4/4 B.Tech. SEVENTH SEMESTER

EM7L2 EMBEDDED SYSTEMS & DIGITAL SIGNALPROCESSING LAB Credits: 2

Lab/Practice: 3 periods/week **Internal assessment: 25 marks**
Semester end examination: 50 marks

Course Objectives:

o

- The objective of this course is to train the students to implement LCD Dispay,Hexadecimal Calculator,Interrupts,Analog To Digital Conversion Using Msp430fg4618 Experimenter Board.
- To program TMS 320C 6713 DSP Processor for various applications.

Learning Outcomes:

At the end of this course, the students will be able to

- Understand the DSP ProcessorTMS320C5X ,and the implementation of basic DSP algorithms.
- Implement the Serial Communication,Basic Input and Output Using The MSP430 UART
- Implement Lcd Dispay,Hexadecimal Calculator,Interrupts,Analog To Digital Conversion Using The MSP430FG4618 Experimenter Board

EMBEDDED SYSTEMS (Any Six)

1. Introduction To Code Composer Studio
2. Serial Communication Using The MSP430 UART
3. Basic Input and Output Using The MSP430 UART
4. Lcd Dispay Using The Msp430fg4618 Experimenter Board
5. Hexadecimal Calculator Using The MSP430 Experimenter Board
6. Interrupts Using The MSP430FG4618 Experimenter Board
7. Analog To Digital Conversion Using The MSP430FG4618 Experimenter Board

DIGITAL SIGNALPROCESSING (Any Six)

1. Architecture of DSP chips-TMS 320C 6713 DSP Processor
2. Linear convolution
3. Circular convolution
4. FIR Filter (LP/HP) Using Windowing technique
    a. Rectangular window
    b. Triangular window
    c. Kaiser window
5. IIR Filter (LP/HP) on DSP processors
6. N-point FFT algorithm
7. Power Spectral Density of sinusoidal signals
8. FFT of 1-D signal plot
9. MATLAB program to find frequency response of analog filters (LP/HP)