B.E ELECTRICAL AND ELECTRONICS ENGINEERING(EEE)
CHOICE BASED CREDIT SYSTEM (CBCS)
SEMESTER - VI
DIGITAL SIGNAL PROCESSING LABORATORY

Subject Code	15EEL68	IA Marks	20
Number of Practical Hours/Week	03	Exam Hours	03
Total Number of Practical Hours	42	Exam Marks	80

Credits - 02

Course objectives:

- To explain the use of MATLAB software in evaluating the DFT and IDFT of given sequence
- To verify the convolution property of the DFT
- To design and implementation of IIR and FIR filters for given frequency specifications.
- To realize IIR and FIR filters.
- To help the students in developing software skills.∎

Sl. No	Experiments
1	Verification of Sampling Theorem both in time and frequency domains
2	Evaluation of impulse response of a system
3	To perform linear convolution of given sequences
4	To perform circular convolution of given sequences using (a) the convolution summation formula (b) the matrix method and (c) Linear convolution from circular convolution with zero padding.
5	Computation of N – point DFT and to plot the magnitude and phase spectrum.
6	Linear and circular convolution by DFT and IDFT method.
7	Solution of a given difference equation.
8	Calculation of DFT and IDFT by FFT
9	Design and implementation of IIR filters to meet given specification (Low pass, high pass, band pass and band reject filters)
10	Design and implementation of FIR filters to meet given specification (Low pass, high pass, band pass and band reject filters) using different window functions
11	Design and implementation of FIR filters to meet given specification (Low pass, high pass, band pass and band reject filters) using frequency sampling technique.
12	Realization of IIR and FIR filters

Revised Bloom's Taxonomy Level	L_1 – Remembering, L_2 – Understanding. L_3 – Applying, L_4 – Analysing, L_5 – Evaluating,

Course outcomes: At the end of the course the student will be able to:

- Give physical interpretation of sampling theorem in time and frequency domains.
- Evaluate the impulse response of a system.
- Perform convolution of given sequences to evaluate the response of a system.
- Compute DFT and IDFT of a given sequence using the basic definition and/or fast methods.
- Provide a solution for a given difference equation.
- Design and implement IIR and FIR filters
- Conduct experiments using software and prepare reports that present lab work∎

Graduate Attributes (As per NBA)
Engineering Knowledge, Problem Analysis, Individual and Team work, Communication.

Conduct of Practical Examination:
1. All laboratory experiments are to be included for practical examination.
2. Breakup of marks and the instructions printed on the cover page of answer script to be strictly adhered by the examiners.
3. Students can pick one experiment from the questions lot prepared by the examiners.
4. Change of experiment is allowed only once and 15% Marks allotted to the procedure part to be made zero.∎

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