



香港中文大學

The Chinese University of Hong Kong

CSCI2510 Computer Organization

Lecture 00: Course Information

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Course Information



- **CSCI2510 Computer Organization**
- Course Time and Place
 - **Lecture (*3)**
 - MON 12:30~14:15 (@ [YIA LT7](#))
 - TUE 12:30~13:15 (@ [LSB LT2](#))
 - **Tutorial (*1)**
 - TUE 14:30~15:15 (@ [LSK LT4](#))
- Course Websites
 - <http://www.cse.cuhk.edu.hk/~mcyang/csci2510/2324T1/csci2510.html>
 - <https://blackboard.cuhk.edu.hk/>

Course Instructor



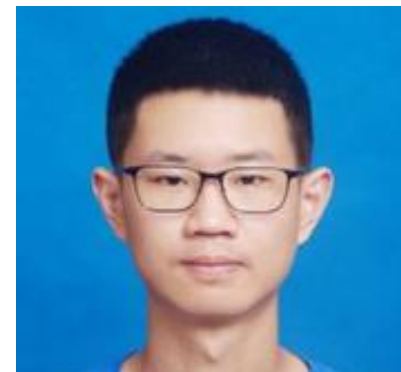
- Prof. Ming-Chang YANG (楊明昌)
 - Office: SHB 906
 - Office Hour: TUE 13:30~14:30
 - mcyang@cse.cuhk.edu.hk



Teaching Assistants



- Xiangjun PENG (彭湘鈞)
 - Office: SHB 921
 - Office Hour: THU 15:00~16:00
 - xjpeng@cse.cuhk.edu.hk
- Yizou CHEN (陳一鄒)
 - Office: SHB 921
 - Office Hour: MON 15:00~16:00
 - chenyz@cse.cuhk.edu.hk
- Zhisheng HU (胡智勝)
 - Office: SHB 921
 - Office Hour: WED 15:00~16:00
 - zshu23@cse.cuhk.edu.hk



Before We Start ...



Faculty of Arts



Faculty of Business Administration



Faculty of Education



Faculty of Engineering



Faculty of Law



Faculty of Medicine



Faculty of Science



Faculty of Social Science



Graduate School



Having More Interactions via uReply



1) Visit **uReply** &
Enter **Session Num.**
<http://ureply.mobi>

2) Confirm the
Session Number
and Click **“JOIN”**

3) **“JOIN”** with
Student ID and
CWEM Password

Language
English



Session Number (Required)

Student ID (Optional)

Student name (Optional)

☐ Remember my student ID and student name

JOIN

Language
English



LC5376

CWEM login after 'join'

JOIN



CWEM Authentication

This session requires your CWEM account.

LC5376

1155123456

.....|

JOIN

[uReply Attendance User Guide](#)

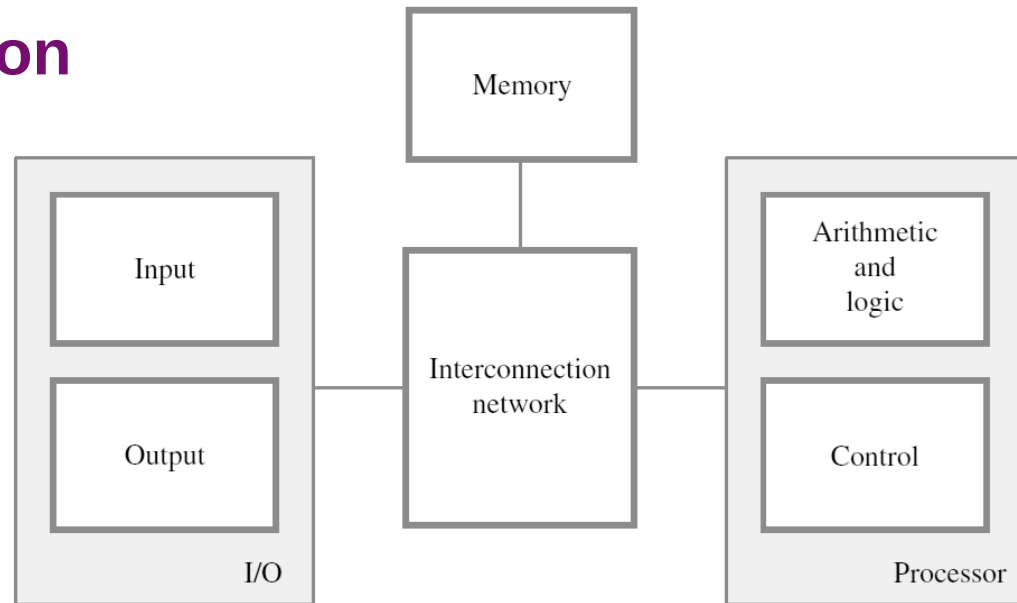
Course Description



- To understand ① how a computer **works internally** and ② how to **instruct a computer** using **assembly**.

① Computer Organization

- Processor (CPU)
- Memory unit
- Input/Output units
- Interconnection buses



② Assembly Language Programming

- Internal coding of information
- Number and character representation
- Arithmetic operations
- Flow of information within a microcomputer

```
lw $0, 0($2)
lw $1, 4($2)
sw $1, 0($2)
sw $0, 4($2)
```

Programming Tool/Environment



- **RISC-V**: A “Free” and “Open” ISA

“More than 3,100 RISC-V members across 70 countries contribute and collaborate to define RISC-V open specifications ...”

