

## **REGULATIONS FOR THE DEGREE OF BACHELOR OF ENGINEERING (BENG)**

These regulations apply to students admitted to the BEng curriculum in the academic year 2010-11 and thereafter.

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

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### **EN 1 Admission to the Degree**

To be eligible for admission to the degree of BEng, a candidate shall

- (a) comply with the General Regulations;
  - (b) comply with the Regulations for First Degree Curricula;
  - (c) satisfy all the requirements of the curriculum in accordance with these regulations and the syllabuses.
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### **EN 2 Period of Study**

The curriculum for the BEng degree shall normally require six semesters of full-time study, extending over not fewer than three academic years, and shall include any assessment to be held during and/or at the end of each semester. Candidates shall not in any case be permitted to extend their studies beyond the maximum period of registration of five academic years.

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### **EN 3 Curriculum Requirements**

To complete the curriculum, a candidate shall

- (a) satisfy the requirements prescribed in UG 5 of the Regulations for the First Degree Curricula;
  - (b) take not fewer than 180 credits of courses, in the manner specified in these regulations and syllabuses; candidates are also required to pass all core courses as specified in the syllabuses and satisfactorily complete prerequisite courses in order to enrol in a succeeding course;
  - (c) satisfy all the requirements prescribed for the minor programme option, if he/she pursues the minor programme; and
  - (d) satisfy all the requirements prescribed for the double-degree curriculum option, if he/she pursues the double-degree curriculum.
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**EN 4** Candidates shall normally select not fewer than 24 and not more than 30 credits of courses in any one semester (except the summer semester), unless otherwise permitted or required by the Board of the Faculty, or except in the last semester of study when the number of credits required to satisfy the outstanding curriculum requirements is fewer than 24 credits. Candidates may, of their own volition, take additional credits not exceeding 6 credits in each semester, and/or further credits during the summer semester, accumulating up to a maximum of 72 credits in one academic year. Candidates may, with the approval of the Board of the Faculty, exceed 72 credits in an academic year provided that the total number of credits taken shall not exceed 216 credits. Students making up for failed credits can be permitted by the Faculty to take up to 360 credits.

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

**EN 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. Changes to the selection of courses may be made only during the add/drop period of the semester in which the course begins, and such changes shall not be reflected in the transcript of the candidate. Requests for changes after the designated add/drop period of the semester shall be subject to the approval of the Board of the Faculty. Withdrawal from courses beyond the designated add/drop period will be subject to the approval of the Board of the Faculty.

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**EN 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 UG8(a) of the Regulations for the First Degree Curricula.

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**EN 8** Written examinations or tests shall normally be held at the end of each semester unless otherwise specified in the syllabuses.

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**EN 9** Candidates are required to make up for failed courses in the following manner:

- i) undergoing re-assessment/re-examination in the failed course to be held no later than the end of the following semester (not including the summer semester); or
  - ii) re-submitting failed coursework, without having to repeat the same course of instruction; or
  - iii) repeating the failed course by undergoing instruction and satisfying the assessments; or
  - iv) for elective courses, taking another course in lieu and satisfying the assessment requirements.
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**EN 10** Candidates shall not be permitted to repeat a course for which they have received a grade D or above for the purpose of upgrading.

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**EN 11** Unless otherwise permitted by the Board of the Faculty, a candidate will be recommended for discontinuation if

- (a) he/she fails to complete successfully 36 or more credits in two consecutive semesters (not including the summer semester) for one academic year, except where they are not required to take 36 credits in the two given semesters;
  - (b) he/she fails to achieve an average Semester GPA of 1.0 or higher for two consecutive semesters; or
  - (c) he/she has exceeded the maximum period of registration specified in EN2.
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**EN 12 Absence from Examination**

Candidates who are unable, because of illness, to be present at the written examination of any course may apply for permission to present themselves at a supplementary examination of the same course to be held before the beginning of the First Semester of the following academic year. Any such application shall be made on the form prescribed within two weeks of the first day of the candidate's

absence from any examination. Any supplementary examination shall be part of that academic year's examinations, and the provisions made in the regulations for failure at the first attempt shall apply accordingly.

