

**REGULATIONS FOR THE DEGREE OF
BACHELOR OF SCIENCE IN EXERCISE AND HEALTH
(BSc[Exercise&Health])**

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

The degree of Bachelor of Science in Exercise and Health (BSc[Exercise&Health]) is an undergraduate degree, awarded for the satisfactory completion of a prescribed programme of study in the exercise sciences.

Ed166 In these regulations, and in the syllabuses for the degree of BSc(Exercise&Health), unless the context otherwise requires -

‘Programme of study’ means a combination of core, elective and general education courses as specified in the syllabus, and approved by the Board of Studies;

‘Course’ means a course of instruction, as defined in the syllabus;

‘Introductory level course’ means level 1 course as defined in the syllabus;

‘Advanced level course’ means any level 2 or 3 course as defined in the syllabus.

Ed167 Admission to the degree

To be eligible for admission to the degree of Bachelor of Science in Exercise and Health, candidates shall

- (a) comply with the General Regulations;
 - (b) comply with the Regulations for First Degree Curricula; and
 - (c) complete the curriculum in accordance with the Regulations and Syllabuses that follow.
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ED168 Length of study

The curriculum for the degree of Bachelor of Science in Exercise and Health shall normally require six semesters of full-time study spread over three academic years, excluding summer semesters.

Ed169 Selection of courses

Candidates shall select 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 course(s) may be made only during a period specified by the Faculty, normally in the first two teaching weeks of the semester to which the course begins. Such changes shall not be reflected in the transcripts of candidates. Requests to change after the specified period of a semester shall not be considered, and candidates withdrawing from any course without permission after the specified period of a semester shall be given a failed grade.

Ed170 Completion of curriculum

To complete the curriculum, candidates shall

- (a) satisfy the requirements prescribed in UG3 of the Regulations for First Degree Curricula;
 - (b) complete not less than 180 credits, in the manner specified in the syllabuses;
 - (c) shall follow the required number of core and elective courses as prescribed in the syllabuses, normally equivalent to 60 credits for each year of study. For each semester, candidates shall select, no less than 24, nor more than 36 credits of courses. Should students wish to deviate from the prescribed programme structure or select fewer than 24 or more than 36 credits of courses in a semester, approval must be sought from the Programme Director.
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Ed171 Assessment and grades

- (a) Candidates shall have passed a course if the Board of Examiners is satisfied by their performance in the assessment, which may be conducted in any one or any combination of the following manners: written examinations or tests, continuous assessment of performance, laboratory work, fieldwork, research or project reports, or in any other manner as prescribed in the syllabuses. Grades shall be awarded in accordance with UG 5 of the Regulations for First Degree Curricula.
 - (b) Candidates failing to fulfil the laboratory or fieldwork component of a course, if any, may result in failure of the whole course.
 - (c) Candidates shall not be permitted to repeat for upgrading purposes a course for which they have received a pass grade.
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Ed172 Candidates who fail a course may retake the course and both grades shall be recorded on the transcript. In the calculation of the semester GPA, all credit-units attempted are counted. In the calculation of the cumulative GPA, only credits-units gained are counted.

Ed173 Unsatisfactory performance

Candidates in any academic year who have passed less than 36 credits of courses may be required to discontinue their studies in accordance with General Regulation G12.

Ed174 Absence from examinations

Failure to take the examination as scheduled, normally results in automatic course failure. Candidates, who are unable because of illness to be present at any examination of a course, may apply for permission to present themselves for examination at some other time. Any such application shall be made on the form prescribed within two weeks of the day of the examination.

Ed175 Advanced standing

Advanced credits granted under UG2 of the Regulations for First Degree Curricula shall be recorded on the transcript of candidates but not included in the calculation of the cumulative GPA. Candidates with advanced standing credits shall normally have their degree classification determined separately by the Faculty Board.

Ed176 Award of the degree

To be eligible for the award of the degree of Bachelor of Science in Exercise and Health, candidates shall pass a minimum of 180 credits in the manner specified in the syllabuses.

Ed177 Degree classification

The degree shall be classified in five divisions: First Class Honours; Second Class Honours Division One; Second Class Honours Division Two; Third Class Honours; Pass.

