VIVEKANANDHA
COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)
Elayampalayam,Tiruchengode-637205
Department of Electronics and Communication Engineering

Lesson Plan
U15EC302 & SIGNALS AND SYSTEMS

Unit I Classisfication of Signals and Systems:

Session No.	Topics to be covered	Duration in Minutes	Teaching Aid	Ref.
1)	Introduction to Signals	45m	BB	T1
2)	Continuous Time and Discrete Time signals	45m	BB	T1
3)	Step ,Ramp, Pulse	45m	BB	T1
4)	impulse, Exponential	45m	BB	T1
5)	Classification of CT and DT Signals – Periodic and Aperiodic	45m	BB	T1
6)	Deterministic & Random signals, Energy & Power signals.	45m	BB	T1,T2
7)	CT systems and DT systems- Classification of systems	45m	BB	T1
8)	Basic Properties of Systems	45m	BB	T1
9)	Static & Dynamic, Linear & Nonlinear,	45m	BB	T1,T2
10)	Time-variant & Time-invariant,	45m	BB	T1
11)	Causal & Noncausal, Stable & Unstable.	45m	BB	T1
12)	problems	45m	BB	T1

Unit II Analysis of Continuous Time Signals:

Session No.	Topics to be covered	Duration in Minutes	Teaching Aid	Ref.
13)	Fourier series analysis	45m	BB	T1
14)	spectrum of Continuous Time (CT) signals	45m	BB	T1
15)	Problem on Fourier series analysis-spectrum of Continuous Time (CT) signals	45m	BB	T1
16)	Problem on Fourier series analysis-spectrum of Continuous Time (CT) signals	45m	BB	T1
17)	Problem on Fourier series analysis-spectrum of Continuous Time (CT) signals	45m	BB	T1,T2

18)	Fourier transform in signal Analysis	45m	BB	T1
19)	Problems on Fourier transform in signal Analysis	45m	BB	T1
20)	Problems on Fourier transform in signal Analysis	45m	BB	T1
21)	Problems on Fourier transform in signal Analysis	45m	BB	T1
22)	Laplace transform in Signal analysis	45m	BB	T1
23)	Problems on Laplace transform in Signal analysis	45m	BB	T1
24)	Problems on Laplace transform in Signal analysis	45m	BB	T1

Unit III Linear time Invarient-Continous time Systems:

Session No.	Topics to be covered	Duration in Minutes	Teaching Aid	Ref.
25)	Differential Equation	45m	BB	T1
26)	Problems on Differential Equation	45m	BB	T1
27)	Block diagram representation	45m	PPT	T1
28)	impulse response	45m	BB	T1
29)	impulse response	45m	BB	T1,T2
30)	convolution integrals	45m	BB	T1
31)	Problems on convolution integrals	45m	BB	T1,T2
32)	Problems on convolution integrals	45m	BB	T1
33)	Fourier and Laplace transforms in Analysis of CT systems	45m	BB	T1
34)	Fourier and Laplace transforms in Analysis of CT systems	45m	BB	T1
35)	Problems on Fourier transforms in Analysis of CT systems	45m	BB	T1
36)	Laplace transforms in Analysis of CT systems	45m	BB	T1,T2

Unit IV Analysis of Discrete Time Signals:

Session No.	Topics to be covered	Duration in Minutes	Teaching Aid	Ref.
37)	Sampling of CT signals	45m	BB	T2,R3
38)	Aliasing	45m	BB	T2
39)	DTFT	45m	BB	T2,R3
40)	Properties of DTFT	45m	BB	T2,R1,R3
41)	Properties of DTFT	45m	BB	T2
42)	Problems on DTFT	45m	BB	T2,R1,R3

43)	Z Transform	45m	BB	T2,R1
44)	Z Transform	45m	BB	T2
45)	Problems on Z-transform	45m	BB	T2,R1,R3
46)	Problems on Z-transform	45m	BB	T2,R1,R3
47)	Properties of Z Transform	45m	BB	T2,R1,R3
48)	Properties of Z Transform	45m	BB	T2

Unit V Blocking Oscillators and Time base Generators:

Session No.	Topics to be covered	Duration in Minutes	Teaching Aid	Ref.
49)	Difference Equations	45m	BB	T2,R3
50)	Problems on Difference Equation	45m	BB	T2
51)	Block diagram representation	45m	PPT	T2,R3
52)	Impulse response	45m	BB	T2,R1,R3
53)	Impulse response	45m	BB	T2
54)	Convolution sum	45m	BB	T2,R1,R3
55)	Problems on Convolution Sum	45m	BB	T2,R1
56)	LTI systems analysis using DTFT	45m	BB	T2
57)	LTI systems analysis using Z-transform	45m	BB	T2,R1,R3
58)	Problems on LTI systems	45m	BB	T2,R1,R3
59)	State variable equations	45m	BB	T2,R1,R3
60)	Matrix representation of systems	45m	BB	T2

TEXT BOOKS

1. Allan V.Oppenheim, S.Wilsky and S.H.Nawab, Signals and Systems, Pearson Education, 2007.
2. Simon Haykins and Barry Van Veen, Signals and Systems John Wiley & sons, Inc, 2004.

REFERENCES

1. Robert A. Gabel and Richard A.Roberts, "Signals & Linear Systems", John Wiley, 3rd Edition, 1987.
2. Rodger E. Ziemer, William H. Tranter, D. Ronald Fannin. "Signals & systems", 4th Edition, Pearson Education, 2002.
3. Edward W Kamen & Bonnie's Heck, "Fundamentals of Signals and Systems", Pearson Education, 2007.

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