# REGULATIONS FOR THE DEGREE OF BACHELOR OF ENGINEERING (COMPUTER SCIENCE) (BEng[CS]) AWARDED IN CONJUNCTION WITH THE DEGREE OF BACHELOR OF BUSINESS ADMINISTRATION (INFORMATION SYSTEMS) (BBA[IS])

***These regulations apply to students admitted to the BBA(IS) degree in the academic year 2005-2006 and thereafter.***

*(See also General Regulations and Regulations for First Degree Curricula)*

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**ISCS 1 Admission Requirements**

To be eligible for admission to the programme leading to the Degree of Bachelor of Engineering in Computer Science under these regulations, a candidate shall

(a) comply with the General Regulations; and
(b) hold the degree of BBA(IS) from the University of Hong Kong.

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**ISCS 2 Length of Study**

The curriculum shall normally extend over one academic year of full-time study.

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**ISCS 3 Curriculum Requirements**

To be eligible for the award of the Degree of Bachelor of Engineering in Computer Science, a candidate shall

(a) comply with the General Regulations;
(b) complete the curriculum and satisfy the examiners in accordance with these regulations; and
(c) satisfy the examiners in no less than 66 credit-units of courses as prescribed in the syllabuses.

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**ISCS 4** Candidates shall normally select not less than 33 and not more than 39 credit-units of courses in each semester, unless otherwise permitted or required by the Board of the Faculty. Candidates who have overloaded in preceding semesters will be allowed to reduce the load by up to the equivalent number of credit-units they have passed in excess of the normal load in a subsequent semester without having to seek prior approval.

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**ISCS 5** Candidates with unsatisfactory academic progress may be required by the Board of the Faculty to take a reduced study load.

**ISCS 6 Selection of Courses**

Candidates shall select their courses in accordance with these regulations and the guidelines specified in the syllabuses before the beginning of each academic year.

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**ISCS 7 Assessment and Grades**

Candidates shall be assessed for each of the courses which they have registered for, and assessment may be conducted in any one or any combination of the following manners: written examinations or tests, continuous assessment, laboratory work, field work, project reports, or in any other manner as specified in the syllabuses. Grades shall be awarded in accordance with UG 5 of the Regulations for the First Degree Curricula.

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**ISCS 8** Written examinations or tests shall normally be held at the end of each semester unless otherwise specified in the syllabuses. A candidate who fails in any course may be required to repeat the same course in a subsequent semester, or to take a special examination at a time specified by the Board of the Faculty. The grades for all the attempts made will be recorded in the transcript. Candidates shall not be permitted to repeat a course for which they have received a grade D or above for upgrading purposes.

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**ISCS 9** A candidate will normally be recommended for discontinuation if

(a) his/her yearly average of Semester GPA is unsatisfactory for two consecutive academic years;
(b) he/she has failed in a core course twice; or
(c) he/she has accumulated less than half of the credit-units expected of a normal load for two consecutive years.

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**ISCS 10 Degree Classification**

The degree of Bachelor of Engineering in Computer Science shall be awarded under these regulations in five divisions:

First Class Honours
Second Class Honours Division One
Second Class Honours Division Two
Third Class Honours
Pass

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**ISCS 11** The classification of honours shall be determined by the Board of the Faculty at its full discretion based on 180 credit-units selected in the manner specified in the syllabus for the degree of BEng(CS) awarded in conjunction with the degree of BBA(IS).

**SYLLABUSES FOR THE DEGREE OF BACHELOR OF ENGINEERING (COMPUTER SCIENCE) AWARDED IN CONJUNCTION WITH THE DEGREE OF BACHELOR OF BUSINESS ADMINISTRATION (INFORMATION SYSTEMS)**

**YEAR FOUR**

| *Course code* | *Course title* | *Credit-units* |
|---|---|---|
| BUSI0009 | Business policy | 6 |
| BUSIxxxx | IS Elective [1] | 12 |
| CSIS0259 | Principles of programming languages | 6 |
| CSIS0405 | Professionalism and ethics | 3 |
| CSIS0801 | Final year project | 12 |
| CSISxxxx | CS Elective [2] | 12 |
| ELEC2803 | Engineering and society | 3 |
| XXXXxxxx | FBE Elective [3] | 6 |
| XXXXxxxx | Broadening course | 3 |
| CSIS1410 | Industrial training | 3 |

[1] Elective courses in Information Systems offered by the School of Business
[2] Elective courses offered by the Department of Computer Science.
[3] Elective courses offered by the Faculty of Business and Economics

To complete the curriculum, a candidate must pass all courses. In addition, a candidate must satisfy any other requirements as stipulated in the University or Faculty of Engineering regulations.

