



**Paper Code** :CMO:305  
**Paper Name** : Computer Organisation

Teaching Hours (Per Week)		Examination Scheme		
TH. (hours)	Pr. (hours)	Internal	External	Total
		Th. (marks)	Th. (marks)	
4		30	70	100 (marks)

**Lectures = 68 Hours**

**Objective:**

Computer Organization refers to the operational units and their interconnections that realize the architectural specifications. The students who study Computer Organization and Architecture, generally study the introductory course on Digital Systems.

**1. Basic Computer Organization 12 Hrs.**

Instruction codes, Computer Registers, Computer Instructions, Timing and Control Signal generation, Instruction Cycle, Memory Reference Instructions, Input Output instructions, Interrupt cycle, Design of Basic Computer, Design of Accumulator Logic

**2. Central Processing Unit 16 Hrs.**

General Register Organization, Stack Organisation, Instruction formats, Addressing modes, Data Transfer and manipulation, program control, Parallel processing, Pipelining, Arithmetic pipeline, instruction pipeline, RISC pipeline, vector processing, array processors

**3. Computer Arithmetic 12 Hrs.**

Addition and Subtraction with signed magnitude data, Multiplication Algorithms, Division Algorithm

**4. Input-Output Organization 14 Hrs.**

Asynchronous Data transfer - Handshaking, Asynchronous Serial Transfer, Modes of transfer, Priority interrupt, DMA Controller and DMA Transfer

**5. Memory Organization 14 Hrs.**

Memory hierarchy, Main Memory, Cache memory, Virtual Memory concept



## RECOMMENDED BOOKS

### MAIN READING

1. M. Morris Mano, "Computer System Architecture", Pearson Education, 2008.
2. Carter Nicholas, "Computer Architecture", Schaun outline Sevies , Tata McGraw-Hill, 2008.
3. Peter Abel and N. Nizamuddin, "IBM PC Assembly Language and Programming", Pearson Education, 2009.

### SUPPLEMENTARY READING

1. J.P. Hayes, "Computer Architecture & Organization", Tata McGraw Hill
2. Michael J. Flynn, "Computer Architecture: Pipelined and Parallel Processor Design", Narosa Publishing House, 2002.
3. Hamacher, Vranesic, Zaky, Computer Organization, 5/e, MGH, 2002
4. Wiiliam Stallings, Computer Organization and Architecture Designing for Performance, 8/e, Pearson Education, 2010