Academic Counselling Session for New Students

Computer Science and Engineering (BCSE)

Computer Engineering (CENG)

Computer Science (CSCI)

Welcome!

Welcome to CSE.

We are always here to help.

Agenda

1. Brief Introduction of our Department
2. Graduation Requirements & Curriculum Structure for 4-year curriculum (BCSE)
3. Major Allocation for BCSE students
4. Graduation Requirements & Curriculum Structure for 2-year curriculum (CENG & CSCI)
5. Diverse Learning Experience and Other Learning Options
6. Important Reminders
7. FAQ
8. Academic Advising

A Long History

- The first computer science department in HK
- A strong alumni network

CS department established:
CS minor

CENG

CDAS

1968

1978

2019

1973

1991

2022

Offered courses

CS major

AIST –
First AI prog in HK
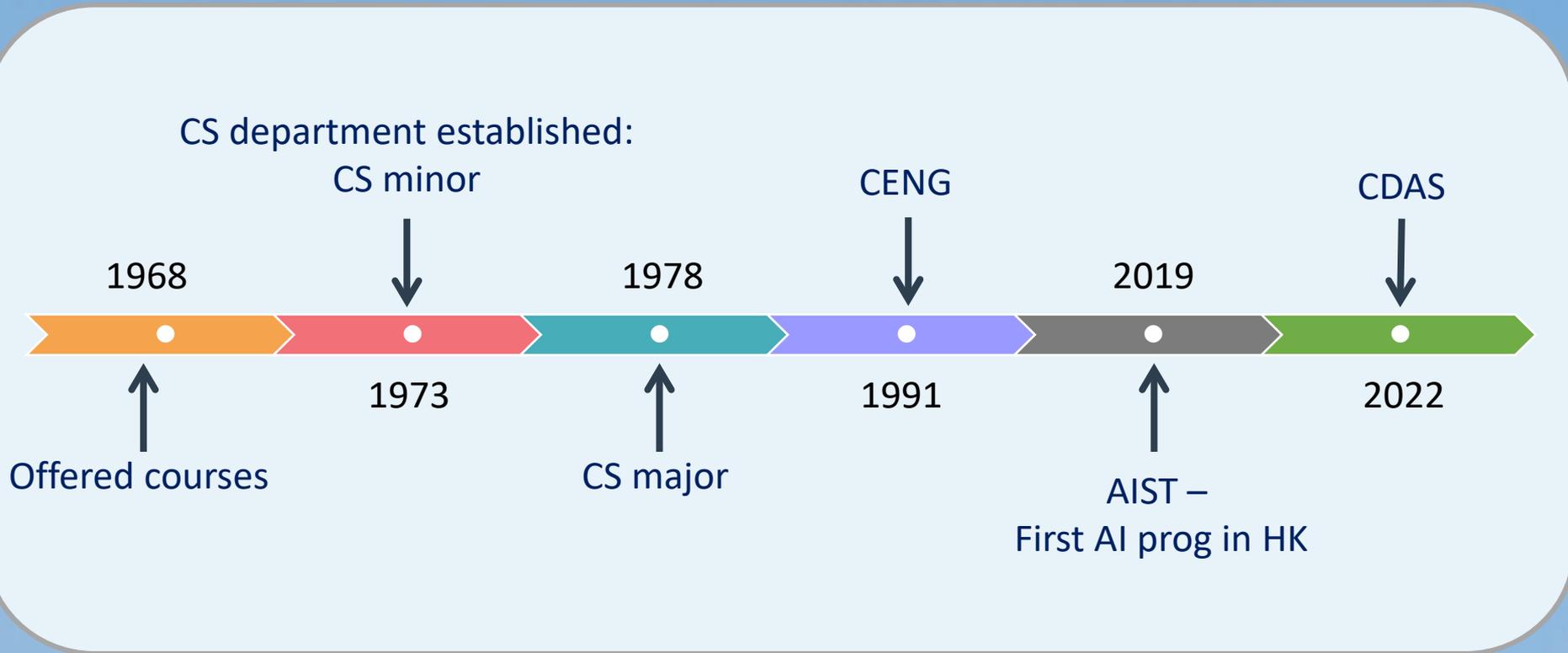
Our Undergraduate Programmes

