Taught Postgraduate Scheme in Computing

MSc in E-Commerce
MSc in Software Technology
MSc in Information Technology

Contents of this publication are subject to review and change.

PolyU COMP
FinTech
Big Data
Human Computer Interaction
Internet of Things
Information Security
Cloud Computing

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www.comp.polyu.edu.hk
ABOUT
THE DEPARTMENT OF COMPUTING

The Department of Computing (COMP) has a proud history of over 40 years. It was established in 1974 as the first department offering computing education in the territory, nurturing professional talents to support the society’s advancement. Today, COMP has gained international recognition in world-class research and high quality education. It is ranked 49th in the QS World University Rankings by Subject 2016 – Computer Science & Information Systems and ranked 31st in Computer Science in the “2017 Best Global Universities Rankings” released by the U.S. News and World report. Looking into the future, COMP is determined to assert its position as the leader in interdisciplinary research and education in computing, generating worldwide impact and benefiting to mankind. COMP envisions that it will become the indispensible and influential icon in SMART computing internationally.

COMP is devoted to creating a nurturing environment and creating excellent learning experiences for students, inspiring them to unleash their potentials into becoming future innovators. It delivers high quality research postgraduate programmes, taught master programmes and undergraduate programmes in computer science and multidisciplinary areas of IT and enterprise computing. Its programmes integrate theories, systems and applications, meeting the needs of students who wish to pursue their career in computing related fields.

TAUGHT POSTGRADUATE SCHEME
OBJECTIVE

Our Postgraduate Scheme in Computing is one of the oldest and largest programmes offering taught postgraduate computing education in Hong Kong, which is tailored to suit the professional needs of students from diverse backgrounds. Students benefit not only from earning the fundamental theories, core and applied technologies, and industry best practices but also from interaction with their peers in exchanging ideas and sharing experiences. They acquire both advanced expertise and professional networks that help them scale new heights in their careers.
Promising career advancement
According to our 2016 Graduate Employment Survey, 42% of our graduates were promoted to a higher position compared with the time when they applied for our MSc programmes. Many of our alumni have become leaders and established a very good reputation in various sectors. Some of them are now managers and top executives in prominent companies in the IT industry such as Alibaba, IBM, Tectura, as well as organizations in other industries like Accenture, China Telecom, CLP, Hospital Authority, HSBC, Hutchison, Hong Kong Productivity Council, Hong Kong Stock Exchange, MTRC, PCCW, etc.

Wide variety of subjects that cover hot IT topics
Students enjoy flexible options in studying with over 40 core and elective subjects. COMP frequently reviews the programme curriculum, offering subjects to align with the fast-changing market needs as well as students' demand from time to time. We have newly introduced a new subject “Big Data Computing” and decided to offer new content covering hot IT topics such as FinTech, Internet of Things (IoT) and Information Security, through classroom teachings and workshops.

Practical industry workshops and training sessions
Our Scheme offers extra learning opportunities to enhance students' study experience. The Java Programming workshop is part of the learning and teaching activities designed to help students with no programming experience. We also offer workshops on various topics such as Microsoft AI and Microsoft Blockchain to strengthen students' technical skills and hands-on experiences. In the past summer, we cooperated with Microsoft to offer workshops on "Machine Learning on Cloud", which received very positive feedback from the participants. Certificates were issued to them after completing the workshops. Besides, we always invite renowned speakers to deliver talks and forums, such as Google Security Talk, to help students enrich industrial experience and awareness of the latest technologies development.

Advanced learning facilities and joint labs
COMP conducts advanced research contributing to the world's fast technological growth. We have established joint laboratories and been working closely with industry-leading companies such as IBM, Microsoft, Yonyou. These joint laboratories are not only supporting research activities but also teaching and learning as well as knowledge transfer purposes. They also open space for producing world-renowned output applicable to commercial and industrial uses and creating high values in both education and research aspects.

COMP provides other resources for students to undertake project and dissertation on different topics. Students have the opportunity to access the Virtual Reality and Augmented Reality System in the Computing Outreach Lab as well as the Big Data and Cloud Computing Platform to perform their research studies. Students are also welcome to attend all the research seminars held by the department to understand the latest state of research in the IT field.
Flexible mode of study and choices of specialty

The programmes in this Scheme offer both full-time and part-time mode of study. Different study patterns including the combination of a dissertation, a project and subjects of equivalent credits are available for students to choose according to their schedule and preference. Students can also apply for changing their speciality and ultimate award upon fulfilling the programme’s graduation requirement.

