



DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Lesson Plan & Work-done Diary for AY: 2026-2027, 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		Introduction to Course	ICT					
2		Advantages, Applications: Definitions of signals and a system Basic operations on signals, Problems	Chalk & Talk					
3		Classification of signals, Problems on classification of signals	Chalk & Talk					
4		Problems on classification of signals	Chalk & Talk					
5		Problems on properties of systems	Chalk & Talk					
6		Concept of frequency in continuous and Discrete time signals	Chalk & Talk					
7		Sampling of analog signals, the sampling theorem, quantization of continuous amplitude and sinusoidal signals	Chalk & Talk					
8		Coding of quantized samples, digital to analog conversion,	Chalk & Talk					
9		Time-domain representations for LTI systems: Convolution, impulse response representation, Problems	Chalk & Talk					
10		Convolution Sum and Convolution Integral, Properties of impulse response representation, solution of difference equations.	Chalk & Talk					



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



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



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



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



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	Activity	Planned	Actual	Remarks
1	Theory Classes	50 hours Theory +10 Lab slots(2 hour /slot)		
2	Assignments/Quizzes/ Self study	Write up: 1 QUIZ: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:	



ATME

College of Engineering



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