

Changes to be incorporated in 5th Semester**CPEC 5305 MICROPROCESSOR & MICRO CONTROLLER (3-1-0) 4****Module - I**

(12 hours)

**Microprocessor Architecture:-** Introduction to Microprocessor and Microcomputer Architecture, Pins & Signals, Register Organization, Timing & Control Module, 8085 Instruction Timing & Execution.

Instruction Set and Assembly Language Programming of 8085:- Instruction set of 8085, Memory & I/O Addressing, Assembly language programming using 8085 Instruction Set, use of Stack & Subroutines.

**Memory Interfacing:-** Interfacing EPROM & RAM Memories: 2764 & 6264,

**Interrupts :-** 8085 Interrupts

**MODULE – II**

(12 hours)

**Microprocessor Based System Development Aids:-** Programmable Peripheral Interface: 8255, Programmable DMA Controller: 8257, Programmable Interrupt Controller: 8259

**Microcontroller (Architecture and Programming):-** Introduction to 8051 Microcontrollers (Architecture, Pin description), 8051 Assembly Language Programming (JUMP, LOOP, CALL Instructions), I/O Port Programming, 8051 Addressing Modes, Arithmetic & Logic Instructions

**MODULE – III**

(12 hours)

Microcontroller Interrupts and Interfacing to 8255:- 8051 Interrupts, Interfacing to 8255

**Intel 8086 (16 bit processors):-** 8086 Architecture, Addressing Modes, Instruction Format, Pins & Signals, 8086 Basic System Concept, Interfacing with Memories, 8086 Interrupts.

**MODULE – IV**

(11 hours)

**Intel 80386 :-** Introduction to 80386 Microprocessor, Architecture, Pins & Signals, Memory System, Registers, 80386 Memory Management, Paging Technique, Protected Mode Operation, brief introduction to 80387 Math Coprocessor.

**Pentium Processors (Only features) :-** Introduction to Pentium Processors, Memory System, Input/Output System, Branch Prediction Logic, Floating Point Module, Cache Structure, Superscalar Architecture.

(only the features of Pentium Processor mentioned above are to be discussed)

**TEXT BOOKS**

1. 0000 to 8085 – Introduction to Microprocessor for Scientists & Engineers by Ghosh & Sridhar, PHI publication (for Module I to Module – III)
2. Advanced Microprocessor and Peripherals (Architecture, Programming & Interfacing) by A.K. Roy & K.M. Bhurchandi – TMH Publication (For Module-V to Module- VII)
3. The 8051 Microcontroller & Embedded Systems by Mazidi & Mazidi – Pearson / PHI publication (For Module-IV)
4. Microcontrollers [theory and applications] TMH publication by Ajay V. Deshmukh. (Chapter – 2 to Chapter – 6)
5. Microprocessors and programmed logic (2<sup>nd</sup> Edition), Pearson Education by Kenneth L. Short