MSc in E-Commerce
The MSc in E-Commerce provides a new generation of knowledge to technical personnel as well as managers and business executives in E-Commerce both in the technology and management aspects. In the technology aspect, it offers students the opportunity to examine various issues of E-Commerce, with a focus on the enabling technologies and techniques. In the management aspect, it allows students to understand the opportunities offered by E-Commerce and the business and management issues involved in deploying E-Commerce systems.

MSc in Software Technology
The MSc in Software Technology provides students with Computer Science or Information Systems background to pursue in-depth studies in software technologies. It emphasises on the application of software technologies to solve business, industrial problems and the state-of-the-art software engineering and management. Students have the opportunities to specialise in major areas in software technology and develop the ability to assimilate and to apply the acquired knowledge.

MSc in Information Technology
The MSc in Information Technology serves as a bridging programme for professionals from Science and Engineering background that are not from Computing to acquire the core and applied knowledge in IT. It is designed and structured to incrementally help students to build a strong foundation in core concepts and further reinforced through solving IT problems in the form of projects.

Diversified future prospects
Our Scheme offers a comprehensive curriculum with cutting-edge subjects to cater for students from various backgrounds with different academic and career developmental needs. With such an environment of broad student mix, students benefit not only from learning the core theories, applied technologies, and industry best practices, but also from doing projects, and potential interactions with over one hundred of MSc students coming from diverse backgrounds and industries. The career opportunities for our students who complete the programme are multi-folded. Fundamentally, our graduates are equipped with comprehensive and professional IT knowledge, as well as practical skills such as critical thinking, effective communication, problem-solving and lifelong learning skills which are beneficial to career development in many sectors.

Double master degrees with overseas universities
Our Scheme provides valuable opportunities for students to join the concurrent enrollment programme where they can graduate with two master degrees. The programme allows students to enjoy credit transfers between COMP and our collaborative departments at University of Cincinnati in the USA and University of Messina in Italy, and earn two master degrees within the same study period. Through the programme, students not only can enrich their learning and cultural experience by immersing themselves in a different study environment but also expand their professional network internationally.
PROGRAMME STRUCTURE

Students can select from a wide range of subjects offered under the Postgraduate Scheme in Computing. In general, each subject takes place once a week in the evening over a 13-week semester. Full-time students normally take 4 subjects in a semester and complete the study in 1.5 years, whereas part-time students usually take 2 subjects in a semester and complete the study in 2.5 years.

The programme requires the completion of 30 credits.

- Regular subject – 3 credits each
- Dissertation – 9 credits
- Project – 6 credits
- Independent Study – 3 credits

* Non-local students subject to visa requirements are required to take a full-time study load (i.e. at least 9 credits for each semester).

While every specialty programme has its own group of core subjects, a wide range of elective subjects is offered. Students are allowed to choose from a common pool of electives within the Department of Computing as well as from other departments, subject to vacancies available.

To fulfill the graduation requirement, students can choose from the following study patterns:

**MSc in E-Commerce and MSc in Software Technology**
(A) Complete 7 subjects (at least 5 must be core with 3 from core-1 and 2 from core-2) + a dissertation
(B) Complete 8 subjects (at least 6 must be core with 4 from core-1 and 2 from core-2) + a project
(C) Complete 10 subjects (at least 6 must be core with 4 from core-1 and 2 from core-2)

**MSc in Information Technology**
(A) Complete 7 subjects (at least 3 core subjects and 2 fundamental subjects) + a dissertation
(B) Complete 8 subjects (at least 4 core subjects and 2 fundamental subjects) + a project
(C) Complete 10 subjects (at least 4 core subjects and 2 fundamental subjects)

For more information about the curriculum, please visit www.comp.polyu.edu.hk/en-us/prospective-students/taught-postgraduate-programmes.

