

Year & Sem: E2S2	Course Code: EC2804	Lab Name: Digital Signal Processing	No. of Credits: 2	L 0	T&PS 0	P 2
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PART-A: Experiments using MATLAB

1. Verification of sampling theorem and study of effect of aliasing
2. Generation of various Continuous-time and discrete-time signals
3. Study of various basic operations on discrete time signals (both on dependent & independent variables)
4. To perform up sampling and down sampling of the given sequence
5. To do the linear convolution and the circular convolution of two given sequences
6. Computation of N-point DFT of a given sequence and to plot magnitude and phase spectrum.
7. To find the impulse response and frequency response of first and second order systems
8. Design and implementation of IIR filters to meet the given specifications.
9. Design and Implementation of FIR filter to meet the given specifications using windowing technique

PART-B: Experiments using DSP Processor

1. To perform the linear convolution and circular convolution of the two given discrete sequences
2. To implement the FIR filters that meet the given specifications
3. To implement the IIR filters that meet the given specifications
4. To analyse the real time audio signal and extract various features
5. To analyse an image and extract various features

References/Text Books:

1. Sanjit K Mitra, "Digital signal processing: A computer base approach", 4th edition, Tata McGraw Hill, 2013
2. Vinay K Ingle, John G proakis, "Digital Signal Processing Using MATLAB®: A Problem Solving Companion", 4th edition, Cengage Learning, 2016.
3. Code composer studio tutorial available at www.ti.com/lit/ug/spru301c/spru301c.pdf
4. RulphChassaing, "Digital Signal Processing and Applications with the C6713 and C6416 DSK", John Wiely& Sons Publications, 2005

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

- 1.
- 2.
- 3.