Department of Computer Science and Engineering (CSE)

Artificial Intelligence: Systems and Technologies

(AIST)

Computer Science and Engineering (BCSE)

(Foundation 1st year)

Computational Data Science

(CDAS)

(Joint Programme with Department of Statistics)

Computer Engineering

(CENG)

Computer Science

(CSCI)

Excellent Teaching and Research Team


- **2021 Kyoto Prize Laureate and Turing Award Recipient**
  Prof. Andrew Yao

- **7 ACM Fellows**
  Prof. Benjamin Wah, Prof. John Lui, etc.

- **13 IEEE Fellows**
  Prof. Irwin King, Prof. Evangeline Young, Prof. Yufei Tao, etc.

- **2022 IEEE CEDA Ernest S. Kuh Early Career Award**
  Prof. Bei Yu

- **Hong Kong Academy of Engineering Sciences Fellows 2021**
  Prof. Michael Lyu

- **Forbes 30 Under 30 Asia (Healthcare & Science Category) – Class of 2022**
  Prof. Yu Li

- **Distinguished Fellow of the Hong Kong Computer Society 2022**
  Prof. Jimmy Lee

Graduation Requirements for Year 1 Entry to BCSE (4-year Curriculum)

Graduation Requirements

| Major Requirements (75 units) | University Core Requirements (39 units) | Free Electives *(9 Units)* | Min. 123 Units for Graduation |

University Core Requirements

University Core Courses	Units Requirements
English Language	8
Chinese Language	5
University General Foundation	6
University General Education	7 (At least 2 units in Area A, C, D)
College General Education	6
Understanding China (UGCP1001) *(online course - complete before graduation in any one term, including summer term)*	1
Hong Kong in the Wider Constitutional Order (UGCP1002) *(online course - complete before graduation in any one term, including summer term)*	1
Digital Literacy and Computational Thinking (ENGG1003 or ENGG1004)	3
Physical Education	2
Total of units required	**39**

Major Requirements

Major Requirements	Computer Engineering (CENG)	Computer Science (CSCI)
Faculty Package	9	
Foundation Courses	17	16
Major Required Courses	31	27
Research Components	6	
Stream Requirements	12	17
Total of units required	**75**	

Curriculum Structure

Curriculum – Major Requirements

4	Final Year Project — Major Electives
3	Major Core — Major Electives
2	Major Foundation — Major Core
1	Faculty Package — Faculty Foundation (Math + Science)

75 units

Curriculum – Faculty Package and Foundation

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

**Faculty Package and Foundation** (15 units)

» Programming (ENGG1110)
» Linear Algebra (ENGG1120)
» Multivariable Calculus (ENGG1130)
» Calculus for Engineers (MATH1510)
» Foundation Science

Curriculum – Major Foundation *for CE*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Foundation (11 units)

» C++ (CSCI1120)
» Complex Variables (ENGG2720)
» Differential Equations (ENGG2740)
» Probability (ENGG2760)
» Statistics (ENGG2780)

Curriculum – Major Core *for CE*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

## Major Core (31 units)

» Digital Logic Design Laboratory (CENG2010)

» Fundamentals of Embedded Systems (CENG2030)

» Embedded System Design (CENG2400)

» Computer Organization and Design (CENG3420)

Curriculum – Major Core *for CE*

|		
4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Core (31 units)

- » Data Structures (CSCI2100)
- » Software Engineering (CSCI3100)
- » Intro to Operating Systems (CSCI3150)
- » Discrete Mathematics and Algorithms (CSCI3190)
- » Computers and Society (CSCI3250)
- » Engineering Practicum (CSCI3251)

Curriculum – Major Core *for CE*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Core (31 units)

» Fundamental of Electric Circuits (ELEG2202)

