

MCC102 - MICROPROCESSOR AND ASSEMBLY LANGUAGE
PROGRAMMING(3-1-0)

Module I: (15 Hours)

Digital Logic Fundamentals: Introduction, Number System, Binary Arithmetics, Logic Gates, Introduction to Multiplexer, Demultiplexer, Encoder, Decoder & Flip-Flops.

Microprocessor History, 8085 Architecture and Register organization, Functional Block Diagram, Bus Organization, 8085 Instruction Set, Instruction classifications, Instruction word size, Instruction format, Addressing modes, Assembly Language programming,

Memory, I/O devices, Addressing memory and I/O devices, Memory mapping, Memory Interfacing, Tri-State Devices, Buffers.

Module II: (13 Hours)

Programming techniques with additional instructions: Looping, Counting, Indexing, Introduction to Advanced Instructions, Instruction cycle, Machine cycle, Timing Diagram, Stack and subroutine, Counter and Time delay, Debugging.

Module III: (12 Hours)

Interfacing Chips: 8255A (PPI), 8155 (Multipurpose Programmable Device), Interrupts, 8259A (PIC), Serial I/O and Data communication, Serial Data communication standard (RS 232C) 8257 or 8237A (DMA Controller), 8251A (USART).

16 bit processor 8086: Introduction, Architecture, Pin Diagram, Min & Max Mode, Addressing Modes.

Text Books:

1. Ramesh S. Gaonkar, "Microprocessor Architecture, Programming and Application with 8085", 5th edition, Penram International Publishing (India) Pvt. Ltd.
2. D V Hall, "Microprocessor & Interfacing" McGraw Hill Education India

Reference Books:

1. A. P. Mathur, "Introduction to Microprocessor" McGraw Hill Education India.
2. B. Ram, "Fundamentals of Microprocessor and Microcomputer" Dhanpat Rai & Co Publication.
3. P K Ghosh, P R Sridhar, "0000 to 8085 Introduction to microprocessor to Engineers & Scientists" Prentice-Hall of India.
4. M. Mano "Logic and Computer Design Fundamentals" Pearson Education/PHI.