EMBRACE CHANGE
IN THE CENTURY OF
ENGINEERING
掌握變革・擁抱工程世紀

COMPUTER ENGINEERING PROGRAM

What is Computer Engineering (CPEG)?

Computer Engineering (CPEG) is the **heart of the information age**. It focuses on the **analysis, design, implementation, and utilization of computer systems**, from embedded microprocessors, notebook/desktop computers to supercomputers, as well as how they are integrated with other systems and devices so that they can interact with the physical world and meet the challenges of real-world applications. CPEG is driving advances in robotics, telecommunications, automation, medical technologies, and Internet of Things.

CPEG is a practical field that bridges the gap between computer science and electronic engineering, and is the **link between software and hardware**. The emphasis of computer engineering is placed on deep understanding of both hardware and software and their cross-interaction in the design of cutting-edge electronic and computer systems.

For example, the mobile phone payment we use nowadays is a piece of hardware and the apps that execute payment is a piece of software. It is essential that both hardware and software must work together and interact smoothly so as to ensure the functionality and reliability of the overall system.

Why is CPEG useful?

Understanding how software runs on a computer or on a general-purpose processor is very important because you can optimize and improve the performance of your system. For today's electronic devices, we are not only concerned about functionality but also performance and power constraints, an extremely important consideration for mobile devices and Internet of Things.

What is the difference between Computer Science and Engineering, Electronic and Computer Engineering, and Computer Engineering?

COMP Software
Department of Computer Science & Engineering (CSE)

CPEG
Software + Hardware + Cross-interaction

ELEC Hardware
Department of Electronic & Computer Engineering (ECE)

Highlights

2-IN-1: BEST OF BOTH WORLDS
Balanced training on both hardware and software skills, covering all architectural and engineering aspects of computer-based systems.

FLEXIBLE CHOICES FOR FINAL YEAR PROJECT
Final year students enjoy the freedom to select a CSE or ECE final year project according to their latest interests.

BENEFIT FROM LAB RESOURCES AND FACILITIES OF 2 DEPARTMENTS
- CPEG students can take full advantages of state-of-the-art facilities of both the CSE and ECE Departments.
- CPEG is a well-integrated 2-in-1 program!

WIDE RANGE OF AREA CHOICES
After learning the fundamentals of software, hardware and system, CPEG students can deepen their knowledge by taking elective courses in various technical areas of specialization:

- Communications
- Embedded Systems/ Robotics
- Semiconductors/ VLSI
- Systems/ Networking

SYSTEM FUNDAMENTALS
SOFTWARE FUNDAMENTALS
HARDWARE FUNDAMENTALS
ENGINEERING FUNDAMENTALS
UNIVERSITY COMMON CORE

- Artificial Intelligence/ Theory
- Graphics/ Multimedia
- Signal Processing
- Software/ Database

MORE JOB OPPORTUNITIES
Job opportunities of CPEG graduates span both software and hardware as well as any area involving applications of information and communication technology. Examples include system analysts, network analysts, network designers, programmers, IC design engineers, hardware engineers, software engineers etc., in engineering business as well as management and banking sectors. Employers of our graduates include:

- Google, Facebook, ASTRI, DHL, EPSON, Lenovo, IBM, HP, VTech, CLP
- PCCW, SmarTone, HKT, Hutchison Telecom, China Mobile HK
- Thomson Reuters, Cathay Pacific, HK Police Force, HK Disneyland, MTR
- Credit Suisse, Merrill Lynch, KPMG, Goldman Sachs, Morgan Stanley, UBS, Bank of China, HSBC, Citibank, JP Morgan etc.

香港科技大學
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

工學院
SCHOOL OF ENGINEERING

cpeg.ust.hk

We have bright students...become ONE of us!

2 CPEG students: LUENAM Phoomraphee and CHAN Lawrence Ki-on got the AAA award 2019!

AAA is the highest honor bestowed by HKUST on UG students upon graduation. This means: they have no record of course failed and got CGA of at least 3.9.

HKUST Robotics Team won the 1st Runner-Up and Dynamisel Awards in the 5th ROBO-ONE AUTO competition 2019 in Japan

A HKUST Robotics Team of 5 members from CPEG, ECE, CSE and MECH, **with Team Leader LEE Chun Hei (CPEG Yr-4)**, won the 1st Runner-up and Dynamizer awards in the competition on Sep 28 2019 in Kanagawa, Japan. First time for Hong Kong!

CSE FYP Project Received Bronze Award in the Pan-Pearl River Delta Region IT Project Competition 2019

Their FYP project **"OtherSide - An Augmented Reality Mobile Online Role Playing Game to Promote Using the HKUST Library"**, uses mobile application as the platform to help students of HKUST get familiar with the library services.

