

Programmes

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BEng (Hons) in Information Engineering (Business Intelligence Minor) 資訊工程學榮譽工學士 (副修商業智能)

Integrating technology with business knowledge, a key factor for successful professional engineers!



Application period for direct applicants: 8 Dec 06 - 28 Feb 07

| | | |
|--------------------------------|--|---|
| Programme code: BEIEBIM | Full-time: 3 years | <ul style="list-style-type: none"> • Application • Printed version • Leaflet |
| Programme Leader: | Dr. Lai-Man Po | |
| Associate Programme Leader: | Dr. Albert Chi-Wan Sung | |
| Programme email address: | bengie@ee.cityu.edu.hk | |
| JUPAS Code: | 1767 | |

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Did you know?

Enquiries

Programme Aim

This is a unique information engineering programme in Hong Kong that integrates technical skills with intelligence elements. We aim to provide you with a solid education in computer networking, system administration, security, multimedia computing and software development; as well as basic business knowledge.

We will prepare you for employment in a wide range of economic sectors from information technology, business finance, to trading and logistics in Hong Kong and the Asia-Pacific region. Our education will transform you into a trained professional engineer who can (i) provide solutions, products and services in different areas of IT application; (ii) apply statistical methods and quantitative tools to business planning and decision making. The programme equips you to pursue postgraduate studies.

本課程旨在培育具備商業智能知識的專業資訊工程師。畢業生不但能結合理論、軟件及網絡技術，在資訊科技各應用解決方法及服務；亦能靈活運用統計與數量分析方法作商業策劃及決策。內容主要教授電腦及資訊科技知識，重點有：網絡、資料庫及系統管理、軟件開發與多媒體技術及應用等。副修科包括管理科學、企業數據倉庫及網絡應用、企業數據分析、SAS 程式及線性模型。

Career Prospect

The rapid changes in technologies have led to a growing demand for young executives who possess both expertise and business acumen. According to the HKSARG's Report on Manpower Projection, IT manpower requirement is projected to rise at an average annual rate of 6.1%, the highest among all economic sectors. The increase is expected to come mainly from the transport, storage and communication sector; the banking and insurance, real estate and business services sector; and the community, social and personal services sector. In the past two years, employers from these sectors have been competing for IT personnel* by offering increasingly attractive pay for graduates.

