

COMPUTER ORGANIZATION & ARCHITECTURE



DETAILED COURSE SYLLABUS

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1. Syllabus & weightage

2. Cache & Main Memory

- Introduction to COA
- Basics of Memory addressing
- Gate PYQ on endianess
- Memory mapping
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- Direct Memory mapping
- Set associative mapping
- Fully associative mapping
- Hardware implementation of Direct mapping
- Hardware implementation of set associative & associative mapping
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- Simultaneous & Hierarchichal memory access

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- Types of instructions based on operands
- Questions
- Types of instructions based on operations
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- Program Control instructions
- Types of CPU Organizations
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- RISC vs CISC
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- Program status word
- Control Unit : Hardwired CU & Microprogrammed CU
- Microprogrammed Approach: Horizontal & Vertical Microprogrammed CU

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- Register window and register file size in RISC
- Instruction Pipelining
- Pipeline overhead & Basic Questions
- Pipelining dependencies or hazards
- Structural Dependency
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6. IO Interface

- I/O interface intro
- I/O Processor, Isolated & Memory mapped I/O
- Isolated I/O vs Memory mapped I/O
- I/O data transfer modes: Programmed & Interrupt driven mode
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7. Secondary Memory

- Disk storage structure & terms used
- Questions on disk