**Credit transfer**

Students can transfer up to 15 credits of subjects at postgraduate level in general to our MSc Programmes. The consideration for credit transfer is subject to the maximum validity period of 8 years and the grade performance at B or above. Students should submit application of credit transfer within the first term after admission and it is subject to approval by the Scheme Leader.
<table>
<thead>
<tr>
<th>Faculty Members</th>
<th>Research Interests</th>
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<tbody>
<tr>
<td><strong>Dr AU Man Ho Allen</strong>&lt;br&gt;MPHIL(CUHK); PhD(Wollongong); MIEEE</td>
<td>Information Security and Privacy, Applied Cryptography, Accountable Anonymity, Cloud Computing</td>
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<tr>
<td><strong>Prof. BACIU George</strong>&lt;br&gt;PhD(Waterloo); MIEEE; MACM; MIEEE</td>
<td>Computer Graphics, Virtual Reality, Data Visualization, Collision Detection, Motion Synthesis and Dynamics of Large-Scale Deformable Surfaces, Virtual Clothing, Geometric Modeling, Texture Analysis and Image Processing</td>
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<tr>
<td><strong>Prof. CAO Jiannong</strong>&lt;br&gt;PhD(Washington State); FIEEE; MACM; SMCCF</td>
<td>Parallel and Distributed Computing, Wireless Networks and Mobile Computing, Big Data and Cloud Computing, Pervasive Computing</td>
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<tr>
<td><strong>Dr CAO Yixin</strong>&lt;br&gt;PhD(TAMU); MACM; MIEEE</td>
<td>Algorithmic Graph Theory, Combinatorial Optimization, Social Networks, Bioinformatics</td>
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<tr>
<td><strong>Dr CHAN Chun Bun Henry</strong>&lt;br&gt;PhD(British Columbia); MACM</td>
<td>Networking and Communications, Cloud Computing, Internet Technologies, Electronic Commerce</td>
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<tr>
<td><strong>Prof. CHAN Chun Chung Keith</strong>&lt;br&gt;PhD(Waterloo)</td>
<td>Machine Learning, Artificial Intelligence, Data Analytics, Bioinformatics and Computational Biology, Evolutionary Computation, Fuzzy Systems, Software Engineering</td>
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<tr>
<td><strong>Dr CHANG Kow Chuen Rocky</strong>&lt;br&gt;PhD(Rensselaer); MIEEE; MACM</td>
<td>Network Measurement Systems and Analytics, Cyber Security and Privacy, User QoE Measurement, Network Operations and Management</td>
</tr>
<tr>
<td><strong>Dr CHUNG Fu Lai Korriz</strong>&lt;br&gt;MPhil, PhD(CUHK); MIEEE</td>
<td>Data Mining, Machine Learning, Big Data Analytics, Computational Intelligence, Pattern Recognition, Multimedia</td>
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<tr>
<td><strong>Dr GUAN Nan</strong>&lt;br&gt;PhD(Uppsala); MIEEE</td>
<td>Real-Time Embedded Systems, Cyber-Physical Systems</td>
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<tr>
<td><strong>Prof. GUO Song</strong>&lt;br&gt;PhD(Ottawa); SMIEEE; MMAI</td>
<td>Cloud Computing and Big Data, Green Communications and Networking, Crowd Intelligence and Social Network, Modeling, Optimization and Evaluation for Distributed Systems, Security and Privacy</td>
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<tr>
<td><strong>Dr JANSSON Jesper</strong>&lt;br&gt;MSc, PhD(Lund)</td>
<td>Graph Algorithms, Data Structures, Bioinformatics</td>
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<tr>
<td><strong>Dr LEONG Hong-va</strong>&lt;br&gt;PhD(CUHK); PhD(California); MACM; MIEEE</td>
<td>Parallel and Distributed Computing, Distributed Databases, Mobile Computing, Internet Computing</td>
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<tr>
<td><strong>Dr Li Shuai</strong>&lt;br&gt;PhD(Stanford)</td>
<td>Robotics, Dynamic Systems and Control, Recurrent Neural Networks, Distributed Control and Optimization, Robot Vision, Image Processing</td>
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<tr>
<td><strong>Dr Li Wenjie Maggie</strong>&lt;br&gt;PhD(CUHK); MACM; MIEEE</td>
<td>Natural Language Processing, Social Media Mining, Text Mining, Information Retrieval, Extraction and Summarization</td>
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<tr>
<td><strong>Dr LIU Yan Fiana</strong>&lt;br&gt;PhD(Columbia)</td>
<td>Deep Learning, Manifold Learning, Distance Learning, Feature Extraction, Classification, Regression, Image Annotation, Video Summarization, Incomplete Data Analysis, Emotion Modeling, Brain Wave Data Analysis, Music Therapy</td>
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<tr>
<td><strong>Dr LOU Wei</strong>&lt;br&gt;PhD(Florida Atlantic); MIEEE</td>
<td>Mobile Ad Hoc and Sensor Networks, Computer Networks, Mobile Computing, Multimedia Systems</td>
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<tr>
<td><strong>Prof. LU Qin</strong>&lt;br&gt;PhD(UOC)</td>
<td>Natural Language Process and Computational Linguistics, Lexical Semantics, Information Extraction and Knowledge Discovery, Open Systems and Standardization</td>