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### **EN 13     Advanced Standing**

Advanced standing may be granted to candidates in recognition of studies completed successfully in an approved institution of higher education elsewhere in accordance with UG2 of the Regulations for First Degree Curricula. The amount of advanced credits to be granted shall be determined by the Board of the Faculty, in accordance with the following principles:

- (a) a minimum of two years of study at this University shall be required before the candidate is considered for the award of the degree; and
- (b) a minimum of 120 credits shall be accumulated through study in this University, or from transfer of credits for courses completed at other institutions in accordance with UG4(d) of the Regulations for the First Degree Curricula.

Advanced credits granted shall not be included in the calculation of the GPA but will be recorded on the transcript of the candidate..

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### **EN 14     Degree Classification**

To be eligible for the award of the BEng degree, candidates shall have:

- a) satisfied all the requirements in the UG5 of the Regulations for First Degree Curricula;
  - b) passed not fewer than 180 credits, comprising
    - i) introductory courses;
    - ii) advanced courses;
    - iii) project courses;
    - iv) training courses;
    - v) internship courses;
    - vi) Chinese and English language enhancement courses;
    - vii) Common Core courses;
    - viii) all required courses as prescribed in respective curriculum; and
    - ix) Faculty elective courses.
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**EN 15**     The degree of Bachelor of Engineering shall be awarded in five divisions:

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

A pass list of successful candidates shall be posted on Faculty notice boards.

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**EN 16**     The classification of honours shall be determined by the Board of the Faculty at its full discretion by taking into consideration the overall performance of candidates, or specifications in the syllabuses of respective programmes, and other relevant factors as appropriate.

## SYLLABUSES FOR THE DEGREE OF BACHELOR OF ENGINEERING (BENG)

General Engineering courses (applicable to candidates admitted in the academic year 2010-2011 and thereafter)

General Engineering courses include

ENGG1002	Computer programming and applications (6 credits)
ENGG1003	Mathematics I (6 credits)
ENGG1004	Mathematics IA (3 credits)
ENGG1005	Mathematics IB (3 credits)
ENGG1006	Engineering for sustainable development (6 credits)
ENGG1007	Foundations of computer science (6 credits)
ENGG1009	Industrial management and logistics (6 credits)
ENGG1010	Foundations of engineering mechanics (6 credits)
ENGG1011	Introduction to biomedical engineering (6 credits)
ENGG1015	Introduction to electrical and electronic engineering (6 credits)
ENGG1016	Computer programming and applications I (6 credits)

Candidates are required to satisfactorily complete General Engineering courses as specified in the syllabus of the programme concerned.

The course descriptions of the General Engineering courses are as follows:

### **ENGG1002 Computer programming and applications (6 credits)**

This course covers both the basic and advanced features of the C/C++ programming languages, including syntax, identifiers, data types, control statements, functions, arrays, file access, objects and classes, class string, structures and pointers. It introduces programming techniques such as recursion, linked lists and dynamic data structures. The concept and skills of program design, implementation and debugging, with emphasis on problem-solving, will also be covered.

Target students are those who wish to complete the programming course in a more intensive mode in 1 semester. Students with some programming knowledge are encouraged to take this course.

Assessment: 50% continuous assessment, 50% examination

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### **ENGG1003 Mathematics I (6 credits)**

Linear algebra, advanced calculus, vector analysis, ordinary differential equations, Laplace transforms.

Prerequisite : HKALE Pure Mathematics

Assessment: 10% continuous assessment, 90% examination

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### **ENGG1004 Mathematics IA (3 credits)**

Linear algebra, advanced calculus, ordinary differential equations.

Assessment: 10% continuous assessment, 90% examination

**ENGG1005 Mathematics IB (3 credits)**

Vector spaces, vector analysis, Laplace transforms.

Assessment: 10% continuous assessment, 90% examination

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**ENGG1006 Engineering for sustainable development (6 credits)**

Natural and human-made environment; urban resource consumption and environmental pollution; past and present civil engineering wonders; modern engineering systems; role of civil engineers in a changing world; sustainable cities and the future.

