

# Overview of course

LESSON 1 OF 1



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## MEVD – 104 Digital Signal Processing

### **UNIT I – Introduction to Discrete Time Signals**

Sequences; representation of signals on orthogonal basis; Sampling and Reconstruction of signals.

### **UNIT II – Discrete Systems**

Attributes; Z-Transform; Analysis of LSI systems; Frequency analysis; Inverse systems, Discrete Fourier Transform (DFT), Fast Fourier Transform algorithms, Implementation of discrete time systems.

### **UNIT III – Design of FIR Digital Filters**

Window method, Park-McClellan's method; Effect of finite register length in FIR filter design.

### **UNIT IV – Design of IIR Digital Filters**

Butterworth, Chebyshev and Elliptic Approximations; Lowpass, Bandpass, Bandstop and High pass filters.

### **UNIT V – Introduction to VLSI DSP**

Transformations for high speed using pipelining, retiming, parallel processing, and folding techniques; Design of programmable DSPs.

1. A.V. Oppenheim and Schafer, *Discrete Time Signal Processing*, Prentice Hall, 1989.
2. John G. Proakis and D.G. Manolakis, *Digital Signal Processing: Principle, Algorithms and Applications*, Prentice Hall, 1997.
3. L.R. Rabiner and B. Gold, *Theory and Application of Digital Signal Processing*, Prentice Hall, 1992.
4. J.R. Johnson, *Introduction to Digital Signal Processing*, Prentice Hall, 1992.
5. D. J. DeFatta, J. G. Lucas and W. S. Hodgkiss, *Digital Signal Processing*, J Wiley and Sons, Singapore, 1988.
6. K.K. Parhi, *VLSI Digital Signal Processing Systems: Design and Implementation*, Wiley.