

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN INSTRUMENTATION & CONTROL

Semester: 4

**Subject Name MICROPROCESSOR AND ASSEMBLY LANGUAGE
PROGRAMMING**

Sr.No	Course content
1.	MICROPROCESSOR ARCHITECTURE & MICROPROCESSOR SYSTEM 1.1 Microprocessor Architecture and its operation: Microprocessor initiated operations and 8085 BUS organisation, Internal data operations and 8085 registers. 1.2 Memory: Memory organisation, Memory map, Memory read and write. 1.3 Microcomputer system 1.4 8085 Microprocessor: Block diagram, Address and data bus, control and status signals, Power-supply and clock frequency, Interrupts and externally initiated operations, serial I/O ports, BUS timings, Flags.
2.	8085 INSTRUCTION AND TIMING 2.1 Instruction classification: Review of 8085 operations 2.2 Instruction Formats: Single bytes, Two bytes and Three bytes instructions, Opcode format, Instruction Timings and operation status, simple programs.
3.	8085 INSTRUCTION SET 3.1 Data transfer instructions. 3.2 Arithmetic Instructions. 3.3 Logical operations. 3.4 Branch operations. 3.5 Stack, I/O and Machine control Instructions. 3.6 Simple programs using 8085 Instructions.
4.	PROGRAMMING TECHNIQUES 4.1 Looping, Counting and Indexing. 4.2 Logic operations 4.3 Counter and Timing delays. 4.4 Stack and Subroutines. 4.5 Code conversion, BCD Arithmetic and 16 Bit data operations.
5.	ADVANCE MICROPROCESSOR 5.1 8086 /8088 Architecture 5.2 32 bit Microprocessor 80386: Introduction/ Architecture 5.3 The Intel Pentium processor: Internal block diagram 5.4 RISC processor: Introduction & features.
6.	MAIN MEMORY SYSTEM 7 Hrs, 6.1 Types of main memory 6.2 CPU read/write timing 6.3 SRAM and ROM interface requirement

	6.4 Interfacing dynamic RAM 6.5 Troubleshooting the memory module
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Reference Books:

1. Microprocessor Arch., Programming & Applications with 8085 and 8080 A by R.S. Gaonkar -Willey Eastern Ltd.
2. The 8080/85 Family:
Design, Programming & Interfacing by John Ufferbeck -PHI India.
3. Introduction to microprocessor by A.P. Mathur -TMH
4. 8080 assembly language programming publication by Lance A. Leventhal -PHI
5. The 8086/8088 family: Design, Gross & Interfacing by John Uffenbeck -PHI India