



香港中文大學

The Chinese University of Hong Kong

CSCI2510 Computer Organization

Lecture 00: Course Information

Ming-Chang YANG

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Course Information



- **CSCI2510 Computer Organization**
- Course Time and Place
 - **Lecture (*3)**
 - MON 12:30~14:15 (@ [LSK 514-5](#))
 - TUE 12:30~13:15 (@ [MMW LT2](#))
 - **Tutorial (*1)**
 - TUE 14:30~15:15 (@ [BMS G18](#))
- Course Websites
 - <http://www.cse.cuhk.edu.hk/~mcyang/csci2510/2021T1/csci2510.html>
 - <https://blackboard.cuhk.edu.hk/>

Course Instructor



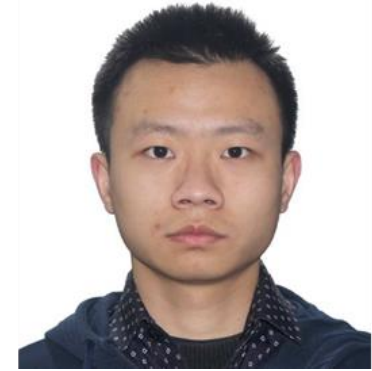
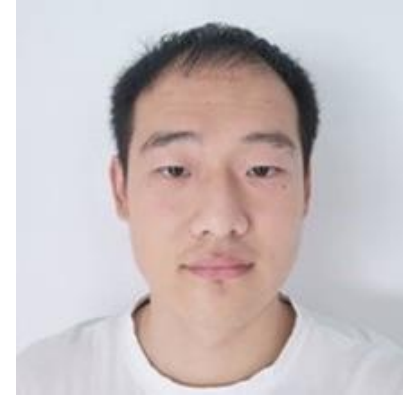
- Prof. Ming-Chang YANG (楊明昌)
 - Office: SHB 906
 - Office Hours: *Requested by email*
 - mcyang@cse.cuhk.edu.hk



Teaching Assistants



- Chao WANG (王超)
 - Office: SHB 921
 - Office Hours: THU 16:30-17:15
 - cwang@cse.cuhk.edu.hk
- Junliang HU (胡俊良)
 - Office: SHB 921
 - Office Hours: THU 11:15-12:00
 - jlhu@cse.cuhk.edu.hk
- Xirui NIE (聂希瑞)
 - Office: SHB 905
 - Office Hours: FRI 13:00-13:45
 - xrnie21@cse.cuhk.edu.hk



Before We Start ...



Faculty of Arts



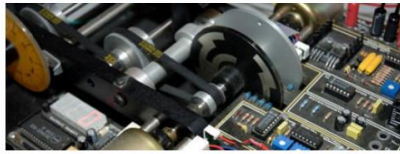
Faculty of Business Administration



Faculty of Education



Faculty of Engineering



Faculty of Law



Faculty of Medicine



Faculty of Science



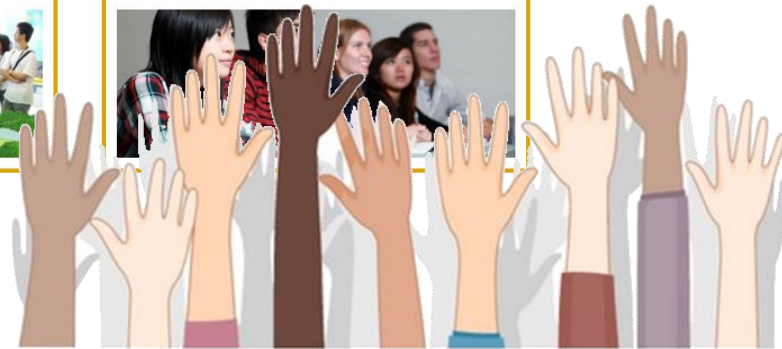
Faculty of Social Science



Graduate School



 uReply <http://ureply.mobi>



uReply: Enter the Session



1) Enter the Session Number

2) Confirm the Session Number and Click “Join”

3) Login 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](#)

