

Course No.	Title of the Course	Credits	Course Structure	Pre-Requisite
ICICC03	SIGNAL AND SYSTEMS	4	3L-1T-0P	Nil

COURSE OUTCOME (CO):

1. Understand CT and DT systems in Time domain using convolution
2. Analyze applications of Laplace Transforms.
3. Apply network analysis using KCL & KVL.
4. Analyze applications of Z-transforms and their analysis.
5. Represent Continuous time Fourier series & Fourier Transforms.

COURSE CONTENT

Approximate No. of Lectures

UNIT I

Introduction to signals & systems, classification of signals and systems, basic operation of signals, elementary signals, properties of systems. Time domain representation of LTI systems, convolution sum and convolution integral.

09

UNIT II

The Laplace Transform (LT), properties of LT. Laplace Transform method in circuit analysis, ROC, Inversion of Laplace Transform, Transfer function, poles & zeros, Impulse response.

05

UNIT III

Network Analysis KCL, KVL. First order differential equation, general & particular solutions. Initial conditions in networks. Second order equations, examples of the solution of problems with the Laplace Transformation. Network analysis based on network theorems, waveform synthesis. Impedance functions and two port parameters.

14

UNIT IV

The Z Transform, sampling theorem, properties of Z Transform, ROC, Inversion of Z Transformer, evolution of system frequency response.

04

UNIT V

Introduction to Fourier Series and Fourier representation of signals and LTI systems.

03

Total

35

BOOKS/REFERENCE:

1. Oppenheim, Whilsky and Nawab, "Signals and Systems", 2nd Edition, Prentice Hall, New Delhi, 1997.
2. C.T. Chen, "Systems and Signal Analysis", Oxford University Press, India, 3rd Edition, 2004, ISBN 100195156617.
3. M.E. Valkenburg Network Analysis, EEE.
4. T.K. Rawat, Signals & Systems, Oxford.