» Digital Logic and Systems (ENGG2020)
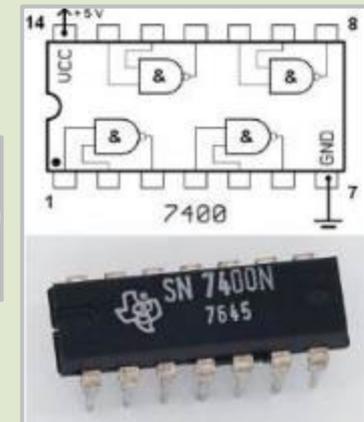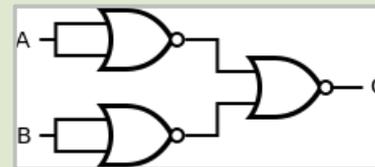
Curriculum – Major Electives *for CE*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Electives (12 units)

Streams

1. **Embedded Systems**
2. **VLSI Design and EDA**

Non-Stream

3. General Computer Engineering
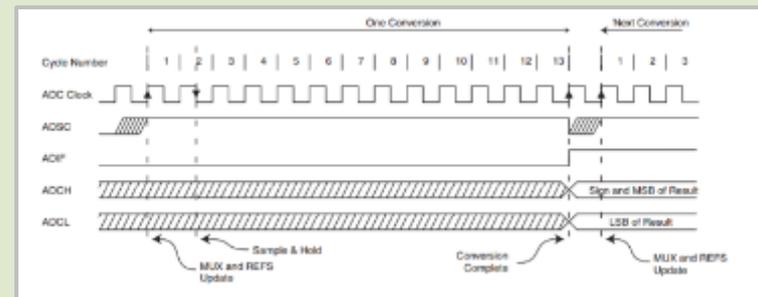
Curriculum – Major Foundation *for CS*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Foundation (10 units)

- » Java (CSCI1130)
- » Discrete Maths (ENGG2440)
- » Probability (ENGG2760)
- » Statistics (ENGG2780)

Curriculum – Major Core *for CS*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Core (27 units)

» Computer Organization and Design (CENG3420)
» Data Structure (CSCI2100)
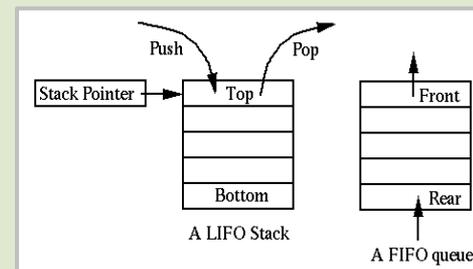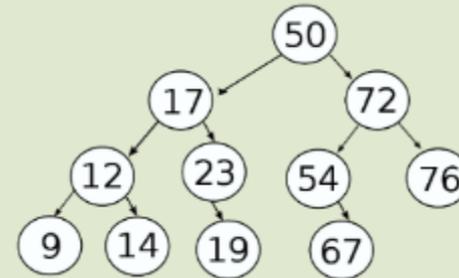
A LIFO Stack   A FIFO queue

Curriculum – Major Core *for CS*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Core (27 units)

» Software Engineering (CSCI3100)

» Formal Languages and Automata Theory (CSCI3130)

» Intro to Operating Systems (CSCI3150)

» Design and Analysis of Algorithms (CSCI3160)

» Principles of Programming Languages (CSCI3180)

Curriculum – Major Core *for CS*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Core (27 units)

» Computers and Society (CSCI3250)

» Engineering Practicum (CSCI3251)

» Digital Logic and Systems (ENGG2020)
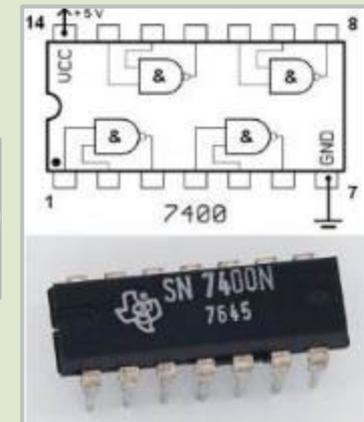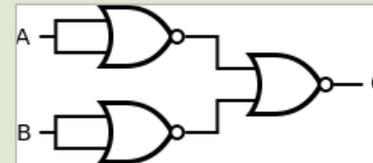
Curriculum – Major Electives *for CS*