Assessment: 50% continuous assessment, 50% examination

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**ENGG1007 Foundations of computer science (6 credits)**

This course provides students a solid background on discrete mathematics and structures pertinent to computer science. Topics include logic; set theory; mathematical reasoning; counting techniques; discrete probability; trees, graphs, and related algorithms; modeling computation.

Assessment: 50% continuous assessment, 50% examination.

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**ENGG1009 Industrial management and logistics (6 credits)**

The fundamental role of logistics and supply chain management in the economy and organisation; contribution of logistics and supply chain management to value creation; introduction to logistics industry in Hong Kong; contemporary topics in logistics and supply chain management. Essential management and business skills for engineers; introduction to project management; global manufacturing; applications of industrial engineering principles in different sectors and industries; quality functions; performance improvement; basics of problem solving and decision making.

Assessment: 100% continuous assessment

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**ENGG1010 Foundations of engineering mechanics (6 credits)**

Force systems and equilibrium; first and second moments of mass and area; introduction to stress and strain; torsion of circular shafts; introduction to mechanisms and kinematics; rigid body dynamics; hydrostatics; fluid in motion.

Assessment: 10% continuous assessment, 90% examination

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**ENGG1011 Introduction to biomedical engineering (6 credits)**

This course is an overview of the essential areas in biomedical engineering including technologies and application in life sciences and medicine. The course is broadly divided into 4 areas: biomechanics and biomaterial; cell and tissue engineering; biomedical instrumentations and sensors; and medical imaging. The global development and other issues such as safety, ethics and industry will also be addressed. The course has a laboratory component to provide the students with some hands-on experience in the subject.

Assessment: 20% practical work, 40% continuous assessment, 40% examination

**ENGG1015 Introduction to electrical and electronic engineering (6 credits)**  
[for students admitted in 2010-11 and thereafter]

This course provides an overview of the general field of electrical and electronic engineering and its role in the modern world. The function of different electronic engineering disciplines in modern electronic system designs will be introduced, including signal processing, system-level design, digital logic design, circuits design, as well as electronic devices design. The role of electrical systems and their impact on the environment will also be discussed. Finally, the socio-economical impact of electrical and electronic technologies will be introduced."

Assessment: 40% practical work, 20% continuous assessment, 40% examination

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**ENGG1016 Computer programming and applications I (6 credits)**

This course covers both the basic and advanced features of the C/C++ programming languages, including syntax, identifiers, data types, control statements, functions, arrays, file access, objects and classes, class string, structures and pointers. It introduces programming techniques such as recursion, linked lists and dynamic data structures. The concept and skills of program design, implementation and debugging, with emphasis on problem-solving, will also be covered.

Target students are those who wish to complete the programming course in a slower pace covering 2 semesters.

Assessment: 50% continuous assessment, 50% examination.

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**University Language Enhancement Courses**

All the students admitted to the Bachelor of Engineering curriculum under common code admission are required to take the following two language enhancement courses in their first year of study:

**CAES1515 Professional and technical oral communication for engineers**  
**CENG1001 Practical Chinese language course for engineering students<sup>1</sup>**

**COURSE DESCRIPTIONS**

**CAES1515. Professional and technical oral communication for engineers (3 credits)**

This course focuses on students developing technical and professional spoken English skills. Throughout the course, the students will give a series of presentations which will help them to improve skills such as accessing, abstracting, analyzing, organizing and summarizing information; asking questions and negotiating meanings; making effective grammatical and lexical choices and using visual aids to ensure meaning is clear. The presentations give the students an opportunity to develop the skills to talk about general issues in Engineering in the Hong Kong context, engineering theories and their practical applications and also requires them to present a detailed exploration of one aspect of engineering related to their chosen major.

Assessment: 100% continuous assessment

**CENG1001. Practical Chinese language course for engineering students**

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<sup>1</sup> Putonghua-speaking students should take CUND0002 or CUND0003. Students who have not studied Chinese language during their secondary education / who have not attained the requisite level of competence in the Chinese language to take CENG1004 can apply (i) to take credit-bearing Cantonese or Putonghua language courses offered by the School of Chinese especially for international and exchange students; OR (ii) to be exempted from the Chinese language requirement and take an elective course in lieu.

