SCHEME OF COURSE WORK

Course Title	: DIGITAL SIGNAL PROCESSING LAB		
Course Code	:15EC2108	L P C	0 3 2
Program:	: M.Tech		
Specialization:	: Communication Engineering & Signal Processing		
Semester	:I		
Prerequisites	: Digital Signal Processing Theory, C and MATLAB Programming.		

Course Outcomes (COs): At the end of the course the student will be able to

1	Develop and Implement DSP algorithms in software using a computer language such as C with TMS320C6713 floating point Processor
2	Develop various DSP Algorithms using MATLAB Software package.
3	Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital IIR Butterworth, Chebyshev filters.
4	Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital FIR filters using window techniques.
5	Design and Analyze Digital Filters using FDA Tool.

Course Outcomes versus Program Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1		**S**	**S**	**M**	**S**						**S**
CO2		**S**	**S**	**M**	**S**						**S**
CO3		**S**	**S**	**S**	**S**						**S**
CO4		**S**	**S**	**S**	**S**						**S**
CO5		**S**	**S**	**S**	**S**						**S**

S - Strongly correlated, M - Moderately correlated, Blank - No correlation

Assessment Methods:	Day to Day Analysis/Lab internal

Week	Topic /Contents	Course Outcomes	Sample questions	Teaching-Learning Strategy	Assessment Method & Schedule
1	Introduction to Lab course & Lab Instructions	CO1	Discuss challenging questions related to the lab course	Stimulate Discussions	Day to Day Analysis/Lab internal-I
2	Utilization of TMS320C6713 DSP Processor	CO1	Architecture of TMS320C6713 DSP Processor	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-I
3	Linear convolution between two sequences.	CO1	Linear convolution between two sequences.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-I
4	Circular convolution between two sequences.	CO2	Circular convolution between two sequences.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-I
5	Linear convolution using circular convolution.	CO2	Linear convolution using circular convolution.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-I
6	Program to perform N-point DFT. Also to perform the IDFT on the result obtained to verify the result.	CO2	Program to perform N-point DFT. Also to perform the IDFT on the result obtained to verify the result.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-I
7	To perform circular correlation using a) Direct method b) circular convolution using rotation method.	CO2	To perform circular correlation using a) Direct method b) circular convolution using rotation method.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-I
8	Revision				
9	Internal-I				
10	To perform circular convolution and correlation using DFT.	CO3	To perform circular convolution and correlation using DFT.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-II
11	To perform linear convolution using (a) overlap save method (b) overlap add method.	CO3	To perform linear convolution using (a) overlap save method (b) overlap add method.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-II

12	To perform FFT on a sequence using the following methods. (a) Decimation in time (b) Decimation in frequency.	CO3	To perform FFT on a sequence using the following methods. (a) Decimation in time (b) Decimation in frequency.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-II
13	To perform IDFT on a transformed sequence using DFT.	CO4	To perform IDFT on a transformed sequence using DFT.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-II
14	Design an FIR filter using windowing techniques.	CO5	Design an FIR filter using windowing techniques.	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-II
15	Design an IIR filter using bilinear transformation method	CO5	Design an IIR filter using bilinear transformation method	Stimulate Discussions/ Hands on exposure	Day to Day Analysis/Lab internal-II
16	Revision				
17	Internal-II				
18	End Practical Exam				