The classification of honours shall be determined by the Board of Examiners at its full discretion by taking into account the overall performance of the candidates across all years of study, and other relevant factors as appropriate.

SYLLABUSES FOR THE DEGREE OF BACHELOR OF SCIENCE IN EXERCISE AND HEALTH

A. MAJOR-MINOR PROGRAMME STRUCTURE

BSc(Exercise&Health) students admitted in 2009-2010 shall follow the BSc(Exercise&Health) curriculum, which includes:

- (i) 6 credits of courses in English language enhancement;
- (ii) 3 credits of Chinese language enhancement (candidates who have not studied Chinese language during their secondary education may be exempted from this requirement);
- (iii) a pass in a broadening course in Humanities and Social Sciences Studies, and a pass in a broadening course in Culture and Value Studies or an area of study outside this degree curriculum as an elective¹;
- (iv) a pass in the information technology proficiency test or a pass in an IT course or a 6-credit IT-integrated course; and
- (v) all required courses as prescribed in the major and minor curriculum.

Students shall select one of the following options for Major(s) and Minor:

- Option 1: “Major in Exercise Science”;
 Option 2: “Major in Exercise Science” plus a Minor; or
 Option 3: “Major in Exercise Science” plus a second Major.

Options (all 180 credits)			
Option	Option 1	Option 2	Option 3
Core requirements	Major in Exercise Science[^]: 24 credits (intro courses) 48 credits (adv courses) 18 credits (adv electives)	Major in Exercise Science[^]: 24 credits (intro courses) 48 credits (adv courses) 18 credits (adv electives) Minor* 12 credits (intro courses) 24 credits (adv courses)	Major in Exercise Science[^]: 24 credits (intro courses) 48 credits (adv courses) 18 credits (adv electives [^]) 2nd Major* 24 credits (intro courses) 48 credits (adv courses)
Broadening/Language Requirements	English: 6 credits Chinese: 3 credits Broadening ² : 6 credits	English: 6 credits Chinese: 3 credits Broadening ² : 6 credits	English: 6 credits Chinese: 3 credits Broadening ² : 6 credits

¹ Students may take Common Core courses to satisfy the UG3 requirements.

² Students may take a 6-credit IT-integrated course or Common Core course to satisfy the UG3 requirements.

Other Requirement:	IT Test: non-credit-bearing; or an IT course or a 6-credit IT-integrated course	IT Test: non-credit-bearing; or an IT course or a 6-credit IT-integrated course	IT Test: non-credit-bearing; or an IT course or a 6-credit IT-integrated course
Any other courses:	Balance to make up the total number of credits required for graduation	Balance to make up the total number of credits required for graduation	Balance to make up the total number of credits required for graduation
Total Credits	180	180	180

- Notes: 1. * No. of credits for majors or minors may vary from programme to programme.
 2. ^ Students without AL/AS/GCE/IB Biology or equivalent must take BIOL0126 "Fundamentals of Biology" in Year 1, Semester 1.
 3. ^^ If the 2nd major is offered by the Faculty of Science, electives offered by the Science Faculty can be chosen.