4	Final Year Project	Major Electives
3	Major Core	Major Electives
2	Major Foundation	Major Core
1	Faculty Package	Faculty Foundation (Math + Science)

Major Electives (17 units)

Streams

1. Intelligence Science
2. Database and Information Systems
3. Rich Media
4. Distributed Systems, Networks and Security
5. Algorithms and Complexity
6. Data Analytics

Non-Stream

7. General Computer Science

Curriculum – Final Year Project (FYP) for CE & CS

4	Final Year Project · Major Electives
3	Major Core · Major Electives
2	Major Foundation · Major Core
1	Faculty Package · Faculty Foundation (Math + Science)

Final Year Project (6 units)

- » Pick an interesting topic
- » Interdisciplinary nature
- » Apply the knowledge learnt in the previous courses
- » Many open topics. Your creativity and discussion with the supervisor
- » Complete a project under the supervision of an advisor

Major Allocation for BCSE

Major Allocation

- Upon finishing their first year of studies, BCSE students will undergo the "major allocation" exercise and be allocated into either the CENG or CSCI programme

- Allocation is primarily based on CGPA but students' preferences will be accommodated as much as possible

Brief declaration procedures for reference:

Tentative Dates	Details
March-April	_The Department will officially announce the procedures via CSE email; Students will then be given a month to submit their preferences_
Late May/Early June	_Release of Term 2 results;_ _Students will be given 3 days to modify their preferences after the results have been released_
Mid-June	_Release of major allocation results by email_

Note: More info will be provided via email when the exercise starts in March/April. Please stay tuned.

Graduation Requirements for Senior Year Entry to CENG & CSCI (2-year Curriculum)

Graduation Requirements

| Major Requirements (52 units) | University Core Requirements (12 – 16 units) | Free Electives *(Remaining Units if any)* | Min. 69 Units for Graduation |

University Core Requirements

University Core Requirements	Associate Degree Holders	Higher Diploma Holders
English Language	2-unit (ELTU3014)	5 units (ELTU2014 & ELTU3014)
University General Education	3 units (GE Foundation); 2 units (Area A GE course)	
College General Education	2 to 3 units depending on College affiliation	
Understanding China	1-unit *(online course - complete before graduation in any one term, including summer term)*	
Hong Kong in the Wider Constitutional Order	1-unit *(online course - complete before graduation in any one term, including summer term)*	
Physical Education	1-unit	
Total of units required	**12-13**	**15-16**

Major Requirements

Major Requirements	Computer Engineering (CENG)	Computer Science (CSCI)
Faculty Package	3-unit (ENGG1120)	
Foundation Courses	3-unit	7-unit
Major Required Courses	28-unit	21-unit
Research Components	6-unit	
Stream Requirements	12-unit	15-unit
Total of units required	**52**	

Curriculum Structure

Curriculum – Major Requirements *for CE*

T4	Final Year Project (3)	Major Required (6) + Stream Courses (3)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (9)
T2	Faculty Package (3)	Major Required (9)
T1	Major Required (10)	Faculty Foundation (3)

Year 1 Term 1 (13 units)

» Calculus for Engineers (MATH1510)

» Digital Logic Design Laboratory (CENG2010)

» Embedded System Design (CENG2400)

» Discrete Mathematics and Algorithms (CSCI3190)

» Digital Logic and Systems (ENGG2020)

Curriculum – Major Requirements *for CE*

|		
T4	Final Year Project (3)	Major Required (6) + Stream Courses (3)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (9)
T2	Faculty Package (3)	Major Required (9)
T1	Major Required (10)	Faculty Foundation (3)

