

AY 2020-21 onwards	J. B. Institute of Engineering and Technology (UGC Autonomous)	B.Tech: ECE IIIYear – I Sem			
Course Code: J3142	DIGITAL SIGNAL PROCESSING LAB	L	T	P	D
Credits: 1		0	0	2	0

Course Objectives:

The Student will

1. apply theoretical knowledge on a practical basis
2. familiarize with knowledge of MATLAB programming & functions.
3. analyze and design different signals & filters using MATLAB
4. get the basic knowledge of trainer kit TMS320C6713 DSP Processors.
5. gain practical knowledge on implementation of different filters.

The programs shall be implemented in software (Using MATLAB / Lab view / C programming/OCTAVE Equivalent) and hardware (Using TI / Analog devices / Motorola / Equivalent DSP processors).

1. Generation of Sinusoidal waveform / signal based on recursive difference equations.
2. To find DFT / IDFT of given DT signal.
3. To find frequency response of a given system given in (Transfer Function/ Differential equation form).
4. Implementation of FFT of given sequence
5. Determination of Power Spectrum of a given signal(s).
6. Implementation of LP FIR filter for a given sequence.
7. Implementation of HP FIR filter for a given sequence.
8. Implementation of LP IIR filter for a given sequence
9. Implementation of HP IIR filter for a given sequence.
10. Generation of Sinusoidal signal through filtering.
11. Generation of DTMF signals.
12. Implementation of Decimation Process
13. Implementation of Interpolation Process
14. Implementation of I/D sampling rate converters.

15. Audio application such as to plot a time and frequency display of microphone plus a cosine using DSP. Read a .wav file and match with their respective spectrograms.
16. Noise removal: Add noise above 3 KHz and then remove, interference suppression using 400 Hz tone.
17. Impulse response of first order and second order systems.

Note: - Minimum of 12 experiments has to be conducted.

Course Outcomes:

The student will be able to

1. work with MATLAB functions.
2. analyze and design different signals and filters.
3. provide the basic knowledge of trainer kit TMS320C6713 DSP Processors.
4. gain practical knowledge on implementation of different filters.
5. design new DSP based projects.

CO-PO/PSO Mapping Chart (3/2/1 indicates strength of correlation) 3 – Strong; 2 – Medium; 1 – Weak														
Course Outcomes (COs)	Program Outcomes (POs)												Program Specific Outcomes*	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO1	3	3	3	3	1	1						2	3	3
CO2	3	3	3	3	2							2	3	3
CO3	3	3	3	2	1							3	3	3
CO4	3	3	3	2	1							2	3	3
CO5	3	3	3	2	3							3	3	3