GUJARAT TECHNOLOGICAL UNIVERSITY

Signal Processing and VLSI Technology (EC)

M.E. Semester: II

Subject Name: **DSP Architecture and Programming (Major Elective – II)**

Sr. No.	Course Content
1.	**DSP Development System:** Introduction, support tools,code composer studio, programming examples to test of DSK tools
2.	**Architecture and Instruction set of TMS320C6x Processor:** Introduction, TMS320c6x architecture , fuctional units, instruction set, assembler directives, timers, interrupts, multi-channel buffered serial port (McBSP), Direct Memory Access, Fixed point and floating point data representation, memory consideration, programming examples using C , assembly and linear assembly.
3.	**Programming Examples:** Programming examples using C and assembly code for Infinite impulse response , finite impulse response, Fast Fourier Transform and adaptive filters
4.	**Code Optimization:** Introduction, optimization steps, procedure for code optimization.
5.	**DSP Applications:** DTMF Signal detection, Beat detection, Recent trends in DSP system design Using FPGA.

Reference Books:

1. Rulph Chassaing ,Donald Reay , Digital Signal Processing and Application with the TMS320C6713 and TMS320C6416 DSK, 2nd edition, wiley Publication.
2. B Venkataramani, M Bhaskar, Digital Signal Processors, Architecture, Programming and Applications, , 2nd edition,TMH, New Delhi
3. User guide - Texas Instrumentation