M.Tech (Electronics and Telecommunication Engineering) Syllabus for Admission Batch 2016-17 2^{nd} Semester

ADVANCED TECHNIQUES IN DSP

MODULE – I

Multi-rate Digital Signal Processing: Decimation by a factor D, interpolation by a factor 1, sampling rate conversion by a national factor I/D.

MODULE – II

Sampling rate conversion of band pass signals. Implementation of low pass filter and digital filter banks. ; lattice filters, Linear prediction, forward and backward linear prediction, FIR wiener filter.

MODULE – III

Power spectrum estimation, non-parametric method Barlett, Parametric method. ; Yule-Walker MA and ARMA models. Higher order statistics and its applications.

MODULE – IV

DSP transforms: Discrete Hartely transform, Discreteconsine transform, Discrete Wavelet transform, Stransform. DSP techniques for bioinformatics., recent topics

Text Book

1. J.G. Proakis, D.G. Manolakis, Digital Signal Processing, PHI, New Delhi, 1995.

2. S.J. Orfanidis, Optimum Signal Processing, Mac Millan Publishing Co., USA, 1985.

Reference Book

1. C.K. Chui, An Introduction to Wavelets, Academic Press, USA, 1992.

2. Guoan Bi and Y. Zeng, Transforms and Fast Algorithms for signal analysis and representations, Springer, NY, USA, 2003.