CSE-222 COMPUTER ARCHITECTURE

Central processor organizations: basic building blocks, bus organized computer memory, address structure, register transfer languages, instruction formats, expanding op-codes and addressing modes. Control unit organization: hardwired control & micro-programmed control organization, control memory, address sequencing micro-instruction formats, micro-program sequencer, micro-programming. Arithmetic processor design: addition and subtraction algorithm, multiplication algorithm, division algorithm, processor configuration, and floating point arithmetic. Input-Output organization: Asynchronous Data Transfer, Asynchronous Communication Interface, Modes of Transfer: Interrupt-Initiated, Direct Memory Access (DMA). Memory Organization: Main Memory, Auxiliary Memory, Associative Memory: Hardware Organization, Cache Memory: Mapping Schemes, Virtual Memory: Address Space and Memory Space, Address Mapping. Structure of multiprocessors, Introduction to parallel processing, Flynn‘s classification, pipeline processing, pipeline hazards.

References:

1. Computer Organization and architecture William Stallings
2. Computer Architecture Morris Mano,
3. Computer Organisation & Architecture T.K. Ghosh,