B. PROGRAMME STRUCTURE FOR BSC(EXERCISE&HEALTH) STUDENTS

Year I (60 credits)	Year II and III (60 credits/year)	
Major in Exercise Science- Introductory Level 1 Courses (24 credits)	Major in Exercise Science- Core Advanced Level Courses (48 credits)	
PBSL1111 Kinetic Anatomy	6	PBSL2229 Exercise physiology [#]
PBSL1114 Physiology for human movement	6	PBSL2225 Decision making using data
PBSL1120 Foundations of exercise science	6	PBSL2233 Biomechanics
PBSL1121 Physical activity and health	6	PBSL2234 Fundamentals of motor control and learning
Language enhancement (9 credits)		PBSL2235 Measurement and promotion of physical activity
ECEN1409 General English for Exercise&Health students	3	PBSL2236 Sport and exercise psychology**
ECEN1410 Professional communication skills for Exercise&Health students	3	
CEDU1006 Practical Chinese language course for BSc(Exercise&Health) students	3	
Biology (6 credits) (only for students without AL/AS/GCE/IB Biology or equivalent)		Year III
BIOL0126 Fundamentals of biology	6	PBSL3998 Dissertation
		1
		2
Courses to be taken in Year I, II, and/or III		
Broadening courses³ (6 credits) (to fulfill General Regulations UG3(b) and (c))		
Humanities and Social Sciences Studies		3
Culture and Value Studies or an area of study outside those of the curriculum		3
Major in Exercise Science - Advanced Level Electives^{^^} (18 credits)		
PBSL3334 Advanced exercise physiology		6
PBSL3335 Advances in skill learning		6
PBSL3337 Physical activity and disability		6
PSBL3338 Physical activity and diseases of inactivity		6
PSBL3336 Exercise prescription and training		6
PBSL3339 Public health promotion of physical activity		6
PBSL3340 Special topic in exercise sciences		6
PBSL3341 Recent advances in exercise and health		0
PBSL3342 Current concepts in exercise and health		
PBSL2200 Summer internship		
(^^ If the 2 nd Major is offered by the Faculty of Science, electives offered by the Faculty of Science can be chosen.)		0
Information Technology		
YITC1002 Information technology proficiency test ⁴		
Courses from other prescribed Minor/Major and/or any inter-faculty-electives		
Course to fulfill the requirements for other approved Minor or Major, and to make up 60 credits/year.		

³ Students may take a 6-credit IT-integrated course in Humanities and Social Sciences Studies or a 6-credit IT-integrated course in Culture and Value Studies or Common core Course to satisfy the UG3 requirements.

⁴ Students may take an IT course or a 6-credit IT-integrated course to satisfy the UG3 requirements.

C. MAJORS AND MINORS AVAILABLE TO BSC STUDENTS

BSc(Exercise&Health) students who selected Option 2 or 3 may select a Major or Minor from the following list of Majors/Minors available for BSc(Exercise&Health) students. Not all Majors and Minors will be offered each year.

(Full syllabuses details are available on the programme website)

<p><u>Arts Majors</u> Chinese History and Culture Chinese Language and Literature Chinese Studies Translation English Studies Cross-Cultural Studies in English Language and Communication Comparative Literature Fine Arts History Linguistics Human Language Technology Music Philosophy Linguistics and Philosophy American Studies European Studies Japanese Studies Modern China Studies French German Spanish</p>	<p><u>Arts Minors</u> Chinese History and Culture Chinese Language and Literature Chinese Studies Translation English Studies Cross-Cultural Studies in English Language and Communication African Studies Comparative Literature Fine Arts History Linguistics Music Philosophy American Studies European Studies Japanese Culture Japanese Language Modern China Studies French German Spanish Arabic Greek Italian Korean Portuguese Swedish Thai</p>
<p><u>Science Majors</u> Astronomy Biochemistry Biology Biotechnology Chemistry Earth Sciences Ecology & Biodiversity Environmental Protection Environmental Science Food & Nutritional Science Materials Science Mathematics Mathematics / Physics Microbiology Physics Risk Management Statistics</p>	<p><u>Science Minors</u> Actuarial Studies Astronomy Biochemistry Biology Biotechnology Chemistry Earth Sciences Ecology & Biodiversity Environmental Protection Food & Nutritional Science General Science Global Climate Change Mathematics Microbiology Physics Risk Management Statistics</p>
<p><u>Business & Economics Majors</u> Economics Finance</p>	<p><u>Business & Economics Minors</u> Business Economics Finance</p>

<u>Social Sciences Majors</u> Criminal Justice Geography Global Studies Media and Cultural Studies Politics and Public Administration Psychology Public and Social Administration Social Work and Social Administration Sociology	<u>Social Sciences Minors</u> Criminal Justice Geography Global Studies Media and Cultural Studies Politics and Public Administration Psychology Public and Social Administration Social Work and Social Administration Sociology Family and Child Studies Human Resources Management Journalism and Media Studies
<u>Engineering Majors</u> --	<u>Engineering Minors</u> Computer Science
<u>Education Majors</u> --	<u>Education Minors</u> Applied Child Development Education Information Management