**(3 credits)**

The course is designed to introduce practical Chinese writing skills; letter-writing; official, business and personal; office documents: notices, announcements, proposals, minutes and reports; technical writing skills; characteristics of the written language used in China, Hong Kong, Taiwan and Singapore; the art of public speaking; different scripts of Chinese characters; the engineering profession and Chinese culture.

Assessment: 50% continuous assessment, 50% examination.

Minor Option (applicable to candidates admitted in the academic year 2005-2006 and thereafter)

Candidates are given an option to pursue a minor in a discipline outside their own degree curriculum, subject to approval of the Head of Department concerned. Candidates who wish to have their minor recorded on the transcript must take and pass all the required courses in the selected minor as specified by the offering Department/Faculty in addition to the graduation requirements of their own degree curriculum. For the descriptions of the course under minor options, candidates should refer to the syllabuses of the relevant degree.

Courses taken to fulfil the Minor Option requirements may also be considered as equivalent courses that satisfy the complementary studies and elective requirements of the BEng curriculum, subject to the approval of the Board of the Faculty of Engineering.

Double-Degrees in BEng/BBA Option (applicable to candidates admitted in the academic year 2007-2008 and thereafter)

Candidates are given an option to pursue the double-degrees in BEng/BBA, subject to the approval of the Boards of the Faculty of Engineering and Faculty of Business and Economics upon their meeting the prescribed admission requirements as laid down by both the Faculty of Engineering and the Faculty of Business and Economics.

Courses taken to fulfil the double-degree curriculum requirements may also be considered as equivalent courses that satisfy the complementary studies and elective requirements of the BEng curriculum, subject to the approval of the Board of the Faculty of Engineering.

Candidates who have satisfied all the requirements of the BEng curriculum will be awarded the degree of Bachelor of Engineering. To be eligible for proceeding to the BBA programme in the 4<sup>th</sup> year, candidates must (1) fulfil the requirements of the BEng curriculum; and (2) pass the 54 credits of courses, as listed below, as required by the Faculty of Business and Economics during their study for

BEng

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<sup>2</sup> Students pursuing double-degrees in BEng/BBA are required to take “CAES1907 Business Communication” in lieu of the following English enhancement courses during their first year of study as required by respective BEng curricula: CAES1503, CAES1505, CAES1507, CAES1509, CAES1511 or CAES1513.

Course Code	Course	Credits
BUSI1002	Introduction to accounting	6
BUSI1003	Introduction to management information systems	6
BUSI1004	Marketing	6
BUSI1007	Principles of management	6
ECON1001	Introduction to economics I	6
FINA1003	Corporate finance	6
BUSI0027	Management accounting I	6
	Electives (Any 2 courses in Finance, HRM or Marketing major as specified below)	12
	<b>Total</b>	<b>54</b>

Elective courses for BEng/BBA (Finance)

Course Code	Course	Credits
FINA0301	Derivatives	6
FINA2802	Investments and portfolio analysis	6
FINA0303	Case studies in corporate finance	6

Elective courses for BEng/BBA (Human Resource Management)

Course Code	Course	Credits
BUSI0026	Employment and labour relations	6
BUSI0029	Human resource management and business strategy	6
BUSI0034	Human resource: theory and practice	6
BUSI1005	Organizational behaviour	6

Elective courses for BEng/BBA (Marketing)

Course Code	Course	Credits
BUSI0004	Advertising management	6
BUSI0031	Marketing research	6
BUSI0050	Consumer behaviour	6
BUSI0038	Services marketing	6
BUSI0071	Strategic marketing management	6

Subject to approval of the Board of the Faculty of Engineering, candidates who have completed the requirements of BEng and decide not to proceed to the study for BBA may be awarded with a minor as specified by the Faculty of Business and Economics, if they have completed not less than 36 credits of courses in compliance with the syllabuses for the minor programme.

To obtain the degree of BBA, candidates must satisfactorily complete 114 credits of courses, 54 of which shall be completed during the study for BEng and 60 of which shall be completed during the 4<sup>th</sup> year in accordance with the Regulations and Syllabuses for the Degree of BBA in Conjunction with the Degree of BEng.

*Note: Further details about the length and content of the courses listed may be obtained on application to the department concerned.*