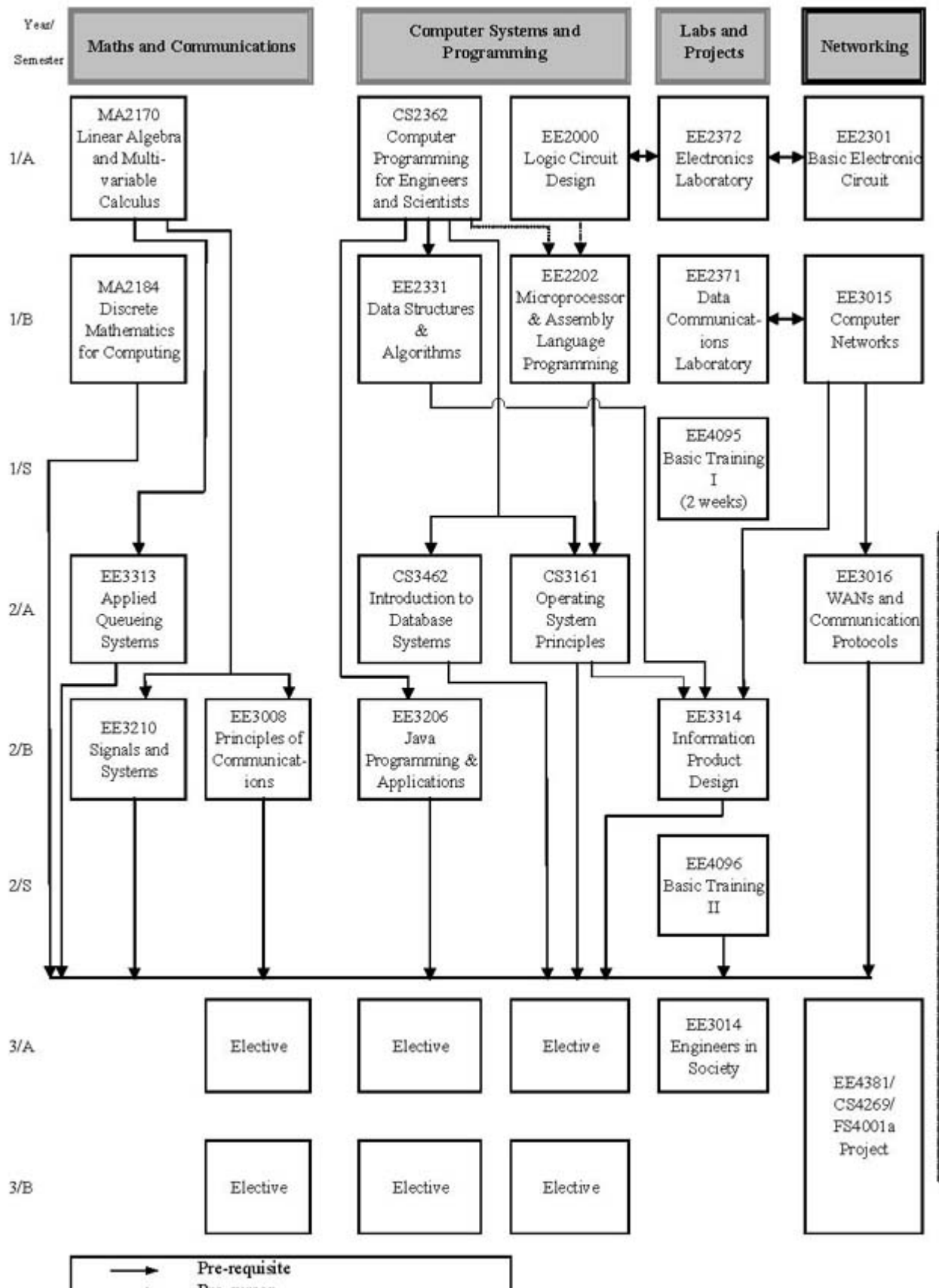
**According to the Report, IT manpower/personnel refers to those engaged in jobs related to IT management, application systems development, e-business, Internet services, telecommunications and networking, systems programming, hardware support, operation support services, IT research and product development, education and training.*

Programme Features

The curriculum of the major programme is almost identical with the BEng (Hons) Information Engineering degree. The major programme curriculum is well-structured as shown in the figure below. It consists of 87 credit units and focuses on (1) Data Networks, (2) Database and System Administration, (3) Software Development, and (4) Multimedia Computing. The minor programme consists of 15 credit units and focuses on the application of statistical methods and quantitative planning and decision making.

Curriculum Structure

**Programme Structure of BEng (Hons) in Information Engineering
(Business Intelligence Minor)**



Professional Recognition

Close to 97% of the major programme is identical to the parent programme BEng (Hons) Information Engineering. Accreditation is now being sought from the [Hong Kong Institution of Engineers](#).

Bonus Features

Industrial Attachment Scheme

Through tailor-made training programmes carefully worked out between professors and partner companies, students can gain working experience and learn the operation of corporations before graduating. This is a great bonus to 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 the placement period, students are released by the partner companies to attend classes. Some students are 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 gain life experience. In 2005/06, some 12 students will embark on exchange programmes in prestigious countries including USA, Canada, UK, France, Singapore and China. We have also been able to secure funding from the government to organize [IT Exchange Programmes](#) for students in USA, UK and Australia.

.....[More](#)

Scholarships

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

.....[More](#)

Student Achievements

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

.....[More](#)

Entrance Requirements and Admissions

Hong Kong Advanced Level Examination Qualifications

Apart from meeting the University's language proficiency requirements (English and Chinese/other languages), students must satisfy [EITHER ONE of the following](#) requirements for the purpose of admission:

1. E or above in A-level **Applied Mathematics** or **Pure Mathematics** or **Physics** or **Engineering Science** ; **PLUS**
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)
2. E or above in AS-level **Applied Mathematics** or **Mathematics and Statistics** ; **PLUS**
E or above in one A-level subject and one other AS-level subject (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 qualificatic

Click [here](#) for articulated associate degree and higher diploma programmes.