Year 1 Term 2 (12 units)

» Linear Algebra (ENGG1120)
» Fundamentals of Embedded Systems (CENG2030)
» Computer Organization and Design (CENG3420)
» Data Structures (CSCI2100)
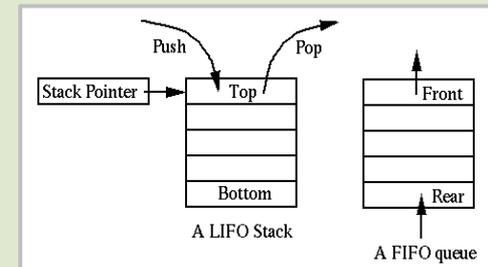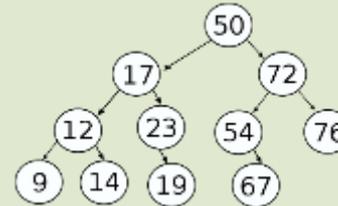
Curriculum – Major Requirements *for CE*

T4	Final Year Project (3)	Major Required (6) + Stream Courses (3)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (9)
T2	Faculty Package (3)	Major Required (9)
T1	Major Required (10)	Faculty Foundation (3)

Year 2 Term 1 (15 units)

» FYP (CENG4998)

» Intro to Operating Systems (CSCI3150)

» Stream courses (9 units)

Curriculum – Major Requirements *for CE*

T4	Final Year Project (3)	Major Required (6) + Stream Courses (3)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (9)
T2	Faculty Package (3)	Major Required (9)
T1	Major Required (10)	Faculty Foundation (3)

Year 2 Term 2 (12 units)

» FYP (CENG4999)
» Software Engineering (CSCI3100)
» Computers and Society (CSCI3250)
» Engineering Practicum (CSCI3251)
» Stream courses (3 units)

Curriculum – Major Requirements *for CE*

T4	Final Year Project (3)	Major Required (6) + Stream Courses (3)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (9)
T2	Faculty Package (3)	Major Required (9)
T1	Major Required (10)	Faculty Foundation (3)

Major Electives (12 units)

Streams

1. **Embedded Systems**
2. **VLSI Design and EDA**

Non-Stream

General Computer Engineering
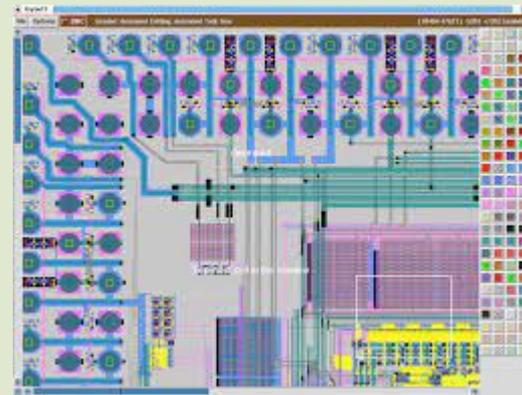
Curriculum – Major Requirements *for CS*

T4	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T2	Faculty Package (3)	Foundation (2) + Major Required (9)
T1	Stream Courses (3)	Foundation (5) + Major Required (6)

Year 1 Term 1 (14 units)

» Discrete Maths (ENGG2440)
» Probability (ENGG2760) (2)
» Formal Languages and Automata Theory (CSCI3130)
» Design and Analysis of Algorithms (CSCI3160)
» Stream courses (3 units)

Curriculum – Major Requirements *for CS*

T4	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T2	Faculty Package (3)	Foundation (2) + Major Required (9)
T1	Stream Courses (3)	Foundation (5) + Major Required (6)

Year 1 Term 2 (14 units)

» Linear Algebra (ENGG1120)
» Statistics (ENGG2780)
» Computer Organization and Design (CENG3420)
» Software Engineering (CSCI3100)
» Principles of Programming Languages (CSCI3180)

Curriculum – Major Requirements *for CS*

T4 | Final Year Project (3) | Major Required (3) + Stream Courses (6)