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For the purposes of degree classification, contributing courses are grouped as follows:

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|---|---|---|
| **Core**<br><br>(84 credit-units) | • Computer programming<br>• Mathematical foundations of computer science<br>• Introduction to data structures and algorithms<br>• Machine organization and assembly language programming<br>• Engineering mathematics<br>• Programming methodology and object-oriented programming<br>• Information systems development and project management I<br>• Information systems development and project management II | • Principles of operating systems<br>• Introduction to database management systems *or* Database development and management<br>• Introduction to software engineering<br>• Computer and communications networks *or* Data communications and networking management<br>• Design and analysis of algorithms<br>• Principles of programming languages |
| **Complementary Studies**<br><br>(24 credit-units) | • Business communication<br>• Professional and technical communication for computer science<br>• Practical Chinese language course for business, economics and finance students | • Professionalism and ethics<br>• Engineering and society<br>• Business Policy<br>• Broadening course (Year 4) (3 credit-units) |

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|---|---|---|
| **Projects** (18 credit-units) | • System integration project | • Final year project |
| **Elective Courses** (54 credit-units) | • CS electives (24 credit-units)<br>• IS electives (24 credit-units) | • FBE elective (Year 4) (6 credit-units) |
| **Training** (6 credit-units) | • Workshop Training | • Industrial Training |

CSIS1xxx courses in the syllabuses are level 1 courses assigned a weight of 1, and CSIS0xxx courses are level 2 courses assigned a weight of 2, with the exception of Workshop Training, Industrial Training and Research Internship which carry a weight of 0.

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The degree classification shall be based on the best 180 credit-units from:

(a) All core courses in computer science and information systems (84 credit-units);

(b) All compulsory complementary studies courses (24 credit-units);

(c) Systems integration project (6 credit-units) and Final year project (12 credit-units); and

(d) The best 54 credit-units of remaining courses.

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**COMPULSORY COURSES**

**BUSI0009. Business policy (6 credit-units)**

The course will review the analysis and implementation of strategic corporate decisions which encompass all functional areas of business. Students will be split into small groups and will be required to write a mini-project of not more than 5,000 words outlining the desired corporate strategy for a given corporate problem.

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**CSIS0259. Principles of programming languages (6 credit-units)**

Syntax and semantics specification; data types; data control and memory management; expressions, precedence and associativity of operators; control structures; comparative study of existing programming languages; advanced topics such as polymorphism, programming paradigms, exception handling and concurrency.

Prerequisites: CSIS1119; and CSIS1120 or ELEC1401 or ELEC1613

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**CSIS0405. Professionalism and ethics (3 credit-units)**

Topics include definitions of software engineering subject areas and professional activities; professional societies and ethics; professional competency and life-long training; uses, misuses and risks of software; information security and privacy; intellectual property and software law; software contract; social responsibilities; and software engineering standards.

**CSIS0801. Final year project (12 credit-units)**

This is a team project, to be taken by students in the final year, which requires substantial contribution from every individual team member. The project will go through the common process of requirements, analysis, design, implementation, testing, etc. Project standards will be enforced.

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**ELEC2803. Engineering and society (3 credit-units)**

Interaction between engineers and society; impact of technologies on society; environmental and safety issues; professional conduct and responsibility; contract law; law of tort; professional negligence and intellectual property law.

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**CSIS1410. Industrial training (3 credit-units)**

Industrial Training requires students to spend a minimum of six weeks employed, full-time, as IT interns or trainees. During this period, they are engaged in work of direct relevance to their programme of study. CSIS1410 provides students with practical, real-world experience and represents a valuable complement to their academic training.

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**ELECTIVE COURSES IN INFORMATION SYSTEMS AREA OFFERED BY THE SCHOOL OF BUSINESS**

**BUSI0046. Advanced information systems development (6 credit-units)**

This course studies how emerging information technologies affect both the information systems development process and the information systems. Topics include computer-aided software engineering tools, distributed systems, electronic data interchange, and web-based technologies. Students will carry out a field study of a new technology or new techniques.

Prerequisites: BUSI0048 Business applications development, and BUSI0052 Database development and management or equivalent

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**BUSI0053. Decision support and expert systems (6 credit-units)**

This course studies a range of modern decision technologies that can aid in decision making including decision support systems, group support systems, electronic meeting systems, artificial intelligence, expert systems, genetic algorithms and neural networks. Both technical and managerial issues related to the development and implementation of information systems using the above technologies will be discussed.

Prerequisites: BUSI0048 Business applications development, and BUSI0052 Database development and management or equivalent

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**BUSI0055. Electronic commerce and virtual businesses (6 credit-units)**

This course examines the progress of electronic commerce and focuses on the business opportunities and current technologies relevant to this emerging area of information technology. Students will learn how to set up a business on the Internet.

