DIGITAL SIGNAL PROCESSING LAB
(Core Subject)

Course Code:	10B17EC572	Semester:	5th Semester, B. Tech (ECE)
Credits:	1	Contact Hours:	L-0, T-0,P-2

Course Objectives

The objective of the course to practical implementation of the convolution, correlation, DFT, IDFT, Block convolution, Signal smoothing, filtering of long duration signals, and Spectral analysis of signals

Course Outcomes

After studying this course the students would be able to-

1. Understand the handling of discrete/digital signals using MATLAB
2. Understand the basic operations of Signal processing
3. Analyse the spectral parameter of window functions
4. Design IIR, and FIR filters for band pass, band stop, low pass and high pass filters.
5. Design the signal processing algorithm using MATLAB & VLAB.

List of Experiments

1: Introduction to MATLAB

2: Signal Generation and Manipulation

3: To perform the convolution and correlation operations

4: To perform the Discrete Fourier Transform (DFT) and Inverse Discrete Fourier Transform(IDFT)

5: To perform the long data filtering using Overlap save and overlap add method

6: To analyze the spectral parameters of the fixed window functions.

7: To design the low pass and high pass FIR filters using the window functions

8: To design the band pass and band stop FIR filters using the window functions

9: To Study of the Infinite Impulse Response (IIR) filter using VLAB

10: To study the FIR filter design with window function using VLab: low pass and high pass filter

11: Lab assignment 1

12: Lab assignment 2

Evaluation Scheme

1. Mid Sem. Evaluation   20 Marks
2. End Sem. Evaluation   20 Marks
3. Attendance   15 Marks
4. Class response   30 Marks
5. File   15 Marks

Total Marks   **100 Marks**

Text Books

- John G. Proakis, "Digital signal processing: principles algorithms and applications Uisng Matlab". Pearson Education India.
- Mitra, Sanjit Kumar, and Yonghong Kuo. Digital signal processing: a computer-based approach, 2nd edition, Tata McGraw-Hill.
- Alan V, Oppenheim, Ronald W., Schafer A. "Digital Signal Processing" PHI Publishers