T3 | Final Year Project (3) | Major Required (3) + Stream Courses (6)

**T2** | Faculty Package (3) | Foundation (2) + Major Required (9)

T1 | Stream Courses (3) | Foundation (5) + Major Required (6)

Year 2 Term 1 (12 units)

» FYP (CSCI 4998)
» Intro to Operating Systems (CSCI3150)
» Stream courses (6 units)

Curriculum – Major Requirements *for CS*

T4	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T2	Faculty Package (3)	Foundation (2) + Major Required (9)
T1	Stream Courses (3)	Foundation (5) + Major Required (6)

Year 2 Term 2 (12 units)

» FYP (CSCI 4999)

» Computers and Society (CSCI3250)

» Engineering Practicum (CSCI3251)

» Stream courses (6 units)
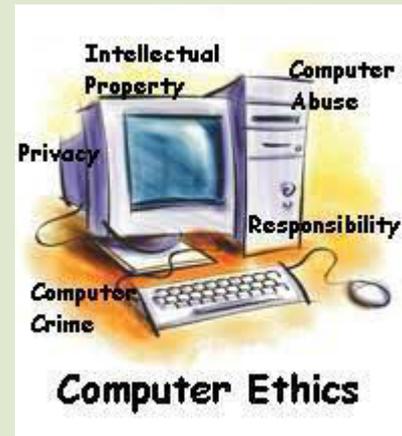
Computer Ethics

Curriculum – Major Requirements *for CS*

T4	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T3	Final Year Project (3)	Major Required (3) + Stream Courses (6)
T2	Faculty Package (3)	Foundation (2) + Major Required (9)
T1	Stream Courses (3)	Foundation (5) + Major Required (6)

Major Electives (17 units)

Streams

1. **Intelligence Science**
2. **Database and Information Systems**
3. **Rich Media**
4. **Distributed Systems, Networks and Security**
5. **Algorithms and Complexity**
6. **Data Analytics**

Non-Stream

7. General Computer Science

Distinct Topics for Both 4-year and 2-year Curriculum

- Many other practical and interesting courses:
  - » Algorithms
  - » Big Data Analytics and Machine Learning
  - » Cloud Computing
  - » Computer-aided Design for Very Large Scale Integrated Circuits
  - » Computational Finance
  - » Computer Graphics and Multi-media
  - » Computer Game Software
  - » Computer and Network Security
  - » Databases
  - » Energy Efficient Computing
  - » Embedded System Development and Applications
  - » Networks
  - » Operating Systems
  - » Rapid Prototyping of Digital Systems
  - » Smart Hardware Design
  - » ……

Diverse Learning Experience and Other Learning Options

International / Local Competitions

Champion in ACM-HK Programming Contest 2024

Champion in Robocon Hong Kong Contest in 2021 and 2022

First Prize in the Cloud Track of the Huawei ICT Competition (2023)

Industrial Visits

- Visit to companies to learn latest development in industry

Cathay Pacific

The Hong Kong Productivity Council

PwC

Work-Study Scheme

3 years study + 1 year work-study + 1 final year study

Exchange

- Students often do overseas exchange in the 2nd or 3rd year

- Credit transfer
  - PLEASE apply for credit transfer **IN ADVANCE** by providing the course details to the Department before enrolling the courses in the exchange university.
  - Grade B is required for credit transfer

Exchange Opportunities

e.g.

- The University of Sydney, Australia
- University of Toronto, Canada
- University of Waterloo, Canada
- Tsinghua University, China
- Seoul National University, Korea
- Nanyang Technological University, Singapore
- National University of Singapore, Singapore
- University College London (UCL), UK
- Georgia Institute of Technology, USA
- University of Illinois at Urbana-Champaign, USA
- ETH Zurich, Switzerland

Life at CUHK

- Living on Campus: http://www.cuhk.edu.hk/english/campus/accommodation.html

- Library: https://www.lib.cuhk.edu.hk/
  - Past papers

- Independent Learning Center (ILC) https://www.ilc.cuhk.edu.hk/

- Facebook page:
  - 中大人資訊專頁 https://www.facebook.com/cuhkinfo

Other learning options

Double degree with IBBA

Double majors & Minor

Important Reminders

- Treasure your time in University.