Prerequisites: BUSI1003 Introduction to management information systems, or CSIS1127 Introduction to information systems

**BUSI0062. Information systems management and strategy (6 credit-units)**

This course examines issues related to managing information systems in an organization including role of the chief information officer, information planning and business strategy, and various frameworks for understanding the function of information systems in an organization.

Prerequisite: BUSI1003 Introduction to management information systems or equivalent

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**BUSI0063. Internet applications development (6 credit-units)**

This course studies how to develop an Internet-based business application. Resources, tools and services available on the Internet will be introduced. The JAVA programming language will be covered.

Prerequisites: BUSI0048 Business applications development, and BUSI0052 Database development and management or equivalent

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**BUSI0065. Information systems security management (6 credit-units)**

This course studies two key issues in developing business applications on the commercial Internet: management of the web site and security of the information stored on and obtained from the site. Issues including updating, encryption and authentication will be discussed.

Prerequisite: BUSI1003 Introduction to management information systems or equivalent

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**BUSI0066. Marketing on the commercial internet (6 credit-units)**

This course studies the progress of the Internet, World Wide Web and related technologies for the marketing, selling and distribution of goods and services. Both technology and business marketing issues will be discussed.

Prerequisites: BUSI1004 Marketing, and BUSI1003 Introduction to management information systems or equivalent

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**BUSI0068. Multimedia applications development (6 credit-units)**

This course introduces the various multimedia applications and the technologies based on which these applications are developed. Technologies that enable the achieving and retrieval of text, graphics, sound and video via optional storage devices will be examined.

Prerequisites: BUSI0048 Business applications development, and BUSI0052 Database development and management or equivalent

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**BUSI0074. Telecommunications policy and business (6 credit-units)**

This course provides an overview of recent developments of the telecommunications industries in Hong Kong and around the Asia-Pacific Region. Telecommunications infrastructure policies introduced by respective governments in the Region and the impacts of these policies on business operations will be examined.

Prerequisite: BUSI1003 Introduction to management information systems or equivalent

**BUSI0076. Current topics in information systems (6 credit-units)**

Study of selected areas of information systems and information technology. Topics vary with recent developments and current interest.

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**BUSI0088. Artificial Intelligence for Business Applications (6 credits)**

This course focuses on the fundamentals of Artificial Intelligence (AI) and their applications in business. Students will learn how to use various AI techniques to solve real-world business problems and gain hands-on experience in developing and using different AI tools. Topics to be covered include: basics of AI, uses of AI in business applications, AI algorithms, e.g., neural networks, decision trees, genetic algorithms, intelligent agents, human computer interaction, knowledge management technologies, document management, AI for customer relationship management, expert systems, data mining, text mining, web mining, other current topics

Prerequisites: Proficiency in Java Programming and BUSI0048 Business applications development or equivalent; and BUSI0052 Database development and management or equivalent

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**BUSI0091. Business intelligent systems (6 credit-units)**

This course is designed to provide an overview of business intelligent systems (BIS) and their use in the business environment. Topics include business intelligent systems/technology concepts, introduction to various BIS (e.g., Knowledge Management Systems), and business cases for BIS development and adoption.

Prerequisites: BUSI1003 Introduction to management information systems

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**BUSI0092. Advanced database management & data mining (6 credit-units)**

The course will consist of two parts. In the first part of the course, advanced database concepts such as views, triggers, stored procedures, SQL*Plus and PL/SQL, will be covered. Other topics that may be covered include database administration and performance tuning. In the second part of the course, various techniques in data mining such as decision trees, neural networks, clustering etc. will be covered with suitable business related examples.

Prerequisite: BUSI0052 Database development and management *or* CSIS0278 Introduction to database management systems

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**BUSI0093. Enterprise resources planning systems (6 credit-units)**

This course is designed to provide an overview of enterprise resource planning systems and their use in the business environment. Topics include basic Enterprise Resource Planning Systems concepts, business processes, functions and data requirements as well as systems implementation issues.

Prerequisites: BUSI1003 Introduction to management information systems

**BUSI0094. Managing e-business transformation (6 credit-units)**

The course provides a roadmap for managers planning to transform their companies into an inter-networked enterprise where shared infrastructures are used to link customers, suppliers, partners and employees to create superior economic value. It covers e-business strategy, infrastructure, process management, and integration and implementation. The course is based on the premise that integrating Internet technologies throughout the value chain is crucial in building and managing customer relationships and thus brand equity.

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**ELECTIVE COURSES OFFERED BY THE FACULTY OF BUSINESS AND ECONOMICS**

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**ELECTIVE COURSES OFFERED BY THE DEPARTMENT OF COMPUTER SCIENCE**

- Level 2 and "Applications" courses offered by the Department of Computer Science.