

# AMET 17 DIGITAL SIGNAL PROCESSING

## UNIT-1 INTRODUCTION

- 1.1 Signal, Systems, and Signal Processing,
- 1.2 Classification of Signals,
- 1.3 The concept of frequency in continuous-time and discrete-time signals.

## UNIT-2 Discrete-Time Signals and Systems

- 2.1 Discrete-time signals,
- 2.2 Analysis of discrete-Time linear time-Invariant systems,
- 2.3 Discrete-Time systems described by Difference equations.

## UNIT-3 THE Z-TRANSFORM AND ITS APPLICATION TO THE ANALYSIS OF LTI SYSTEMS

- 3.1 The z-Transform, Properties of the z-Transform,
- 3.2 Inversion of the z-Transform,
- 3.3 The one-sided z-Transform.

## UNIT-4 FREQUENCY ANALYSIS OF SIGNALS AND SYSTEMS

- 4.1 Frequency analysis of continuous-time signals,
- 4.2 Frequency analysis of discrete-time signals,
- 4.3 Properties of the Fourier Transform for Discrete-Time signals.

## UNIT-5 THE DISCRETE FOURIER TRANSFORM

- 5.1 Its properties and applications,
- 5.2 Frequency domain sampling The discrete Fourier transform,
- 5.3 Properties of the DFT,

## UNIT-6 SAMPLING AND RECONSTRUCTION OF SIGNALS

- 6.1 Introduction, Representation Of A Continuous-Time Signal By Its Samples:
- 6.2 The Sampling Theorem,
- 6.3 Sampling With A Zero-Order Hold,
- 6.4 Sampling Of Bandpass Signals,
- 6.5 Discrete-Time Processing Of Continuous-Time Signals

### Reference Book:

1. Digital Signal Processing, Publisher Katsons, Writer Sanjay Sharma
2. Advance Control system, Publisher Katsons, Writer K M Soni