Major in Exercise Science

The Major in Exercise Science synthesises the biophysical, psycho-social and health aspects of exercise, providing a multi-disciplinary programme of education in the exercise sciences and health.		
Minimum Entry Requirement (from 2007-08): AL/AS/GCE/IB Biology or equivalent or BIOL0126 "Fundamentals of Biology" Minimum Credit Requirement: 90 credits Impermissible combination: Minor in Exercise Science		
Introductory Level I Courses^ (24 credits)		
PBSL1111	Kinetic anatomy	6
PBSL1114	Physiology for human movement	6
PBSL1120	Foundations of exercise science	6
PBSL1121	Physical activity and health	6
Core Advanced Level Courses (48 credits)		
PBSL2229	Exercise physiology [#]	6
PBSL2225	Decision making using data	6
PBSL2233	Biomechanics	6
PBSL2234	Fundamentals of motor control and learning	6
PBSL2235	Measurement and promotion of physical activity	6
PBSL2236	Sport and exercise psychology [*]	6
PBSL3998	Dissertation	12
Advanced Level Electives (18 credits)^^		
PBSL3334	Advanced exercise physiology	6
PBSL3335	Advances in skill learning	6
PBSL3337	Physical activity and disability	6
PBSL3338	Physical activity and diseases of inactivity	6
PBSL3336	Exercise prescription and training	6
PBSL3339	Public health promotion of physical activity	6
PBSL3340	Special topic in exercise sciences	6
PBSL3341	Recent advances in exercise and health	6
PBSL3342	Current concepts in exercise and health	6
PBSL2200	Summer internship	0

- Notes: 1. ^ Students without AL/AS/GCE/IB Biology or equivalent must take BIOL0126 "Fundamentals of Biology" in Year 1, Semester 1.
2. # It is highly recommended that students take BIOC1001 "Basic Biochemistry" or BIOL1125 "Introduction to Biochemistry" prior to PBSL2229 "Exercise physiology".
3. * It is highly recommended that students take PSYC1001 "Introduction to Psychology" prior to PBSL2236 "Sport and exercise psychology"
4. ^^ If the 2nd major is offered by the Faculty of Science, electives offered by the Science Faculty can be chosen.

D. COURSE DESCRIPTIONS

MAJOR IN EXERCISE SCIENCE

Introductory Level 1 Courses (24 credits) (Year I)

PBSL1111. Kinetic anatomy (6 credits)

This course provides an introduction to the gross anatomy of the human body, with an underlying emphasis on anatomy for human movement. Areas covered usually include the tissue types, the anatomical referencing system, the axial and appendicular skeleton, important nerves, blood vessels and skeletal muscles, and an overview of the heart, lungs and viscera.

PBSL1114. Physiology for human movement (6 credits)

The course is designed to provide students with an understanding of the underlying physiological processes enabling human movement. Topics normally covered include nutrition and energy, skeletal muscle function, neural control of movement, cardiovascular function, respiratory function and endocrine function.

PBSL1120. Foundations of exercise science (6 credits)

This course provides an introduction to exercise science as a field of study by providing an overview of (1) the sub-disciplines that provide the knowledge base for the discipline of exercise science and (2) the professions that depend on exercise science for their practice. Key biological themes related to adaptation and maturation will be used to exemplify the contributions that studies of the anatomical, mechanical, physiological, neural, and psychological and socio-cultural studies of human physical activity can make to human health and performance.

PBSL1121. Physical activity and health (6 credits)

This course investigates the role of physical activity in the maintenance of good physical health and avoidance of disease. The epidemiological evidence for physical inactivity as a causative factor in various lifestyle related disorders is introduced, and the use of physical activity and exercise as effective means of health management is investigated.

Core Advanced Level Courses (48 credits) (Year II or III)

PBSL2229. Exercise physiology (6 credits)

This course provides an introduction to energy metabolism and the changes that occur in response to physical exercise. Emphasis is placed on the respiratory, cardiovascular and muscular systems, and the principles of exercise testing and prescription. Introductory level knowledge of physiology and biochemistry are highly recommended.

