

581365-8
Computer Organization II
 (Tietokoneen rakenne)

Teemu Kerola
 University of Helsinki
 Department of Computer Science

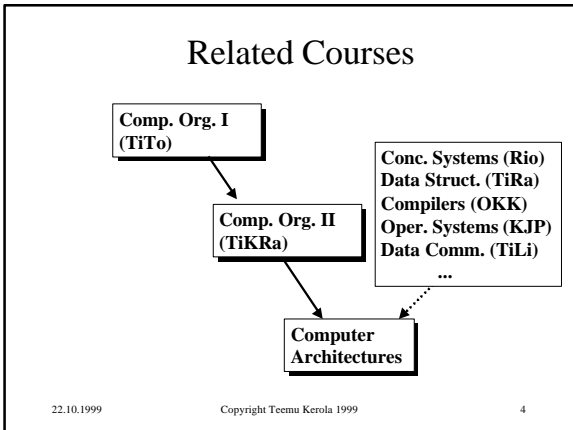
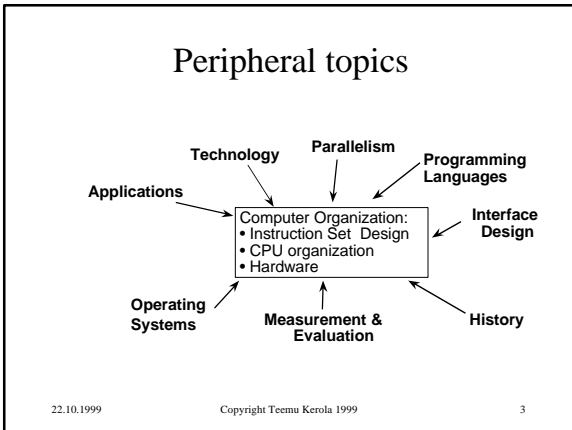
Fall 1999

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Course Focus

- Understand basic computer system design from the user (human, OS, compiler) viewpoint as well as from the designer viewpoint.
- Understand how a simple hardware clock signal makes a computer to execute programs.

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Notice

- These slides are made to support lectures and to be used with the text book.
- They do NOT include everything that is covered in the lectures.
- They are NOT a replacement for a text book.
- If you need a self-contained presentation, please use the text book.

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Motto

- “It is not good exercise, if you do not sweat”

(“Kunto ei nouse, jos ei tule hiki”)

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WWW Information

- Course home page
http://www.cs.helsinki.fi/~kerola/tikra/
- This semester schedule
.../tikra/S99/aikataulu.html
- Lectures *.../luennot/*
- Homeworks *.../laskuharj/*
- Old exams *.../tikra/kokeet/*
- Newsgroup *hy.opiskelu.tkl.tikra*

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Comp. Org. I (TiTo, Tietokoneen toiminta)

A := B + C;
High level language

↓

MOV AX, B
ADD AX, C
MOV A, AX
Assembler

↓

Logic circuits

Comp. Org. II (TiKRä, Tietokoneen rakenne)

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TiTo: What happens in system

TiKRä: How are CPU & memory implemented?

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The Lowest Presentation Level for Comp Org I (TiTo)

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The Lowest Presentation Level for Comp Org II (TiKRä)

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Contents

- Computer system - overall structure (Ch 1-7)
- System buses (Ch 3)
- Digital logic (App A)
- Memory hierarchy (Ch 4.3, 7.4)
- Computer arithmetic (Ch 8)
- Instruction sets (Ch 9-10)
- CPU structure and function (Ch 11)
- Reduced Instruction Set Computers (Ch 12)
- Instr. level parall. and superscalar proc. (Ch 13)
- Control unit (Ch 14-15)

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