

COMP 231
Microprocessor and assembly language

Subject: Microprocessor and assembly language

Course Code: COMP 204

Type: Core

FM: 100(50 int+50 final)

Contents:

1. **Introduction:** Basic block diagram of a microcomputer, Stored program computer (Von Neumann Architecture) and related terminologies, Bus system architecture, History of Microprocessor (focus on Intel Series), Microprocessors application.
2. **8-Bit Microprocessor:** Introduction of 8085 microprocessor, 8085 programming model, Internal functional diagram & pin functions, Architectural features, microprocessor communication & bus timing, 8085 Instruction set, Addressing modes & programming, 8085 Interrupts.
3. **16-Bit Microprocessor:** 8086/8088 CPU architecture & operation, Programming model, Pins & signals, Memory segmentation, Processor bus cycle (Timing diagram), Operating modes. Support chips for 8086/8088 : 8288 bus controller, 8284 clock generator, Latches 8282, Bus transceiver 8286 of Connections, Instruction set & programming, Addressing modes, Interrupt types, Interrupt processing sequence, Interrupt controller 8259.
4. **I/O Interfaces:** Serial Communication Interface, Parallel Communication Interfaces, 8254 programmable interval timer, DMA operation, DMA controller.

Text Books:

John Uffenbeck, The 80x86 Family design, programming and Interfacing

Microprocessor Architecture, Programming, and Application with the 8085 *Ramesh Gaonkar*.

Microprocessor Systems: The 8086/8088 Family architecture, Programming, and Design - *Yu-cheng Liu, Glenn A. Gibson*