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<tr>
<td><strong>Dr LUK Wing Pong Robert</strong>&lt;br&gt;PhD(Southampton); FBCS; SMIEEE; CEng; CTP</td>
<td>Information Retrieval, Pattern Recognition, Natural Language Processing, Data Structures and Algorithms</td>
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<tr>
<td><strong>Dr LUO Xiapu Daniel</strong>&lt;br&gt;PhD(PolyU); MIEEE</td>
<td>Network and System Security, Information Privacy, Internet Measurement, Cloud Computing</td>
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<tr>
<td><strong>Dr NG To Yee Vincent</strong>&lt;br&gt;PhD(Simon Fraser)</td>
<td>Databases, Data Mining and XML, Medical Informatics</td>
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<tr>
<td><strong>Dr NGAI Grace</strong>&lt;br&gt;PhD(Johns Hopkins)</td>
<td>Human Computer Interaction, Human Centered Computing, Pervasive Computing, Natural Language Processing</td>
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<tr>
<td><strong>Dr PATHAK Ajay Kumar</strong>&lt;br&gt;PhD(HKU); SMIEEE; FIAPR</td>
<td>Biometrics, Computer Vision-Based Industrial Inspection</td>
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<tr>
<td><strong>Dr PEI Yu Max</strong>&lt;br&gt;PhD(Nanjing); PhD(ETH Zurich)</td>
<td>Automated Program Repair, Automated Software Testing, Mining Software Repositories</td>
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<tr>
<td><strong>Dr SHAO Zili</strong>&lt;br&gt;PhD(Texas at Dallas)</td>
<td>Embedded Systems, Real-Time Systems</td>
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<tr>
<td><strong>Dr SHIU Chi Keung Simon</strong>&lt;br&gt;PhD(PolyU); MBCS; MACM; MHKCS; MIEEE</td>
<td>Artificial Intelligence, Coloured Petri Nets, Computer Games, Machine Learning, Pattern Recognition, Services Science and Management</td>
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<tr>
<td><strong>Dr WANG Dan</strong>&lt;br&gt;PhD(Simon Fraser)</td>
<td>Internet Architecture and Protocols, Computer Networking, Smart City, Big Data</td>
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<tr>
<td><strong>Dr WANG Qixin</strong>&lt;br&gt;PhD(UOC)</td>
<td>Real-time/Embedded Systems, Cyber-Physical Systems</td>
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<tr>
<td><strong>Dr WU Xiaoming</strong>&lt;br&gt;MPHIL(CUHK); PhD(Columbia)</td>
<td>Machine Learning, Pattern Recognition, Data Mining</td>
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<tr>
<td><strong>Dr XIAO Bin</strong>&lt;br&gt;PhD(UT Dallas)</td>
<td>Mobile Cloud Computing, Smartphone Technology, Data Management, Network Security, RFID Systems, Wireless Networks</td>
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<tr>
<td><strong>Dr YANG Lei</strong>&lt;br&gt;PhD(Johns Hopkins)</td>
<td>RFID System, Pervasive and Wireless Computing, Internet of Things, Smart Home</td>
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<tr>
<td><strong>Dr YU Man Lung Ken</strong>&lt;br&gt;PhD(HKU)</td>
<td>Data Engineering, Query Processing, Spatial Database Systems</td>
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<tr>
<td><strong>Prof. YOU Jia Jane</strong>&lt;br&gt;PhD(Trinity); MIEEE</td>
<td>Image Processing, Pattern Recognition, Computer-Aided Diagnosis and Monitoring</td>
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<tr>
<td><strong>Prof. ZHANG Dapeng David</strong>&lt;br&gt;PhD(Shanghai); PhD(Waterloo); FIEEE; FIAPR</td>
<td>Biometrics, Pattern Recognition, Image Processing, Information Security, Neural Networks</td>
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<tr>
<td><strong>Prof. ZHANG Lei</strong>&lt;br&gt;PhD(Northwestern Polytechnical)</td>
<td>Image and Video Processing, Computer Vision, Pattern Recognition, Biometrics</td>
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<tr>
<td><strong>Dr ZHAO Miao</strong>&lt;br&gt;PhD(SUNY)</td>
<td>Big Data Analytics, Artificial Intelligence, Recommender Systems, Social Networks, Multimedia Analytics and Networking, IoT, Wireless Communication and Networking</td>
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<tr>
<td><strong>Dr ZHENG Yuanqing</strong>&lt;br&gt;PhD(NTU); MIEEE; MACM</td>
<td>Human Centered Computing, Mobile and Network Computing, Wireless Networks, RFID Systems</td>
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</table>
“COMP’s MSc programmes are attractive to a lot of practitioners because of the wide spectrum of courses offered covering fundamental theories, core technologies, applied technologies, and industry best practices. Not only can students pick up the basics that they lack but also gain exposure to forthcoming technologies that they may face in their work places in the near future. The programme also provide a forum for practitioners to discuss and exchange ideas on IT applications and experiences – an invaluable knowledge pool that is not easy to come by!”