- Mange your time wisely:
  study, extra-curricular activities, part-time job, etc.

- Study scheme is updated every year.
  You SHOULD follow the study scheme of your entry year, i.e., **2024 entry**, and keep following it when you progress.

- Pay attention to course prerequisites!

- Declaration of stream:
  you should declare in September of your final year.

Important Reminders (cont)

- Our CSE Technical Team will provide each of you with a CSE email account before school starts for communication purposes, and also for accessing our systems and PCs in our labs.

- Make good use of our intranet for UG students:
The department will make announcements via CSE emails or put the announcements in our intranet.
https://i.cse.cuhk.edu.hk/undergraduate/
(access through Department website)

- Set up email forwarding to/from your CUHK email account and CSE email account so that you do not miss out on any important announcements

FAQ

Q1: Can I "NOT follow" the recommended study pattern?

Almost all courses are **pre-assigned in year 1.**

You need to obtain the Department's consent to drop the required courses.

We advise against not following the study pattern.
If you do so, you may face **time conflict** in the major required courses in your senior years.

Q2: Can I take more than 18 units per semester?

Yes, you may apply for **credit overload** in a semester, but we **do not recommend rushing to finish your study**.

Note:
Some students may be pre-assigned to take 19 units in year 1. It depends on your affiliated college; some colleges will pre-assign College General Education (GE) for students, while some will not.

Q3: Where can I find course information?

- CUSIS
  - **Teaching timetable by Subj/Dept**
    - Make sure to select "view all"
  - **Browse Course Catalog**: Course syllabus, learning outcomes
  - **Browse Program Information**: Study scheme

Useful Links

- **Student Handbook**

https://www.aqs.cuhk.edu.hk/undergraduate-student-handbook/#undergraduate-student-handbook/

- **Registration and Examinations Section (RES)**

http://www.res.cuhk.edu.hk/

- **Office of Academic Links (OAL)**

https://www.oal.cuhk.edu.hk/

- **Office of Student Affairs (OSA)**

http://www.osa.cuhk.edu.hk/

- **Financing Your Studies by the Office of Admissions and Financial Aid**

http://admission.cuhk.edu.hk/finance.html

- **ITSC**

https://www.itsc.cuhk.edu.hk/

- **Library**

https://www.lib.cuhk.edu.hk/

Q4: Can I apply for course exemption using Associate Degree / Higher Diploma courses?

Yes, you may apply, but they will be considered on a case by case basis.

Upon approval, you will be exempted from the approved course(s) only, but NOT the units.

You are required to take other major courses to fulfill the major requirements.

Q5: Can I declare more than one stream?

No, you cannot.

CE

Major Electives (12 units)

Streams

1. **Embedded Systems**
2. **VLSI Design and EDA**

Non-Stream

3. General Computer Engineering

CS

Major Electives (17 units)

Streams

1. **Intelligence Science**
2. **Database and Information Systems**
3. **Rich Media**
4. **Distributed Systems, Networks and Security**
5. **Algorithms and Complexity**
6. **Data Analytics**

Non-Stream

7. General Computer Science

Lastly,
Academic Advising

Academic Advising

-Every student is assigned an academic advisor

-You will meet at least once a year for purposes of general supervision such as course selection, guided study, adaptation to University learning modes and disciplinary fundamentals, etc.

-Students with academic problems or on academic probation / extended probation are required to have a monthly meeting with the academic advisor.

Contact Us

✉ dept@cse.cuhk.edu.hk

🖱 http://www.cse.cuhk.edu.hk

Note:

Our department is responsible for AIST / CENG / CSCI courses only. If you have questions on other courses, please contact the concerned course offering department for assistance.

Thank you and see you in class!