

| COURSE CODE | COURSE TITLE | L | T | P | C |
|-------------|-------------------------------------|---|---|---|---|
| 1151EC304 | DISCRETE TIME SIGNAL PROCESSING LAB | 0 | 0 | 2 | 1 |

a. **Course Category**

Program Core

b. **Preamble**

Discrete Time Signal Processing course uses simulation software to demonstrate the basic principles and operations of digital signal processing like signal shifting, scaling and convolution etc. Students will learn how to apply these basic signal processing concepts in real time

c. **Prerequisite Courses**

Nil

d. **Related Courses**

Discrete Time Signal Processing and Digital Image Processing

e. **Course Outcomes**

Upon the successful completion of the course, students will be able to

| CO Nos. | Course Outcomes | Knowledge Level (Based on revised Bloom's Taxonomy) |
|---------|---|---|
| CO1 | Perform basic signal processing concepts on signal | S2 |
| CO2 | Implement IIR and FIR filters with given specifications | S2 |

f) **Correlation of Co's with Po's**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | H | M | L | L | H | - | L | - | M | M | - | - | - | - |
| CO2 | H | M | L | L | M | L | - | L | L | M | L | M | L | - |

g) **List of experiments.**

| Experiment No. | Experiment Title | COs |
|---------------------------------|----------------------------------|-----|
| MATLAB based experiments | | |
| 1 | Waveform Generation | CO1 |
| 2 | Basic Operations on Signals | CO1 |
| 3 | Linear and Circular Convolution | CO1 |
| 4 | DFT using Fast Fourier Transform | CO1 |
| 5 | FIR Filters Design | CO2 |
| 6 | IIR Filters Design | CO2 |

| | | |
|--|------------------------------|-----|
| 7. | Sampling and Aliasing | CO1 |
| TMS320C6713 PROCESSOR based experiments | | |
| 8 | Waveform Generation | CO1 |
| 9 | Convolution | CO1 |
| 10 | FIR filter Design | CO2 |
| 11 | Interpolation and Decimation | CO1 |