MCA 506C MICROPROCESSOR AND ASSEMBLY LANGUAGE PROGRAMMING

Module I: (10 Hours)
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, Interrupts.

Module II: (10 Hours)
Instruction cycle, Machine cycle,Timing Diagram, Stack and subroutine.Debugging a program, Programming techniques such as looping, counting and indexing.Memory, I/O devices, Addressing memory and I/O devices, Memory mapping, Memory Interfacing,Tri-State Devices, Buffers.

Module III: (10 Hours)
Interfacing Chips: 8255A (PPI), 8155 (Multipurpose Programmable Device), 8259A (PIC), 8257 or 8237A (DMA Controller), 8251A (USART).Some Standard Interfaces: Data communication buses such as IEEE 488 and CAMAC standard, Serial data communication Standards such as 20-mA current loop and RS- 232C.

Module IV: (10 Hours)
16 bit processor 8086: Introduction, Architecture, Pin Diagram, Min & Max Mode, Addressing Modes. Introduction to Microcontrollers and embedded processors, overview of the 8051 microcontroller family.

Module V:(6 hours)(as per choice of faculty)
(Portion covered can be tested through Internal evaluation only not to be included inUniversity examination.)

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.
3. M.A. Mazidi and J.G. Mazidi, “The 8051 Microcontroller and Embedded Systems”, Pearson Education, India.
Reference Books:
1.A. P. Mathur , “Introduction to Microprocessor” McGraw Hill Education India.
2. B.Ram, “Fundamentals of Microprocessor and Microcomputer” DhanpatRai& 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.