Credit Transfer: Credit transfer may be granted upon admission for [articulated associate degree and high 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 (l Fri: 9:00am – 6:00pm; Sat: 9:00am – 1:00pm)

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](#)

Chu Hai College

1. [Associate of Science in Computer Science](#)

Hong Kong Institute of Vocational Studies at Chai Wan

1. [Higher Diploma in Information Technology for Industry](#)
2. [Higher Diploma in Network Applications](#)
3. [Higher Diploma in Systems Development and Administration](#)

Hong Kong Institute of Vocational Studies at Kwai Chung

1. [Higher Diploma in Commercial Computing Applications](#)
2. [Higher Diploma in Enterprise Computing](#)
3. [Higher Diploma in Network and Mobile Computing](#)

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 \[2006 Graduates\]](#)
2. [Higher Diploma in Electronic and Communications Engineering \[2006 Graduates\]](#)
3. [Higher Diploma in Electronic Engineering with Business Management](#)
4. [Higher Diploma in Web-based Technology for Business](#)
5. [Higher Diploma in Internet & Multimedia Engineering](#)

Hong Kong Institute of Vocational Studies at Tsing Yi

1. [Higher Diploma in Computer System Administration](#)
2. [Higher Diploma in Software Engineering](#)
3. [Higher Diploma in Telecommunications and Networking \(3-Year\) \[2006 Graduates\]](#)
4. [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

| Normal duration: 3 years | |
|-------------------------------------|--------------|
| | Credit Units |
| Major Programme : | |
| Core courses | 57* |
| Technical Elective courses | 18** |
| University Language Requirements | 6 |
| Chinese Civilization | 6 |
| Business Intelligence Minor Courses | 15*** |
| <i>Total</i> | 102 |

* Including EE4095 & EE4096 Basic Training I & II for Information Engineering, which carry no credit unit.

** Students are required to take a minimum of SIX electives of which no more than ONE level-3 electives should be taken.

*** 9 CUs of the out-of-discipline studies normally required for the BEngIE Programme, is not required in the BEngIE(BI-Minor), as the minor courses will automatically fulfill this.

Courses of Major Programme

Core Courses: 57 credit Units

| Course Code | Course Title | Credit Units |
|-------------|---|--------------|
| EE2301 | Basic Electronic Circuit | 3 |
| EE2372 | Electronics Laboratory | 1 |
| EE2000 | Logic Circuit Design | 3 |
| EE2371 | Data Communications Lab | 1 |
| CS2362 | Computer Programming for Engineers and Scientists | 3 |
| EE2331 | Data Structures and Algorithms | 3 |
| EE2202 | Microprocessor & Assembly Language Programming | 3 |
| MA2170 | Linear Algebra and Multi-variable Calculus | 3 |
| MA2184 | Discrete Mathematics for Computing | 3 |
| | | |

| | | |
|---------------------------------|---|---|
| EE3008 | Principles of Communications | 3 |
| EE3014 | Engineers in Society | 2 |
| EE3015 | Computer Networks | 3 |
| EE3016 | WANs and Communication Protocols | 3 |
| EE3210 | Signals and Systems | 3 |
| EE3313 | Applied Queueing Systems | 3 |
| EE3314 | Information Product Design | 2 |
| CS3161 | Operating System Principles | 3 |
| EE3206 | Java Programming and Applications | 3 |
| CS3462 | Introduction to Database Systems | 3 |
| EE4381 / CS4269 / FS4001a | Project or Co-operative Education Scheme: Final Year Project Component | 6 |
| EE4095 EE4096 | Basic Training I for Information Engineering Basic Training II for Information Engineering | 0 |

Elective Courses : 18 Credit Units

Elective courses are divided into five streams and one “Other IE electives” group.

