Welcome to

CSC1003 Intro. CS & Java
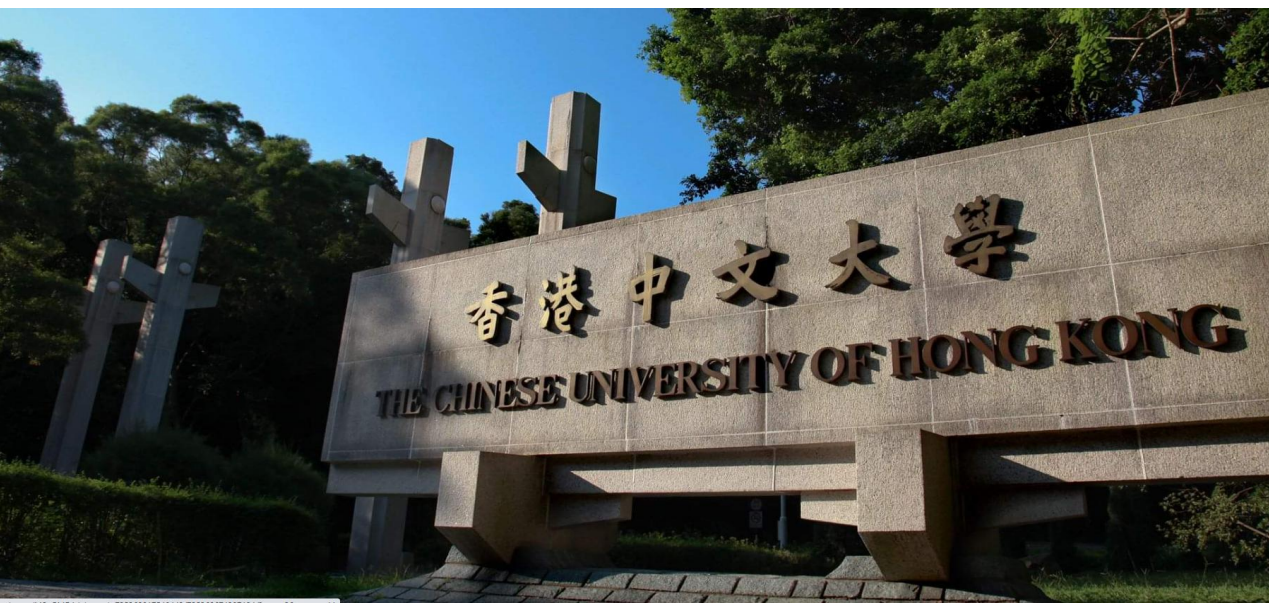
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CUHK-SZ

Thank you

- For Choosing CUHK–SZ
  - CUHK–SZ is the right choice.
  - (I, and my family, have been associated with CUHK and CUHK–SZ since 2003. I have the confidence to say it!)

- For Choosing CSC1003 as your first class at CUHK–SZ
  - It will give you a good start into the CS world.
  - (I proposed this course. I have the confidence to say it!)

As required by the school,

○ A student can take either CSC1001 or CSC1003 to fulfill the school package requirement, but not both.

○ The choice does NOT affect the declaration of majors at the end of 1st year.
  ○ No problem: CSC1001 → CSE major, DSBDT major, STAT major
  ○ No problem: CSC1003 → CSE major, DSBDT major, STAT major

○ CSC1003 fits the future study scheme of CSE major better
  ○ Very possibly I'll choose CSE major, then take CSC1003 (but not a must).

CSC1001 vs CSC1003?

○ This is the second year we offer CSC1003

○ Comparatively, CSC1001 was offered from 2015–2016 academic year.

○ CSC1001: Python + Basic Data Structure/Algorithm
○ CSC1003: 50–60% Java + 20–30% CS Concepts + ~20% Python

○ CSC1001: a general course for programming, covering many aspects
○ CSC1003: a specialized course designed for leading students into CS

CSC1001 vs. CSC1003

- CS is about **Applied Technique**
  - Gain niche roles, like in system management & software development

- CS is about **Fundamental Study**
  - Logic matters: almost everything that can be imagined about CS is related to logic

- CS is about **Thinking** and **Solving Problems**
  - Thinking computationally is a fundamental skill for everyone
  - 周以真：「計算思維是一種普適思維方法和基本技能」
  - 21世紀的學習的 4C 是溝通，批判性思維，協作和創造力。第五個 C可能是計算思維

What is Computer Science?

