DEPARTMENT OF ELECTRONICS
Cochin University of science and Technology

Course Schedule

Course: M.Tech. (Electronics & Communication Engineering)	**Name of Faculty: Prof(Dr.) Supriya M.H.**
Topic: 20-437-0103 **ADVANCED DIGITAL SIGNAL PROCESSING**	**Semester: FIRST**
Lecture Hall: online	**Timings:** as per CBCS

Week and date	*Lecture topics*	*Assignments*	*Remarks*
Week 1 (23 Nov 20)	**Module 1** **Overview of Transforms** Z – Transform		
Week 2 (30th Nov 20)	Inverse Z – Transform Short-time Fourier Transom DFT	***Assignment-1*** • Signal Processing Hardware – TMS 320 Series Chips. • DCT, Hillbert Transform, • Wavelet Transform	
Week 3 (7th Dec 20)	FFT		
Week 4 (21st Dec 20)	**Module 5** **Hardware** • Finite word length affect in Signal Processing		
Week 5 (4th Jan 21)	• Real-time Implementation Considerations	***Assignment-1 submission***	
Week 6 (11th Jan 21)	**Module 2** **Filter Design** • LTI System as Frequency Selective Filters • FIR Filters - Characteristics of FIR Filters with Linear Phase		
Week 7 (18th Jan 21)	Fourier Series Method of FIR Filter Design	***Assignment-2*** **Multidimensional Signal Processing** 2-Signals and Systems Multidimensional Sampling Difference Equations. Multidimensional FFT Multidimensional z – Transforms	
Week 8 (25th Jan 21)	Window method Design of FIR Filters by Frequency Sampling Technique		

4th Feb 21	First Internals		
Week 9 (15th Feb 21)	**IIR Filters** • Impulse Invariant Transformation • Bilinear Transformation		
Week 10 (22nd Feb 21)	Design of Lowpass Digital Butterworth Filter		
Week 11 (1st Mar 21)	• Design of Lowpass Digital Chebyshev Filter • Frequency Transformations		
Week 12 (8th Mar 21)	**Module 4** **Multi-rate Signal Processing** • Sampling and Sampling rate Conversion • Decimation and Interpolation • FIR & IIR Decimators		
Week 13 (15th Mar 21)	FIR & IIR Interpolators	***Assignment-2 submission***	
Week 14 (22nd Mar 21)	**Discussion / Seminar on Assignments**		
25th March 21	Second Internals		
Week 15 (5th Apr 21)	REVISION		
10th April 21	*End of Classes*		