

## **Advances in Digital Signal Processing**

(Value Added course)

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VAC Coordinator: **Prof. B.Abdul Rahim, HOD, Dept.of ECE**

VAC Instructors: **1) Mr.S.Asif Hussain, Asst.Prof, Dept.of ECE**  
**2) M.Sreenath, Asst.Prof, Dept.of ECE**  
**And**  
**Resource person(s) from Industry**

### **Course Structure:**

Course	Class	No. of students	Duration	Starting Date
Advances in Digital Signal Processing	IV.B.Tech	80	3 hrs/week (Maximum of 30 hours)	01.12.2014

### **Prerequisite:**

- Signals and Systems
- Digital Signal Processing

### **Course Objectives:**

The goal of this course is to familiarize students with the concepts required to gain Knowledge on Advances in Digital Signal Processing.

### **Topics to be covered:**

- Discrete-time Signals and LTI Systems
- Convolution and correlation; random signals; linear time-invariant systems; transforms.
- Sampling and Finite-precision Effects
- AD/DA; aliasing; quantization; oversampling.
- Filter Design and Filter Structures
- FIR and IIR filter design; implementation.
- Multirate DSP
- Interpolation and decimation; filter bank design; polyphase structures.

### **Learning References:**

1. Statistical Digital Signal processing and Modeling, (Hayes), John Wiley
2. . Advanced Digital Signal Processing, (Proakis, Rader, Ling & Nikias) Maxwell Macmillan International, 1992.