Lesson Plan & Work-done Diary for AY:2025-26, ODD Semester

	Course with Code: Signals & Digital Signal Processing / BEE502				Faculty: Ms. Kavyashree S		Semester & Section: V	
Class No.	**Date planned (DD/MM)**	**Topics to be covered**	**TLP Planned**	**Class No.**	**Date of Conduction (DD/MM)**	**Topics Covered**	**TLP Executed**	**Remarks if any deviation**
	MODULE-1							
1	04.08.25	Introduction to Course	ICT					
2	05.08.25	Advantages, Applications: Definitions of signals and a system Basic operations on signals, Problems	Chalk & Talk					
3	06.08.25	Classification of signals, Problems on classification of signals	Chalk & Talk					
4	07.08.25	Problems on classification of signals	Chalk & Talk					
5	11.08.25	Problems on properties of systems	Chalk & Talk					
6	12.08.25	Concept of frequency in continuous and Discrete time signals	Chalk & Talk					
7	13.08.25	Sampling of analog signals, the sampling theorem, quantization of continuous amplitude and sinusoidal signals	Chalk & Talk					
8	14.08.25	Coding of quantized samples, digital to analog conversion,	Chalk & Talk					
9	18.08.25	**Time-domain representations for LTI systems:** Convolution, impulse response representation, Problems	Chalk & Talk					
10	19.08.25	Convolution Sum and Convolution Integral, Properties of impulse response representation, solution of difference equations.	Chalk & Talk					

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	MODULE-2							
11	20.08.25	**Discrete Fourier transforms:** Introduction, Advantages, Applications of DSP Definitions, definition of DFT and its inverse	ICT					
12	21.08.25	Matrix relation to find DFT and IDFT , Numerical , Properties of DFT, linearity, circular time shift, circular frequency shift	Chalk & Talk					
13	25.08.25	Circular folding derivation Symmetry of : real valued sequences, real even and odd sequences	Chalk & Talk					
14	26.08.25	DFT of complex conjugate sequence, Multiplication of two DFTs- the circular convolution, Numerical	Chalk & Talk					
15	28.08.25	Parseval's theorem, circular correlation, Digital linear filtering using DFT.	Chalk & Talk					
16	01.09.25	Problems on Parsevals Theorem , linear filtering using DFT	Chalk & Talk					
17	02.09.25	Signal segmentation	Chalk & Talk					
18	03.09.25	Overlap-Save method Problem	Chalk & Talk					
19	04.09.25	Overlap-add/ Save method Problem	Chalk & Talk					
20	08.09.25	Overlap-add method Problem	Chalk & Talk					

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	MODULE 3							
21	09.09.25	**Fast Fourier Transforms Algorithms**: Introduction, Direct computation of DFT	ICT					
22	15.09.25	Need for efficient computation of the DFT (FFT algorithms)., speed improvement factor	Chalk & Talk					
23	17.09.25	Radix-2 FFT algorithm for the computation of DFT and IDFT– decimation-in-time	Chalk & Talk					
24	18.09.25	Problems on DIT DFT Radix-2 FFT algorithm	Chalk & Talk					
25	22.09.25	Problems on DIT IDFT Radix-2 FFT algorithm	Chalk & Talk					
26	24.09.25	Radix-2 FFT algorithm for the computation of DFT and IDFT– decimation-in-time	Chalk & Talk					
27	25.09.25	Radix-2 FFT algorithm for the computation of DFT and IDFT– Decimation-in-frequency algorithms	Chalk & Talk					
28	29.09.25	Radix-2 FFT algorithm for the computation of DFT and IDFT– Decimation-in-frequency algorithms	Chalk & Talk					
29	06.10.25	Problems on DIF	Chalk & Talk					
30	08.10.25	Calculation of DFT when N is not a power of 2	Chalk & Talk					

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	MODULE 4							
31	09.10.25	**IIR filter design**: Classification of analog filters, generation of Butterworth polynomials, frequency transformations	ICT					
32	13.10.25	Design of Butterworth filters, low pass, high pass, band pass and band stop filters	ICT					
33	23.10.25	Design of Butterworth filters, low pass, high pass, band pass and band stop filters	ICT					
34	27.10.25	Generation of Chebyshev polynomials, design of Chebyshev filters	Chalk & Talk					
35	28.10.25	Impulse invariance method	Chalk & Talk					
36	29.10.25	Design of Butterworth and Chebyshev filters using bilinear transformation	ICT					
37	30.10.25	Problems on bilinear Transformation using Butterworth	Chalk & Talk					
38	03.11.25	Problems on bilinear Transformation using Chebyshev	Chalk & Talk					
39	04.11.25	Filters using bilinear transformation	Chalk & Talk					
40	05.11.25	Representation of IIR filters using direct form one and two, series form and parallel form	Chalk & Talk					

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	MODULE 5							
41	06.11.25	**FIR filter design:** Introduction to FIR filters, symmetric and antisymmetric FIR filters	ICT					
42	10.11.25	Filter Designs and Numericals	Chalk & Talk					
43	11.11.25	Design of linear phase FIR filters using - Rectangular, Bartlett	ICT					
44	12.11.25	Hamming, Hanning and Blackman windows	Chalk & Talk					
45	13.11.25	Hamming, Hanning and Blackman windows	Chalk & Talk					
46	17.11.25	Hamming, Hanning and Blackman windows	Chalk & Talk					
47	18.11.25	Design of FIR differentiators and Hilbert transformers	Chalk & Talk					
48	19.11.25	FIR filter design using frequency sampling Technique	Chalk & Talk					
49	20.11.25	Representation of FIR filters using direct form and lattice structure.	Chalk & Talk					
50	26.11.25	VTU question Paper Discussion and SRS conduction	ICT					

	Activity	Planned	Actual	Remarks
1	Theory Classes	**40 hours Theory +10 Lab slots(2 hour /slot) =Total 60**		
2	Assignments/Quizzes/ Self study	Write up: 2 SRS:3 Virtual Lab: 1		
3	Tutorials/ Extra classes	-		
4	Internal Assessments	03		
5	ICT based Teaching (% of usage in Curriculum)	10/50= 20%		
Planning			**Execution**	
Faculty Signature:			**Faculty Signature:**	
HoD Signature:			**HoD Signature:**	