CPEG Year-4 students LAI Shiu Fung, WONG Pui Yee & MA Kin Lam won the Bronze Award in the Pan-Pearl River Delta Region University IT Project Competition 2019.

Firebird CTF Team Won Championship of PwC Hackaday 2019

The competition, organized by PwC HK, HackaDay, serves as a platform to raise the competency level of future talents to better prepare them for a meaningful career in cybersecurity. There were in total twelve teams competing.

The Firebird CTF team that includes CPEG students Tse Hon Chung & Li Hong Lem, has won the championship of the *"PwC HackaDay, Capture the Flag"* cybersecurity competition.

CPEG Students Achieved Excellent Result in HKUST President's Cup 2018

Out of the 5 awards in this year's HKUST President's Cup, **CPEG students have received 4** including the President's Cup Winner, Gold Award and Special Mention.

These were the winning projects:
President's Cup Winner: Home Based Device for Urine Test at Lab Level of Accuracy
Gold Award: 3D Reconstruction and AR Indoor Navigation
Gold Award: Autonomous Domestic Water Purification System with Mobile Application
Special Mention: Sonar & Acoustic Communication Systems for Urban Water Supply Systems

Our Single Stop ENQUIRY

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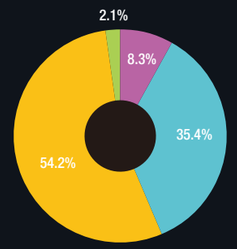
HKUST COMPUTER ENGINEERING PROGRAM

http://www.cpeg.ust.hk

CAREER Prospect

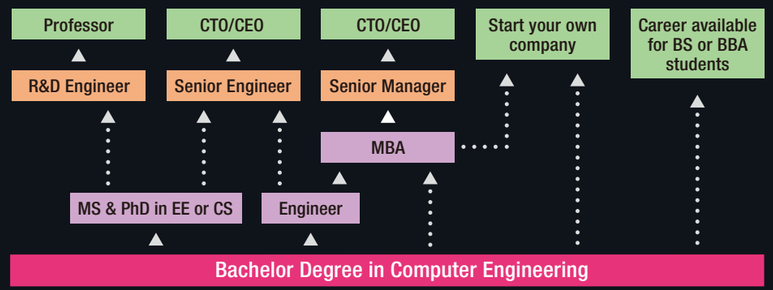
Employers of our previous graduates include: BOC, CTI, DHL, EPSON, HK Bank, Hutchison Telecom, Motorola, Goldman Sachs, PCCW, Cathay Pacific Airways, Merril Lynch, etc.



Facts and figures 2017

Government	0%
Education	8.3%
Engineering & Industries	35.4%
Commerce & Business	54.2%
Community & Social Services	2.1%

Career in Computer Engineering



ADMISSION Requirements

Applicants must meet general entrance requirement and the School-specific requirement. After admission to the School of Engineering (JUPAS Catalogue No.: JS5200), students will take the compulsory University Core Curriculum program and learn the fundamental of the major programs of the School in the first 2 to 3 terms. Academic advice will be provided to help students explore their interest before choosing their majors.

School	General entrance requirement: (1) 4 cores + 2X OR (2) 4 cores with M1/M2 + 1X					
	Subjects and level					
	English Language	Chinese Language	Mathematics (Compulsory Module)	Liberal Studies	Elective 1	Elective 2 OR M1/M2
Engineering	3	3	3	2	3	3
School-specific requirements	One of: Biology / Chemistry / Physics / Combined Science / Information and Communication Technology					

Note:
X: Elective subjects
M1: Mathematics Extended Module 1 (Calculus & Statistics)
M2: Mathematics Extended Module 2 (Algebra & Calculus)

MTPC-G19xxx

HKUST
Computer Engineering Program

A MESSAGE
From The Directors

Welcome to Computer Engineering CPEG!

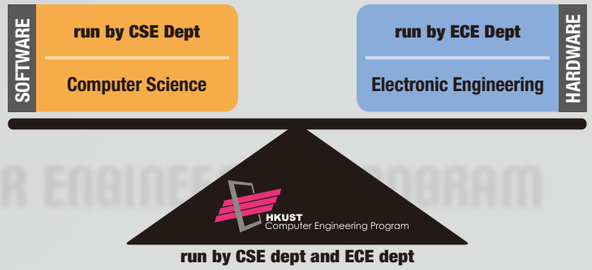
CPEG is at the heart of the information age. It is a challenging program for the brave hearts and the high-achievers. With a unique research emphasis and well-equipped laboratories, our forward-looking curriculum teaches you the state-of-the-art technologies. Our objective is to provide students with a broad and well-integrated background of computer systems involving a balanced training spanning hardware, software and management. Industry-sponsored projects and internship programs give our students direct exposure to real-world issues, thus ensuring good job prospects for our graduates. We understand that young minds need the highest degree of flexibility as they explore their strengths and interests, and most importantly, we inspire, challenge and guide our students to aim high and excel through frequent faculty-student interaction. All of these explains why CPEG graduates have always found great jobs, and employers keep coming back to us. Find out by yourself. You will enjoy this challenge.


