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| CS104 | Computer Organization and Architecture | | T | P |
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Basic Organization: Stored Program Concept, Components of a Computer System, Machine Instruction, Opcodes and Operands, Instruction Cycle, Organization of Central Processing Unit: ALU, Hardwired & Micro programmed Control Unit, General Purpose and Special Purpose Registers.

Functioning of CPU: Instruction Formats, Op Codes, Instruction Types, Addressing Modes, Common Microprocessor Instructions, Multi-core Architecture, Multiprocessor and Multicomputer.

Memory Organization: Memory Hierarchy, Cache Memory, Main Memory (DRAM and ROM), Secondary Memory, Virtual Memory, Characteristics of different types of Memory.

I/O Organization: Peripheral devices, I/O interface, Modes of Transfer, Priority Interrupt, Direct Memory Access, Input-Output Processor, and Serial Communication. I/O Controllers, Asynchronous data transfer, Strobe Control, Handshaking.

Suggested Readings:

1. M. M. Mano, Computer System Architecture, PHI.
2. V. Rajaraman, T. Radhakrishnan, An Introduction to Digital Computer Design, PHI.
3. W Stallings, Computer Organization and Architecture: Designing For Performance, Prentice Hall.