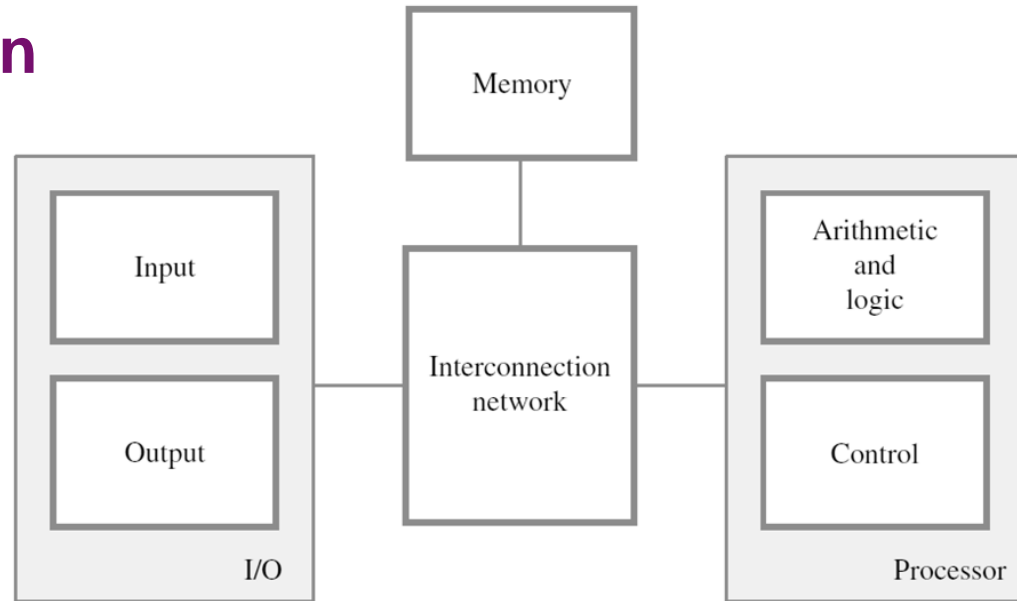
Course Description



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

– Computer Organization

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



– Assembly Language Programming

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

```
mov ecx, ebx
mov esp, edx
mov edx, r9d
mov rax, rdx
```

Programming Tool

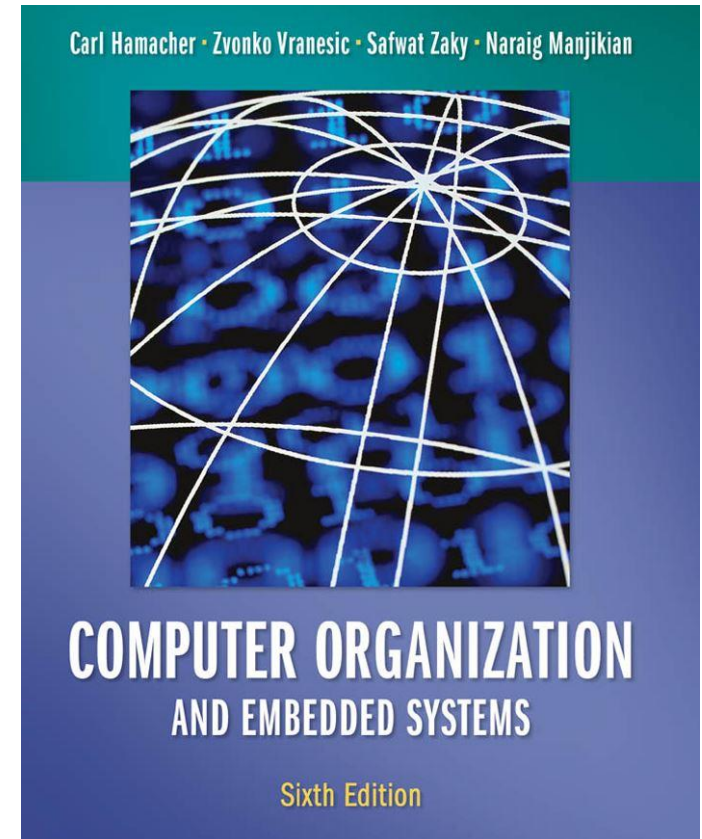


- **Microsoft Macro Assembler (MASM) v14**
(within Microsoft Visual Studio 2015)
 - Community Edition:
 - Free for genuine Windows users
 - Full-featured industrial-grade software



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



Course Assessment



- Grading
 - Assignments 35%
 - Hand-written Exercises
 - Programming Assignments (using MASM)
 - Midterm Exam 20%
 - Final Exam 40%
 - Class Participation 5% (uReply!)
 - Bonus 5% (extra!)
- Notes
 - **Late submission** of assignments is **NOT** acceptable.

Course Schedule (*subject to change*)



| W, | Date | Lecture (MON & TUE) | Tutorial (TUE) / Note |
|----|---------------------|--|--------------------------------------|
| 1 | Sep 6, 7 | Lec00 Course Information | No Tutorial on Sep 7 |
| 2 | Sep 13, 14 | Lec01 Basic Structure of Computers | Tut01 MASM Environment Setup |
| 3 | Sep 20, 21 | Lec02 Number & Character Representation | Tut02 MASM Basics |
| 4 | Sep 27, 28 | Lec03 Memory Basics | Tut03 MASM Addressing Modes |
| 5 | Oct 4, 5 | Lec04 Machine Instructions | Tut04 Stack & Queue Implementations |
| 6 | Oct 11, 12 | Lec05 Program Execution | Tut05 Hints for Stack Implementation |
| 7 | Oct 18, 19 | Lec06 Memory Hierarchy | Tut06 Reviews for Midterm Exam |
| 8 | Oct 25, 26 | Lec07 Cache in Action Midterm Exam (Lec01~05, Tut01~06) ➤ 12:30~13:30 (Lec Time) on Oct 26 | No Tutorial on Oct 26 |
| 9 | Nov 1, 2 | Lec08 Cache Performance | Tut07 MASM Subroutines |
| 10 | Nov 8, 9 | Lec09 Basic Processing Unit | Tut08 Cache Implementations (I) |
| 11 | Nov 15, 16 | Lec10 Control Unit & Instruction Encoding | Tut09 Cache Implementations (II) |
| 12 | Nov 22, 23 | Lec11 Pipelining | Tut10 Hints for Cache Implementation |
| 13 | Nov 29, 30 | Lec12 Basic Input and Output | Tut11 Reviews for Final Exam |
| | Dec ?? (TBA) | | Final Exam |

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**

A hand holding a blue marker, positioned as if writing the word 'PRACTICE' on a whiteboard. The word 'PRACTICE' is written in large, blue, capital letters and is underlined with a blue line.

Questions?

