

**DEPARTMENT OF APPLIED ELECTRONICS &
INSTRUMENTATION ENGG.**

**LESSON PLAN
OF
DIGITAL SIGNAL PROCESSING (TH.5)
4TH SEMESTER
ACADEMIC YEAR: 2025-26 (SUMMER)**

BY

NIRANJAN NAYAK

LECTURER STAGE – II (AE&I)



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Website : <https://bosecuttack.org.in>

Subject:-Digital Signal Processing(TH5(C))
Branch:-AE&I
Semester:-4th

No of Period:-45(3L/Week)
Name of Faculty:-Niranjan Nayak
Session:-2025-2026(summer)

Period	Week	Date	Topic to be covered
1	1	22.12.2025	UNIT-1: Discrete-time signals and systems 1.1 Discrete time signals and systems: Sequences; representation of signals on orthogonal basis;
2		24.12.2025	1.1 Discrete time signals and systems: Sequences; representation of signals on orthogonal basis;
3		26.12.2025	1.2 Representation of discrete systems using difference equations, Sampling and reconstruction of signals- aliasing; Sampling theorem and Nyquist rate.
4	2	02.01.2026	1.2 Representation of discrete systems using difference equations, Sampling and reconstruction of signals- aliasing; Sampling theorem and Nyquist rate.
5		05.01.2026	1.2 Representation of discrete systems using difference equations, Sampling and reconstruction of signals- aliasing; Sampling theorem and Nyquist rate.
6		07.01.2026	Revision of Unit-1
7	3	09.01.2026	UNIT-2: Z-transform 2.1 Z-Transform,
8		12.01.2026	2.2 Region of Convergence,
9		16.01.2026	2.3 Properties of Z-transform for causal signals
10	4	19.01.2026	2.3 Properties of Z-transform for causal signals
11		21.01.2026	2.4 Interpretation of stability in Z-domain,
12		28.01.2026	2.5 Inverse Z-transforms.
13	5	30.01.2026	2.5 Inverse Z-transforms.
14		02.02.2026	Revision of Unit-2
15		04.02.2026	CLASS TEST-1(Unit-1 & Unit-2)
16	6	06.02.2026	UNIT-3: Discrete Fourier Transform 3.1 Frequency Domain Analysis,
17		09.02.2026	3.1 Frequency Domain Analysis
18		11.02.2026	3.2 Discrete Fourier Transform (DFT), Properties of DFT
19	7	13.02.2026	3.2 Discrete Fourier Transform (DFT), Properties of DFT
20	8	16.02.2026	3.3 Convolution of signals,
21		18.02.2026	3.3 Convolution of signals,
22		20.02.2026	3.4 Fast Fourier Transform Algorithm, Parseval's Identity
23	9	23.02.2026	3.4 Fast Fourier Transform Algorithm, Parseval's Identity
24		25.02.2026	3.5 Implementation of Discrete Time Systems.
25		27.02.2026	3.5 Implementation of Discrete Time Systems.
26	10	02.03.2026	Revision of Unit-3/
27		06.03.2026	QUESTIONS PRACTICE (PYQ'S)
28		09.03.2026	UNIT-4: Design of Digital filters 4.1 Design of FIR Digital filters: Window method, ParkMcClellan's method.
29	11	11.03.2026	4.1 Design of FIR Digital filters: Window method, ParkMcClellan's method.
30		13.03.2026	4.1 Design of FIR Digital filters: Window method, ParkMcClellan's method.

31		16.03.2026	4.2 Design of IIR Digital Filters: Butterworth, Chebyshev and Elliptic Approximations;
32	12	18.03.2026	4.2 Design of IIR Digital Filters: Butterworth, Chebyshev and Elliptic Approximations;
33		20.03.2026	4.2 Design of IIR Digital Filters: Butterworth, Chebyshev and Elliptic Approximations;
34	13	23.03.2026	4.3 Low-pass, Band-pass, Band-stop and High pass filters.
35		25.03.2026	4.3 Low-pass, Band-pass, Band-stop and High pass filters.
36		30.03.2026	4.3 Low-pass, Band-pass, Band-stop and High pass filters.
37	14	06.04.2026	Revision of Unit-4
38		08.04.2026	QUESTIONS PRACTICE (PYQ'S)
39	15	10.04.2026	CLASS TEST-2(Unit-3&Unit-4)
40		13.04.2026	UNIT-5:Applications of Digital Signal Processing
41		15.04.2026	5.1 Application of DSP to Speech signal processing.
42	16	17.04.2026	5.1 Application of DSP to Speech signal processing.
43		17.04.2026	5.2 Application of DSP to Radar signal processing.
44	17	17.04.2026	Revision of Unit-5 and QUESTIONS PRACTICE (PYQ'S)



Signature of Faculty



Signature of HOD