13EC4101-DIGITAL SIGNAL PROCESSING

(Common to ECE & EEE)

Credits: 4

Lectures/Week: 4Hrs. **Sessional Marks: 40**

End Exam Duration: 3Hrs **End Exam Marks: 60**

UNIT – I

REVIEW OF DISCRETE SIGNALS & SYSTEMS: Z-transform and Inverse Z- transform, Theorems and Properties, system function ,Sampling the Z- Transform ,Fourier representation of finite duration sequences.

UNIT – II

DISCRETE & FAST FOURIER TRANSFORM: DFT, properties of DFT, FFT, FFT algorithms, Use of DFT for fast computation of convolution, IDFT – Correlation.

UNIT – III

DIGITAL FILTER STRUCTURES: Basic FIR structures, IIR structures: Direct form-I, Direct form-II, Parallel form ,Cascade form, Lattice Structure, Lattice-ladder structures, State space structures,

UNIT – IV

DESIGN OF IIR FILTERS: Properties of analog filters – Frequency domain filter models – Better worth, Chebyshev and other approximations – Filter design data – Low pass to high, Band pass and Band stop transformation – Filter response curves.

UNIT – V

DESIGN OF FIR FILTERS- Fourier series method, Windowing, Sampling, Applications of Digital signal processing.

TEXT BOOKS:

1. Digital Signal Processing A.V. Oppenheim and R.W. Schafer, Prentice – Hall of India, New Delhi, 1988.
2. Digital signal Processing Salivahanan-TMH
3. Digital signal Processing Computer based approach, S.K.Mitra – Tata Mc Graw – Hill (III) (p-339-400).

REFERENCE BOOKS:

1 Digital Signal Processing P.Ramesh Babu Scitech Publishers

2 Digital Signal Processing Jhon G Proakis and monolokis –Whily eastern economy edition