Students are required to take a minimum of SIX technical electives of which no more than ONE level-3 elec course should be taken.

Networks Engineering Stream

| Course Code | Course Title | Credit Units |
|-------------|--|--------------|
| EE3320 | Internet Technologies & Protocols | 3 |
| EE4011 | Performance Evaluation of Communication Networks | 3 |
| EE4014 | Business Data Communication Networks | 3 |
| EE4301 | Network and System Administration | 3 |
| EE4302 | Firewall Network Security | 3 |
| EE4316 | Mobile Data Networks | 3 |

Computer Systems Stream

| Course Code | Course Title | Credit Units |
|-------------|--|--------------|
| EE3201 | Computer Architecture | 3 |
| EE3203 | Microprocessor System Design | 3 |
| EE4201 | Parallel Computing | 3 |
| CS4273 | Distributed System Technologies & Programming I | 3 |
| CS4274 | Distributed System Technologies & Programming II | 3 |
| CS4482 | Advanced Database Systems | 3 |

Communications Stream

| Course Code | Course Title | Credit Units |
|-------------|---|--------------|
| EE3101 | Communication Engineering | 3 |
| EE4015 | Digital Signal Processing in Communications | 3 |
| EE4212 | Information and Coding | 3 |

Multimedia Processing Stream

| Course Code | Course Title | Credit Units |
|-------------|--|--------------|
| EE4205 | Multimedia Technologies and Applications | 3 |
| EE4206 | Digital Image Processing | 3 |
| EE4208 | Engineering Techniques for Computer Graphics | 3 |
| EE4209 | Digital Audio Technology | 3 |
| CS4367 | Computer Games Design | 3 |

Software Stream

| Course Code | Course Title | Credit Units |
|-------------|-------------------------------------|--------------|
| EE4213 | Human-Computer Interaction | 3 |
| EE4216 | Internet Client-Server Computing | 3 |
| EE4332 | Object-Oriented Intelligent Systems | 3 |
| CS3335 | Design and Analysis of Algorithm | 3 |
| CS3367 | Essentials of Software Engineering | 3 |

Other IE Electives

| Course Code | Course Title | Credit Units |
|-------------|---|--------------|
| EE4047 | Genetic Algorithms and Their Applications | 3 |
| EE4204 | Digital System Design with VHDL | 3 |
| EE4210 | Neural Networks and Fuzzy Systems | 3 |
| EE4211 | Computer Vision | 3 |
| EE4215 | Security Technology | 3 |
| MA3151 | Advanced Engineering Mathematics | 3 |
| MA3160 | Probability and Stochastic Processes | 3 |

Courses of Minor Programme

| Course Code | Course Title | Credit Units |
|-------------|--|--------------|
| FB2200 | Management Sciences I | 3 |
| MS3215 | Linear Models | 3 |
| MS3217 | SAS Programming | 3 |
| MS4215 | Enterprise Data Warehousing and Web Applications | 3 |
| MS4224 | Enterprise Data Mining | 3 |

Recommended Study Plan

Click [here](#) for the recommended study plan.

Did you know?

1. In 2005, the Department was [ranked No.2 worldwide](#), behind Princeton University (US), in terms of the number of Scientific Citation Index papers published.
2. CityU-EE now boasts 7 Fellows of The Institute of Electrical and Electronics Engineers (FIEEE), a record a single academic department in Hong Kong.
3. In 2006, the Department was awarded the highest amount of research grants from UGC in the electrical & electronic engineering areas among the seven universities in Hong Kong.
4. Five of our professors have won CityU's Teaching Excellence Award. CityU-EE also received highly favor comments from the University Grants Committee in the 2003 Teaching and Learning Quality Process Review.
5. CityU Electronic Engineering students won almost all top prizes in open project and paper competitions organized by the [Institution of Engineering and Technology \(IET\)](#) and the Institute of Electrical and Electronics Engineers (IEEE) over the past few years. Click the [EE student achievements](#) for more information. Join us and you can become a winner too!

Enquiries

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