Programmes

BEng (Hons) in Computer Engineering
電子計算機工程學榮譽工學士

Programme code: BECE
Full-time: 3 years
JUPAS code: 1573

Programme Leader: Dr Andrew C S Leung
Associate Programme Leader: Dr H C So

Programme Aim

- Career Prospect

Programme Features

- Curriculum Structure
- Professional Recognition
- Bonus Features

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Articulated Programmes

Programme Details

- Programme Requirements
- Core Courses
- Elective Courses
- Recommended Study Plan
- Course Offering Schedule in 2007/08

Did you know?

Enquiries

Programme Aim

The programme aims to provide a structure within which students are exposed to the latest developments in computer technology, in addition to the theoretical aspects of both hardware and software. The primary goal is to produce engineers who possess the skills necessary for the design and implementation of digital and computer related systems. Graduates are also equipped with sufficient background to pursue postgraduate.

此課程注重電腦硬件及軟件的理論和應用上的均衡培訓，並透過對電腦、互聯網及多媒體系統的廣泛訓練，培育能迎合未來科技發展的專業電腦工程師。

Career Prospect

The rapid development of computers in business, banking, telecommunication, logistics and multimedia entertainment providers demands a great deal of computer engineers to support the
design and services of computer systems and application software. In addition, the popularity of using hand held personal devices and game machines in recent years also provides excellent opportunities for our graduates

○ **Our Graduates**

Since its establishment in 1984, the Department has graduated 5,044 students at different levels. They are able to excel in different sectors including government, education, industry and manufacturing, as well as commerce and business. Click [here](http://www.ee.cityu.edu.hk/main/programmes/bengcomp.html) for Comments from Graduates.

○ **Job Nature of Graduates**

Computer Engineer/Design Engineer, Technical Support Engineer, Telecommunication Engineer, Software Engineer, Programmer, System Analyst / IT Support Analyst, Scientific Consultant / Technologist. Academic Researcher, Marketing and Sales Executive, etc.

○ **Potential Employers**

Internet and mobile related companies; Computer manufacturers; Multimedia content production houses for education, training and entertainment.

○ **Graduate Employment Survey 2005**

99 % of graduates were engaged in employment and full-time postgraduate studies within a few months after graduation. Click [here](http://www.ee.cityu.edu.hk/main/programmes/bengcomp.html) for details.

**Programme Features**

The curriculum is structured as shown in the figure below. The first two years focus on fundamental and core aspect of 1) electronic circuits; 2) mathematics; 3) computer programming; 3) microprocessor and digital system design; 4) signals and systems; and 5) computer network.

In the third year, students are allowed to specialize in different areas of interest for career preparation. Students have greatest flexibility to design their own studies by selecting elective courses on mobile computing, digital image and audio technology, computer graphics and games, security technology, high-speed computer network and internet technology, etc.

**Curriculum Structure**
Professional Recognition

The programme has been accredited by the Hong Kong Institution of Engineers, one of the educational requirements for obtaining Charter status. Based on the ‘Washington Accord’, graduates will receive reciprocal recognition from the equivalent bodies in Australia, Canada, Israel, New Zealand, South Africa, the United Kingdom, and the United States of America.

Bonus Features

Industrial Attachment Scheme

Want to get a head start for your career? Through tailor-made training programmes carefully worked out between professors and partner companies, students can gain working experience and learn the functioning of corporations before graduating. This greatly enhances graduates’ career prospect!

Co-operative Education Scheme (CES)

The CES is a 9 to 12-month placement programme for final year science and engineering students. During this placement period, students are released by the partner companies to attend classes. Some students were even offered jobs by the training companies immediately after the placement!
Student Exchange

The Department strongly supports student exchange as a way for students to broaden their horizons and enhance life experience. In 2005/06, some 12 students will embark on exchange programmes in prestigious universities in USA, Canada, UK, France, Singapore and China. Starting from 2003, students have been able to secure funding from the Government to participate in the IT Exchange Programmes in USA, UK and Australia.

Scholarships

Building on our strong link with industry, many scholarships are offered to students every year.

Student Achievements

CityU’s Electronic Engineering students win almost all top prizes in the annual open project and paper competitions organized by the Institution of Electrical Engineers (IEE) and other professional bodies. Join us and you can become a winner too! Click here for more information.

