

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Computer Science and Engineering - NOC:Computer Organization and Architecture - A Pedagogy

Subject Co-ordinator - Prof.Arnab sarkar, Prof.Jatindra Kumar Deka, Dr. Santosh Biswas

Co-ordinating Institute - IIT - Guwahati

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Model of Computer and Working Principle

Lecture 2 - Digital Logic Building Blocks

Lecture 3 - Information Representation and Number Systems

Lecture 4 - Basic Elements of a Processor

Lecture 5 - Storage and I/O Interface

Lecture 6 - Execution of Program and Programming Languages

Lecture 7 - Components of Central Processing Unit (CPU) and External Interface

Lecture 8 - Main Memory

Lecture 9 - Instruction Execution

Lecture 10 - Instruction Format

Lecture 11 - Instruction Set

Lecture 12 - Addressing Modes

Lecture 13 - Flags and Conditional Instructions

Lecture 14 - Instruction

Lecture 15 - Instruction Cycle and Micro-operations

Lecture 16 - Control Signals and Timing Sequence

Lecture 17 - Control Signals for Complete Instruction Execution

Lecture 18 - Handling Different Addressing Modes

Lecture 19 - Handling Control Transfer Instructions

Lecture 20 - Design of Hardwired controlled Control Unit

Lecture 21 - Microinstructions and Microprograms

Lecture 22 - Organization and Optimization of Microprogrammed controlled Control Unit

Lecture 23 - Different Internal CPU Bus Organization

Lecture 24 - Basics of Memory and Cache - Part 1

Lecture 25 - Basics of Memory and Cache - Part 2

Lecture 26 - Direct-mapped Caches

Lecture 27 - Associative and Multi-level Caches

Lecture 28 - Summary - Caches

Lecture 29 - Basics of Virtual Memory and Address Translation

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- Lecture 30 - Paging and Segmentation
- Lecture 31 - TLBs and Page Fault Handling
- Lecture 32 - Cache Indexing and Tagging Variations, Demand Paging
- Lecture 33 - Page Replacement Algorithms
- Lecture 34 - Page Frame Allocation and Thrashing
- Lecture 35 - Summary - Virtual Memory
- Lecture 36 - Input-Output Primitives
- Lecture 37 - Interrupt Driven I/O
- Lecture 38 - DMA Transfer
- Lecture 39 - Storage Devices