- **Spike**: A RISC-V ISA (Instruction Set Architecture) Simulator

- <https://github.com/riscv-software-src/riscv-isa-sim>

- **System Requirement**

- **Mac** (both Intel and M-series) and **Linux** are natively supported;
- To run on **Windows**, a virtual machine* is needed



*Attend our **tutorials** to learn it from scratch!

- Textbook

- Computer Organization and Embedded Systems

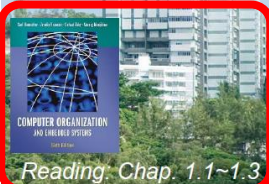
- Carl Hamacher, Zvonko Vranesic, Safwat Zaky, and Naraig Manjikian
 - Sixth Edition, McGraw Hill, 2012



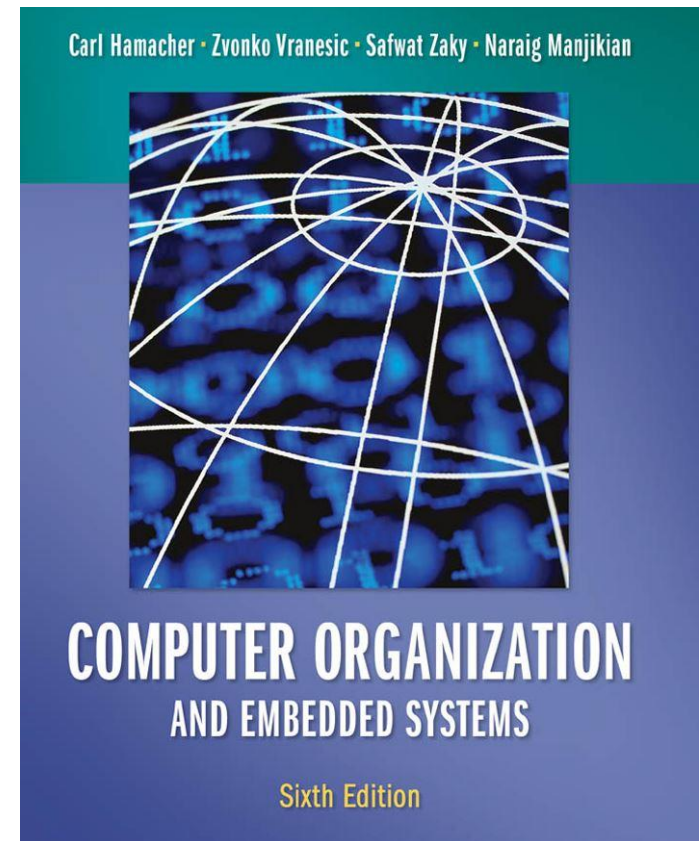
香港中文大學
The Chinese University of Hong Kong

CSCI2510 Computer Organization
Lecture 01: Basic Structure of Computers

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Reading: Chap. 1.1~1.3



Course Schedule *(subject to change)*



W	Date	Lecture (MON)	Lecture (TUE)	Tutorial (TUE)
1	Sep 4, 5	Lec00 Course Information (※ UG class suspended until 13:30)	Lec01 Basics of Computers	Tut01 RISC-V Environment Setup
2	Sep 11, 12	Lec02 Number & Character Representation		Tut02
3	Sep 18, 19	Lec03 Memory Basics		Tut03
4	Sep 25, 26	Lec04 Machine Instructions		Lec04 Machine Instructions
5	Oct 2, 3	Public Holiday (Oct 2)	Tut04	Assignment01
6	Oct 9, 10	Lec05 Program Execution		Tut05
7	Oct 16, 17	Lec06 Memory Hierarchy		Tut06 (※ Assignment01 Due)
8	Oct 23, 24	Public Holiday (Oct 23)	Lec07 Cache in Action	Assignment02
9	Oct 30, 31	Lec07 Cache in Action (Cont'd)		Tut07
10	Nov 6, 7	Lec08 Memory Performance		Tut08 (※ Assignment02 Due)
11	Nov 13, 14	Lec09 Basic Processing Unit		Assignment03
12	Nov 20, 21	Lec10 Pipelining		Tut09
13	Nov 27, 28	Lec11 Basic Input and Output (*if time allows)		Tut10 Review for Final Exam (※ Assignment03 Due)

Note: Some lecture sessions would be swapped with the tutorial sessions (on Tuesday) according to the lecturing progress.

Course Assessment *(subject to change)*



- Grading
 - Class Participation **10%** (uReply!)
 - Assignments **40%**
 - Hand-written Exercises
 - Programming Assignments (using  **RISC-V**) 
 - Final Exam **50%**
 - Bonus **5%** (extra!)
- Notes
 - Due to our tight schedule, the request for **late submission** of assignments will **NOT** be entertained.

Important Notes



- **Plagiarism** will **NOT** be tolerated!
 - Do **NOT** copy!
 - Do **NOT** let other(s) copy!
 - **Can** discuss but write up the solutions by yourself!
- **Honesty** in Academic Work: A Guide
 - <http://www.cuhk.edu.hk/policy/academichonesty/>

The best way to learn is through PRACTICE