Teaching Quality

Six of our professors have been awarded CityU’s Teaching Excellence Awards since its inception in 1994. CityU-EE also received highly favourable comments from the University Grants Committee in the 2003 Teaching and Learning Quality Process Review.

Entrance Requirements and Admissions

Hong Kong Advanced Level Examination Qualifications

Apart from meeting the University’s language proficiency requirements (English and Chinese/other language), students must satisfy the following requirements for the purpose of admission:

E or above in A-level Applied Mathematics or Pure Mathematics or Physics or Engineering Science PLUS one of the following requirements:

- E or above in one other A-level subject; or

- E or above in two AS-level subjects (excluding AS-level Use of English, and Chinese Language and Culture)

Direct Applicants

A higher diploma or associate degree in an engineering or a science discipline; or an equivalent qualification.

Click here for articulated higher diploma programmes.

Credit Transfer: Credit transfer may be granted upon admission for articulated higher diploma or associate programmes. Successful applicants may also apply for credit transfer for particular courses once they have registered. Any credits awarded will contribute to the total required for the award of an honours degree.

Admissions

Application materials are available:

- Click here for online application (Application fee HK$100)
- Click here for the hard copy application form and application guide (Application fee HK$200)
- At the Distribution Counter located at the University Concourse, Floor 4, Academic Building, CityU (Mon to Fri: 9:00am – 6:00pm; Sat: 9:00am – 1:00pm) during the application period.

Articulated Higher Diploma (HD) / Associate Degree (AD) Programmes

The following articulations are applicable to the 2007 HD / AD graduates.

- **City University of Hong Kong**
  1. Associate of Science in Computer Studies
  2. Associate of Science in Information Technology
  3. Associate of Science in Web Technology

- **Hong Kong Institute of Vocational Studies at Kwun Tong**
  1. Higher Diploma in Entertainment Electronics
  2. Higher Diploma in Computer and Information Engineering [2006 Graduates]

- **Hong Kong Institute of Vocational Studies at Shatin**
  1. Higher Diploma in Computer and Information Engineering [2006 Graduates]
  3. Higher Diploma in Internet & Multimedia Engineering

- **Hong Kong Institute of Vocational Studies at Tsing Yi**
  1. Higher Diploma in Telecommunications and Networking(3-Year)
  2. Higher Diploma in Telecommunications and Networking(2-Year)
- **Hong Kong Institute of Vocational Studies at Tuen Mun**
  
  1. Higher Diploma in Telecommunications and Networking (3-Year)

- **The Hong Kong Polytechnic University**
  
  1. Associate Degree in Engineering (Subject to approval)
  2. Associate Degree in Information Technology (Subject to approval)

### Programme Details

#### Programme Requirements

<table>
<thead>
<tr>
<th>Normal Duration: 3 years</th>
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<tbody>
<tr>
<td>Credit Units (CUs)</td>
</tr>
<tr>
<td>Core Courses</td>
</tr>
<tr>
<td>Group A &amp; B Elective Courses</td>
</tr>
<tr>
<td>University Language Requirements</td>
</tr>
<tr>
<td>Chinese Civilization</td>
</tr>
<tr>
<td>Out-of-Discipline courses</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

* At least two courses from the Group A list and at least two courses from the Group B list must be taken. Only **ONE** Level 3 course is allowed to choose in the Elective lists.

** Students with Grade D or above in A-level Use of English to take both EN2271 English Communication Skills for Electronic Engineering I and EN2272 Report Writing for Engineers.

*** Any Level 2 or above courses except for courses in the disciplines of electronic engineering, computer science, computer engineering, and information/multi-media/web-based technology.

### Core Courses: 60 Credit Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE2000</td>
<td>Logic Circuit Design</td>
<td>3</td>
</tr>
<tr>
<td>EE2202</td>
<td>Microprocessor and Assembly Language Programming</td>
<td>3</td>
</tr>
<tr>
<td>EE2301</td>
<td>Basic Electronic Circuit</td>
<td>3</td>
</tr>
<tr>
<td>EE2331</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>EE2372</td>
<td>Electronics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>EE3207</td>
<td>Digital System Design</td>
<td>3</td>
</tr>
<tr>
<td>CS2362</td>
<td>Computer Programming for Engineers and Scientists</td>
<td>3</td>
</tr>
</tbody>
</table>
Elective Courses: 18 Credit Units

Students are required to earn at least 18 CUs of technical elective courses. At least two courses from the Group A list and at least two courses from the Group B list must be taken. Only ONE Level 3 course is allowed to choose in the elective course lists.

