
22.	Quantization & its effects in FIR filter Design
23.	Parametric spectral estimation
24.	Non-parametric spectral estimation
25.	Unit 5: Sampling, Reconstruction of signals, Discrete time processing of continuous time signals
26.	Sampling rate conversion using Discrete-time processing
27.	Introduction to multirate signal processing
28.	Identities of Upsampling and Downsampling
29.	Applications of DSP
30.	Applications of DSP