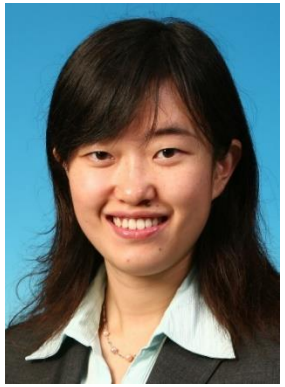
COMP2611 COMPUTER ORGANIZATION
COURSE INFORMATION (SPRING 22)

Teaching Team

- **Our promise: always try our best to support high-quality teaching and learning, either face-to-face or online**



Dr. Cindy Li
L1 Instructor

Dr. Alex Lam
L2/L3 Instructor

Dr. BY Chang
IA, T1/T2

Miss Leni Yang
PGTA, T3

Mr. Qiqi Zhou
PGTA, LA1

Mr. Marcus Yang
PGTA, LA2

Miss Chengmin Wu
PGTA LA3

Miss Xinyi Zhang
PGTA, HW1&2

Miss Haoyue Zhang
PGTA, HW3&4

Mr. David Gao
PGTA, PA

Miss Linrui Li
PGTA, Grader

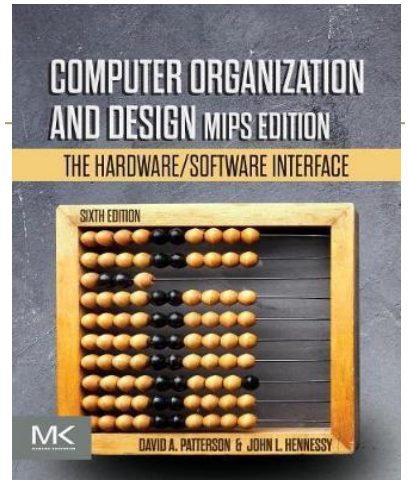
Mr. Wangze Ni
PGTA, Grader

Course Schedule

- Course webpage https://course.cse.ust.hk/comp2611/
- Zoom lecture/tutorial/lab access via Canvas
- 2 x 1.5 hour lectures (real-time online for now)
- 1 hour tutorial (T1-T3 real-time online/ T4 self-paced pre-recorded video)
- 1 hour lab (LA1-LA3 real-time online/ LA4 self-paced pre-recorded video)

- Tutorials and labs start on week 3 (Feb 21-25)

Textbook and Grading Scheme



- **Computer Organization and Design MIPS Edition**
  - 6th edition, ISBN 9780128201091
- **Grading scheme**
  - **4 written homework 15% (15%)**
    - released on week 4, week 6, week 8, and week 12, normally due in a week
  - **Midterm exam 30%**
    - **Mar 28 evening Venue TBD (please mark down on your calendar)**
  - **1 individual programming project 15%**
    - Released on week 10, due in one month (deadline: last day of Spring)
  - **Final Exam 40%**
    - Mid May

Academic Integrity

- Course homework and project should be individual work; both ‘provider’ and ‘copier’ will be penalized equally and harshly
- University guideline
- http://ugadmin.ust.hk/integrity/

Questions left Unanswered

- **In COMP2011 (or similar high-level programming courses), you've learned**
  - Develop a program to solve problem

- **But questions remain as**
  - How does a computer work inside?
  - How can we get electricity to perform abstract tasks like adding and storing numbers?
  - What happens when our programs are executed by a computer?
  - How do we design programming languages and hardware to work together?
  - How do we make computers faster?

Course Learning Outcomes

- **Upon completion of the course, students are expected to be able to:**
  - Understand the basic concepts of digital logic and build the small circuits involved in computer systems
  - Describe the interaction between software and hardware and instruction set architecture (ISA)
  - Write and execute small programs of a few hundred lines in assembly language
  - Define the basic concepts of modern computer hardware, including datapath, control, memory and input/output
  - Describe the organizational paradigms that determine the capability and performance of computer systems

Topics to be covered

- **Brief Digital Circuit**
  - Topic 1: Digital Logic (combinational and sequential)
- **Binary and Arithmetic**
  - Topic 2: Data Representation (integer, fractional, character)
  - Topic 3: Computer Arithmetic (addition, subtraction, multiplication, division) and ALU
- **ISA and Assembly**
  - Topic 4: Instruction Set Architecture (ISA) and MIPS Assembly Language
- **Computer Architecture**
  - Topic 5: Processor (datapath and control) and pipeline
  - Topic 6: Memory System (cache, virtual memory)