# DIGITAL SIGNAL PROCESSING LAB

**Course Code: 13EC2108**

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**Course Outcomes**

CO1: Develop and Implement DSP algorithms in software using a computer language such as C with TMS320C6713 floating point Processor.

CO2: Develop various DSP Algorithms using MATLAB Software package.

CO3: Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital IIR-Butterworth, Chebyshev filters.

CO4: Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital FIR filters using window techniques.

CO5: Design and Analyze Digital Filters using FDA Tool.

**LIST OF EXPERIMENTS:**

1. Linear convolution between two sequences.
2. Circular convolution between two sequences.
3. Linear convolution using circular convolution.
4. Program to perform N-point DFT. Also to perform the IDFT on the result obtained to verify the result.
5. To perform circular correlation using
   a) direct method
   b) circular convolution using rotation method.
6. To perform circular convolution and correlation using DFT.
7. To perform linear convolution using (a) overlap save method (b) overlap add method.
8. To perform FFT on a sequence using the following methods. (a) Decimation in time (b) Decimation in frequency.
9. To perform IDFT on a transformed sequence using DFT.
10. Design an FIR filter using windowing techniques.
11. Design an IIR filter using impulse invariant method.
12. Design an IIR filter using bilinear transformation method.
13. Program to compute power density spectrum of a sequence.
14. Filter Design and Analysis using FDA Tool.

*Note: Any **TEN** of the above experiments are to be conducted.*