Dr Daniel Chan, Client Solutions Manager, Consulting Services, APJC, Cisco Systems

“I have pursued my master degree in the Department of Computing and the study time was one of the most unforgettable experiences in my life. It gave me the change to acquire in-depth understanding of IT-related subjects such as data mining and software engineering, and enlightened me with a global vision in IT development.”

Mr Jianguang Xia, Director, Public Customers Department, China Telecom

“The time of pursuing the master degree in the Department of Computing would be the best time of my whole student life. I am so fortunate to have this precious and unforgettable time period here. I have the chance to dive into the latest computer science theory and technologies and choose the research direction that I have the most interest in, with the help of professors and tutors. Besides, I also enjoy the cooperation with my course mates to launch some exciting projects with the knowledge acquired from the course, which helps me do better in the real working environment.”

Mr Steven Zhao, Block Chain Development, ANX International

“The dissertation strengthened my knowledge and problem solving skill. I developed a machine learning application prototype based on other scholars’ state-of-the-art researches and technologies. My mentor guided me to design and develop the system, it was a really inspiring learning experience. Currently, I setup my own IT company to develop solutions for E-Commerce by what I have learnt in this master programme.”

Mr Andy Lam, Founder, Swang Technology
The Scheme has different awards to suit students with different background and objectives. Our students' bachelor degrees are not only in Computer Science but also from many other disciplines such as Business, Social Science, and Engineering.

Supported by learning different technological advancements, our graduates have good development in various sectors including Information Technology, Finance and Banking, Telecommunication, Healthcare, Civil Services, Education, etc.

Our MSc graduates are employed by:
- Accenture Ltd
- AIA International Ltd
- Airport Authority Hong Kong
- Bank of China (Hong Kong) Ltd
- Bank of Communications Co Ltd
- China Telecom Global ltd
- HKSAR Government, Department of Health
- HKSAR Government, Electrical and Mechanical Services Department
- Hongkong International Theme Parks Ltd
- Hospital Authority
- Huawei Technologies Co Ltd
- IBM China/Hong Kong Ltd
- ICBC (Asia) Ltd
- Kodak (China) Ltd
- Link Asset Management Ltd
- NEC Hong Kong Ltd
- NTT Com Asia Ltd
- Octopus Cards Ltd
- PCCW-HKT DataCom Services Ltd
- Ping An of China Securities (Hong Kong) Co Ltd
- Securities & Futures Commission
- SmarTone Telecommunications Ltd
- Swiss Reinsurance
- Tectura Hong Kong Ltd
- The Bank of Tokyo-Mitsubishi UFJ Ltd
- Yonyou (Hong Kong) Co Ltd

and more...
MSc in E-Commerce
Hold a honours degree of various disciplines

MSc in Software Technology
Hold a honours degree of Computer Science or Software Engineering disciplines

MSc in Information Technology
Hold a honours degree of Engineering or Science disciplines

If you are not a native speaker of English, and your Bachelor's degree or equivalent qualification is awarded by institutions where the medium of instruction is not English, you are expected to fulfil the following minimum English language requirement for admission purpose:

A Test of English as a Foreign Language (TOEFL) score of 80 for the Internet-based test or 550 for the paper-based test;

OR

An overall Band Score of at least 6 in the International English Language Testing System (IELTS).

More information can be found at www.polyu.edu.hk/study.

Application procedures
To apply for the Postgraduate Scheme in Computing, applicants can submit their application via an online admission system at www.polyu.edu.hk/admission.

Concurrent application of different programmes in the Scheme is possible.

Tuition fee and financial assistance
Local students: HK$3,600 per credit
Non-local students: HK$4,400 per credit

Some subjects are included in the reimbursable course list of the Continuing Education Fund (CEF). Eligible applicants will be reimbursed 80% of their fees, subject to a maximum sum of HK$10,000 (whichever is the less), on successful completion of a reimbursable course.

Department of Computing

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