Corporate/Academic Training on TI320C54x DSP Processor

Topics to be covered in the course:

TI320C54x and DSP training:

1. Introduction to DSP and DSP processors
    * Difference between microprocessors and DSP
    * Evolution of DSP
    * DSP processors – suitable for signal processing
    * Slides showing the basic signals and systems, transforms, convolution, correlation, digital filters.
    * Use of Matlab and some functions.
2. C54x architecture and asm programming
    * Introduction to DSP processors
    * Introduction to TI processors
    * Architecture of c54x (memory, buses, multiplier, barrel shifter, alu)
    * Pipeline concept.
    * Introduction to peripherals.
    * asm programming (logical, arithmetic, multiple, program control and other instructions).
3. Introduction to Matlab and Matlab programming (theory + lab demo lecture)
    * Matlab language (syntax and usage of tool)
    * Matlab programming
    * Demos of DSP (programming for signals and systems concept, convolution and correlation, optional: digital filters and image processing).
4. Introduction to CCS tool and asm programming (theory + lab demo lecture)
    * Introduction to CCS
    * Using CCS for 'C' and asm programming
    * Using mixed 'C' and asm.
    * Introduction to CMD file.
    * Writing CMD file.
    * Introduction to optimizing compiler of CCS.
5. ASM programming of C54X
    * Introduction to asm programming
    * Simple functions to show the arithmetic, logical and multiplication operations.
    * Convolution and Correlation
    * DFT
    * IIR and FIR
6. Advanced topics
    * Introduction to DSPBIOS
    * RTOS concepts
    * Optimization techniques