

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Electronics & Communication)
Semester: I
Syllabus with Effect from: June - 2011

Paper Code: PS01CELC03	Total Credit: 4
Title Of Paper: Signals & Systems	

Unit	Description in Detail	Weightage (%)
I	Signals, Systems & Signal Processing, Classification of signals, the concept of frequency in continuous time and discrete time signals, sampling theorem.	20%
II	Discrete-time signals, sequences, Discrete time systems, Block diagram representation, Classification, Convolution representation of LTI systems, Analysis of Discrete time systems described by difference equations (except particular solution),.	20%
III	Z Transform, Properties of Z transform, Rational Z Transform, Inverse Z transform, Transfer function representation, Analysis of LTI systems in Z domain, Transient & steady state response, Causality & Stability.	20%
IV	Frequency Analysis of continuous time signals, Frequency analysis of discrete time signals, Fourier series and Power density spectrum of discrete time periodic signal. Fourier transform and Energy density spectrum of discrete time aperiodic signals. Relationships of the Fourier transform to the Z transform Frequency domain classification and concept of bandwidth.	20%
V	Frequency domain sampling : Discrete time Fourier transform (DTFT), Discrete Fourier transform (DFT), Properties of DFT, Circular convolution, Linear convolution using DFT, Linear filtering methods based on the DFT.	20%

Basic Text & Reference Books:-

- Introduction to Signals and Systems: Edward W. Kamen, Macmillan Pub. Co., New York.
- Signals & Systems: continuous and discrete: Rodger E. Zimer, Maxwell Macmillan International (1990), Second edition.
- Digital Signal Processing : Principles, Algorithms, and Applications: John G Proakis & Dimitris G Manolakis, Prentice Hall India, 3rd edition