Technical Elective Group A

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE4205</td>
<td>Multimedia Technologies and Applications</td>
<td>3</td>
</tr>
<tr>
<td>EE4206</td>
<td>Digital Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>EE4207</td>
<td>Digital Speech &amp; Audio Processing</td>
<td>3</td>
</tr>
<tr>
<td>EE4208</td>
<td>Engineering Techniques for Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>EE4209</td>
<td>Digital Audio Technology</td>
<td>3</td>
</tr>
<tr>
<td>EE4210</td>
<td>Neural Networks and Fuzzy Systems</td>
<td>3</td>
</tr>
<tr>
<td>EE4211</td>
<td>Computer Vision</td>
<td>3</td>
</tr>
<tr>
<td>EE4212</td>
<td>Information and Coding</td>
<td>3</td>
</tr>
<tr>
<td>EE4213</td>
<td>Human-Computer Interaction</td>
<td>3</td>
</tr>
<tr>
<td>CS4367</td>
<td>Computer Games Design</td>
<td>3</td>
</tr>
<tr>
<td>MA3160</td>
<td>Probability &amp; Stochastic Processes</td>
<td>3</td>
</tr>
</tbody>
</table>
Technical Elective Group B

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE3320</td>
<td>Internet Technologies and Protocols</td>
<td>3</td>
</tr>
<tr>
<td>CS3462</td>
<td>Introduction to Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>EE4201</td>
<td>Parallel computing</td>
<td>3</td>
</tr>
<tr>
<td>EE4202</td>
<td>Advanced Microprocessor Architecture</td>
<td>3</td>
</tr>
<tr>
<td>EE4204</td>
<td>Digital System Design with VHDL</td>
<td>3</td>
</tr>
<tr>
<td>EE4215</td>
<td>Security Technology</td>
<td>3</td>
</tr>
<tr>
<td>EE4216</td>
<td>Internet Client-Server Computing</td>
<td>3</td>
</tr>
<tr>
<td>EE4301</td>
<td>Network and System Administration</td>
<td>3</td>
</tr>
<tr>
<td>EE4316 *</td>
<td>Mobile Data Networks</td>
<td>3</td>
</tr>
<tr>
<td>EE4332</td>
<td>Object-oriented Intelligent Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS4284 *</td>
<td>Mobile Computing</td>
<td>3</td>
</tr>
<tr>
<td>CS4285</td>
<td>High Speed Multimedia Networks</td>
<td>3</td>
</tr>
</tbody>
</table>

* Exclusive course

Recommended Study Plan
Click here for the recommended study plan.

Did you know?
 ► CityU-EE Boasts 6 FIEEE
 ► Winners of Teaching Excellence Awards
 ► CityU Ranks 154 Worldwide

CityU-EE Boasts 6 FIEEE
CityU-EE now boasts 6 Fellows of The Institute of Electrical and Electronics Engineers (FIEEE), a record for a single academic department in Hong Kong. Moreover, many EE students and graduates have received numerous local, regional and international awards for their outstanding performance. CityU came first again in the total grant awarded in the “Electrical and Electronic Engineering” discipline in the 2006-07 Competitive Earmarked Research Grant exercise supported by the Research Grants Council. Click here for Student Achievements for more information. Join us and you can become a winner too!

Winners of Teaching Excellence Awards
Five of our professors have won CityU's Teaching Excellence Award since its inception in 1994. CityU-EE also received highly favourable comments from the University Grants Committee in the 2003 Teaching and Learning Quality Process Review.

CityU Ranks 154 Worldwide
CityU has shot up the rankings of the world's most prestigious educational institutions. According to The Times Higher Education Supplement 2006, CityU ranks 154 among the world's top 200
universities. Being one of the only four Hong Kong universities included in the top 200, CityU is also one of the top 10 universities in the Greater China Area. CityU has broken into the list of the top 100 technology universities for the first time in 2005 and is ranked 90.

Enquiries
Tel: (852) 2788 9055 (Mrs Shirley Wan)
Fax: (852) 2788 7791
Email: bengce@ee.cityu.edu.hk
Web-site: http://www.ee.cityu.edu.hk