Prof. Wilfred NG


Prof. Levent YOBAS

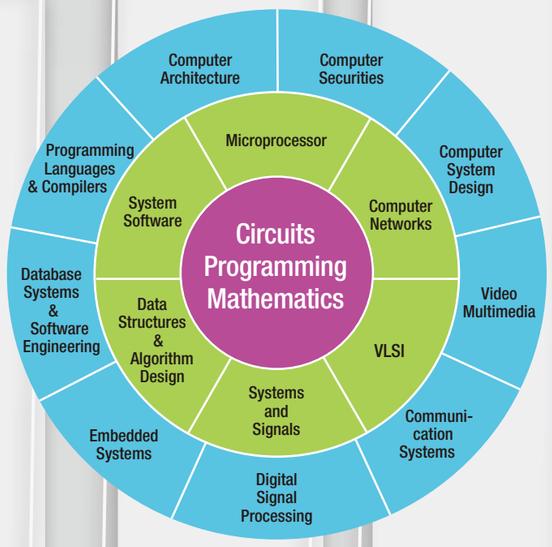
What is Computer Engineering CPEG?

- CPEG focuses on the design, implementation and application of computer systems.
- CPEG is jointly run by the Department of Electronic and Computer Engineering (ECE), and the Department of Computer Science and Engineering (CSE).
- It bridges the gap between computer science and electronic engineering and is the link between software and hardware.

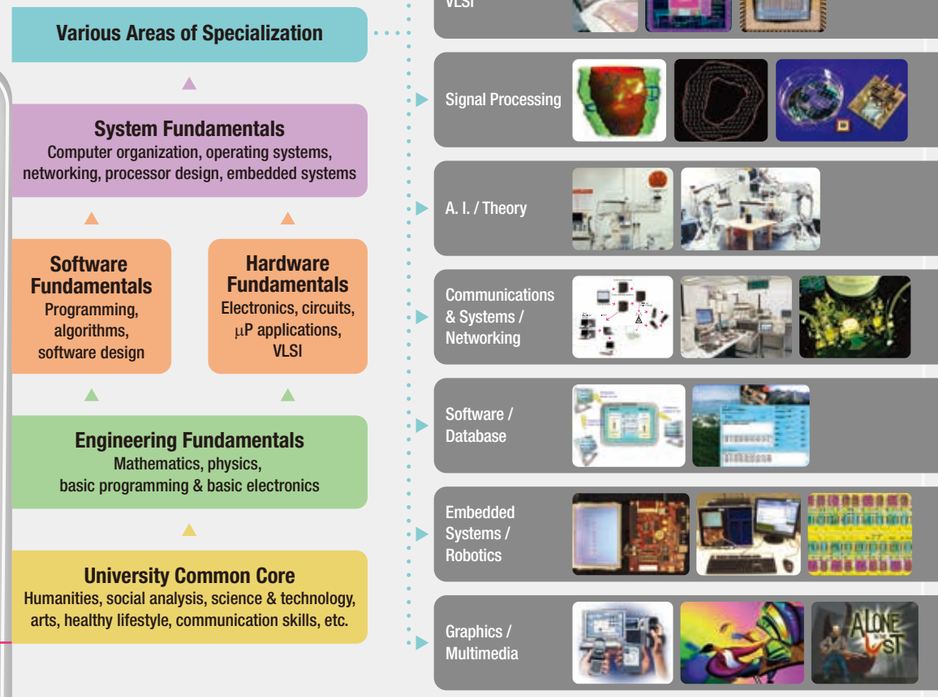


Program FEATURES

- State-of-the-art and flexible curriculum.
- Balanced mixture of hardware and software courses.
- Best of both worlds – takes full advantage of the faculty, teaching staff, hardware and software facilities of both ECE and CSE departments. It's indeed a well-integrated 2 in 1 program!



CPEG ACADEMIC PROGRAM



What is the difference between CPEG and Computer Science and Engineering (CSE), and Electronic and Computer Engineering (ECE)?

- CSE focuses mainly on software related topics.
- ECE focuses mainly on hardware related topics.
- CPEG aims at providing its students with a well-integrated and balanced software and hardware knowledge.
- Emphasis in CPEG is placed on deep understanding of both hardware and software and their cross-interaction in order to design cutting-edge and advanced electronic and computer systems.