○ Desired characteristics of CS:
- ○ Logic thinking
- ○ Passion
- ○ Diligence
- ○ Innovation

○ When graduated from CS:
- ○ Pursue development work
- ○ Continue advanced learning
- ○ Perform inter–disciplinary study
- ○ Start–up and Entrepreneurship

CS: In and Out

○ Programming: Python, Java (new), C/C++, Internet Programming

○ Foundations: Digital Logic, Data Structure, Algorithm, Compiler, Discrete Maths

○ AI: Artificial Intelligence, Machine Learning

○ System: Computer Architecture, OS, Networks (new), Cloud, Parallel Programming

○ Rich Media: HCI (new), Graphics (new), Multimedia, Speech Processing (new), NLP (new)

○ Database, Software Engineering, …

Our CS Courses
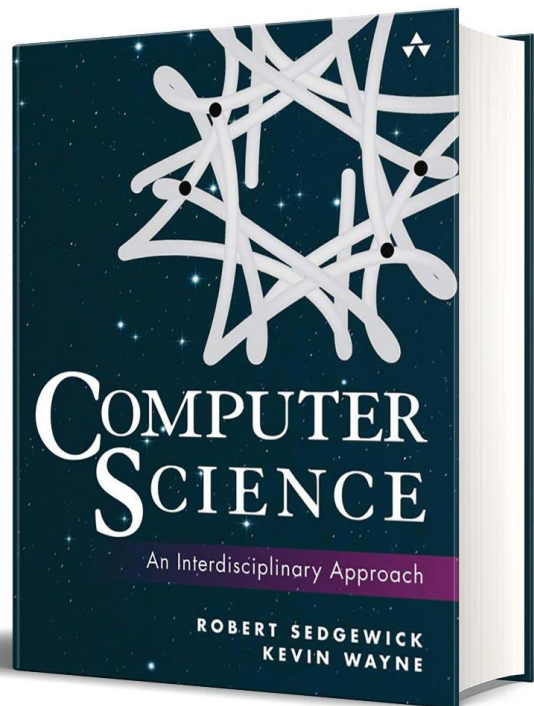
○ Think and Practice

○ Preview and Review

The Computer Science (CSC) Program is one of the earliest programs in CUHK-SZ, and enrolled the first batch of students (2015-cohort) in 2016. Since then, with the hard work from the university, the schools, the faculties and the students, the program has become:

1. **One of the most attractive programs in the university**. On average, the program attracts more than 100 fresh undergraduate students (most recently, 160) to join. The success of the program also attracts more and more high-quality students, such as national silver-medal in informatics, to apply for our university.

2. **A program with a good coverage of subjects**. Following the same standard as in CUHK-Shatin, the program has a complete curriculum with major-required and major-elective courses covering all essential areas in CSC, from hardware to software, from system to theory.

Meanwhile, CSC is a fast-developing area. According to *Computing Curricula Report 2020* by ACM and IEEE-CS, its education involves both state-of-the-art techniques and insights into the future. The training includes Knowledge ("know-what"), Skills ("know-how") and Dispositions ("know-why"). **This report focuses on improving students' programming skills**. One measurable objective is to train CSC students with around 50 to 100 thousand lines of code in 4-year UG study.

How To Learn Well in CSC1003?

Week	Content/ topic/ activity
1	Prologue and Introduction
2	Basic Programming Concepts
3	Conditionals & Loops
4	Arrays
5	Input and Output
6	Input and Output, Functions and Libraries
7	Functions and Libraries
8	Midterm Test
9	Recursion
10	Performance
11	Abstract Data Types and Creating Data Types
12	Popular Programming Languages
13	Python Basics
14	Python Basics

CSC1003 Particulars

○ Four Programming Assignments (40% weight)

  ○ The first one is given in week #4

  ○ Roughly one assignment every three weeks after the first one

  ○ May be exempted for NOI gold/silver/bronze winners and first–prize winners in the province–level (come to me for a talk).

○ Midterm (20% weight)

  ○ Closed test in week #8

○ Final Exam (40% weight)

  ○ Closed test, no dictionary, no cheat paper

○ Tough training, Generous grade

CSC1003 Particulars

- Instructor: Dr. Wenye LI
  - wyli@cuhk.edu.cn
  - Rm. 413, Daoyuan Building
  - Office Hour: 10:30–11:30 Mon/Wed
  - Over 20–years Java experiences, one of the earliest batch of Java developers in China mainland.

- Ms. Mickey MA
  - Best TA, Year–1 Ph.D student
- Mr. Yueyao YU
  - Year–4 Ph.D student

- USTFs: to be released soon

○ Lectures conducted in Teaching–B Rm. 201

○ Tutorials conducted in Computer Lab
  ○ TAs and USTFs lead the tutorials

○ Practices conducted in Computer Lab
  ○ USTFs lead the practices

○ Working language: English
  ○ Questions can be in Chinese, but please try English first.
  ○ After–class discussion can be in English/Chinese.

CSC1003 Particulars

Thanks again for Choosing CSC1003

HOPE IT TO BE A PLEASANT START INTO CS/JAVA WORLD!