**EE313/EEE313 Microprocessor and Peripheral Devices**

**(**W.e.f. session 2021-22)

**L T P C**
**3 1 0 4**

**Recommended Pre requisites:** 1. Basic Electronics (EC 101) **Co requisites:** None
2. Digital Circuits & Systems (EE 305)

**UNIT1: Introduction of Microcomputer System**: General definition of minicomputer, microprocessors, CPU, I/O devices, clock, memory, bus architecture, tri-state logic, address bus, data bus and control bus.
**Semiconductor Memories:** Development of semiconductor memory, internal structure and decoding, memory read and writes timing diagrams, ROM, RAM. (8)

**UNIT2: Architecture of Microprocessors:** Introduction of Intel 8085 and 8086 microprocessor, Pin description and their internal architecture. Introduction of Intel 80386 .
**Operation and Control of Microprocessor:** Timing and control unit, memory read/write machine cycles, I/O read/write machine cycles, interrupt acknowledge machine cycle . (8)

**UNIT3: Instruction Set:** Addressing modes- Data transfer, arithmetic, logical, branch, stack and machine control groups of instruction set, unspecified flags and instructions.
Assembly Language Programming, Assembler directives, Subroutines. (8)

**UNIT4: Interfacing:** Interfacing of memory chips, Interfacing of I/O devices, I/O addressing-I/O mapped and memory mapped I/O schemes, 8257(DMA Controller), 8259(Interrupt priority Control), 8253/8254 Programmable timer/counter with modes of operation.
**Interrupts:** Interrupt structure of 8085 microprocessor. (8)

**UNIT5: Programmable Peripheral Interface:** Intel 8255, pin configuration, internal structure of a port bit, modes of operation, bit SET/RESET feature, ADC and DAC chips and their interfacing.
**Programmable Interval Timer:** Intel 8253, pin configuration, internal block diagram of counter and modes of operation, counter read methods. (8)

**Text Books:**

1.B.Ram, "Fundamentals of Microprocessor and Microcomputer", Dhanpat Rai Publication, 4th Edition.2012
2. M.Rafiquzzaman, "Microprocessors and Applications", Pearson , 2016
3. R.S. Kaler "Microprocessors and Microcontrollers", 3rd Ed, Willey, Dreamtech Press, 2019.

**References:**

1. Hall D.V.,"Microprocessor and Interfacing-Programming and Hardware", 3rd Ed., McGraw-Hill education, 2017.
2. Gaonkar R.S.,"Microprocessor Architecture,Programming and Applications", 5th Ed., Penram International, 2007.
3. Stewart J,"Microprocessor Systems- Hardware,Software and Programming", Prentice Hall International Edition,1990
4. Short K. L.,"Microprocessors and Programmed Logic", 2nd Ed.,Pearson Education, 2008.