

**MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY
BHOPAL - 462003**

Name of Program	B. Tech.	Semester IV	Year II
Name of Course	Computer System Organization		
Course Code	CSE 222		
Core / Elective / Other	Core		

Prerequisite:

1. Digital Circuit Design (CSE-214)

Course Outcomes:

On successful completion of the course, student be able to:

1. Analyze functioning of computer.
2. Analyze various components used in computers like CPU, Memory and I/O.
3. Analyze computer design (ALU and CU design).

Description of Contents in brief:

1. Overview of basic computer organization and design, Central processor organizations: basic building blocks, bus organized computer memory, address structure, register transfer languages, instruction formats, expanding op-codes and addressing modes.
2. Control unit organization: hardwired control & microprogrammed control organization, control memory, address sequencing micro-instruction formats, micro-program sequencer, and micro-programming.
3. Arithmetic processor design: addition and subtraction algorithm, multiplication algorithm, division algorithm, processor configuration, and floating-point arithmetic. Performance evaluation of processors. Introduction to pipeline processing, pipeline hazards.
4. Input-Output organization: Asynchronous Data Transfer, Asynchronous Communication Interface, Modes of Transfer: Interrupt-Initiated, Direct Memory Access (DMA).
5. Memory Organization: Main Memory, Auxiliary Memory, Associative Memory: Hardware Organization, Cache Memory: Mapping Schemes.

List of Text Books:

1. Computer Architecture Morris Mano.

List of Reference Books:

1. Computer Organization and architecture William Stallings.
2. Computer Architecture Schaum's Outlines.