Note: It is highly recommended that students take BIOC1001 “Basic Biochemistry” or BIOL1125 “Introduction to Biochemistry” prior to PBSL2229.

PBSL2225. Decision making using data (6 credits)

To introduce students to the common research design and statistical concepts for the exercise sciences and provide practical experience of describing and analyzing data using the Statistical Package for the Social Sciences (SPSS).

PBSL2233. Biomechanics (6 credits)

Students will be provided with an in-depth understanding of the mechanical principles governing human movement and be introduced to the mathematical modelling of sports movement. The use of various measurement techniques for the biomechanical analysis of sport will be covered so that students should be able to collect data using video analysis and calculate kinematic and kinetic descriptors of human movement.

PBSL2234. Fundamentals of motor control and learning (6 credits)

The human brain has evolved to perform one major function, movement. Species that do not move do not have brains; species with larger brains have more intricate movement repertoires. Thus, the study of movement is an important aspect of understanding how the human brain works and what it means to be human. This course offers a broad overview of human movement control, learning, and development. Theoretical considerations are married with practical experience to promote a thorough understanding of human movement. Emphasis is placed on basic principles and their practical application to sport.

PBSL2235. Measurement and promotion of physical activity (6 credits)

The course aims to develop a critical understanding of how physical activity is assessed. Students will investigate the determinants of physical activity and begin to develop an understanding of how effective interventions can be designed and evaluated.

PBSL2236. Sport and exercise psychology (6 credits)

The course will introduce students to both theoretical and applied aspects of psychological phenomena in sport and exercise. Students will consider a broad range of topics that are key in the field, including unidimensional and multidimensional theories of stress and anxiety in performance, motivation and goal setting, team cohesion, cognitive control strategies and aggression, coaching practice and expert/novice differences. An introductory knowledge of psychology is highly recommended.

Note: It is highly recommended that students take PSYC1001 "Introduction to Psychology" prior to "PBSL2236 "Sport and exercise psychology".

PBSL3998. Dissertation (12 credits) (Year III)

The dissertation is an opportunity for students to undertake a significant independent piece of research work; to build and demonstrate knowledge and research skills in a particular sub-area of physical activity and exercise science, and to show ability in writing in the normal academic style of a journal article. Students taking the dissertation should have already completed a statistics course.

Advanced Level Electives (18 credits) (Year II or III)

PBSL3334. Advanced exercise physiology (6 credits)

This course provides a more advanced understanding of the respiratory and cardiovascular adaptations to physical exercise; plus areas of applied work physiology (e.g. diving, altitude, thermoregulation, water balance and ergogenics).

Note: Normally students will have completed PBSL2229 “Exercise physiology” or 12 credits of biological sciences prior to taking this course.

PBSL3335. Advances in skill learning (6 credits)

The course will introduce students to an in depth examination of both theoretical and applied aspects of skill learning. Students will trace the development of the field, from the early work in psychology and sport science through to contemporary developments in movement rehabilitation. A significant component of the course will be dedicated to experimental work, with students expected to develop and test empirically their own hypotheses.

Note: It is recommended that students complete PBSL2236 “Sports and exercise psychology” or 6 credits in psychology before taking this course.

PBSL3336. Exercise prescription and training (6 credits)

The course provides students with hands-on skills for fitness (wellness) coaching for a wide spectrum of athletes/ clientele. Students will explore the primary role exercise plays in the prevention of diseases. The course will provide students with the hand-on skills to plan, design, instruct and monitor a proper training program (exercise prescription) for the client. Basic knowledge of human anatomy and exercise physiology are highly recommended.

PBSL3337. Physical activity and disability (6 credits)

This course provides an overview of the relationship between physical/psycho-social health and physical activity in persons with disabilities. It also explores the current concepts and trends in adapted physical activity.

PBSL3338. Physical activity and diseases of inactivity (6 credits)

Obesity is emerging as one of the greatest threats to world public health. Obesity and several other serious diseases (coronary heart disease, diabetes, osteoporosis and some cancers) all have one thing in common – they are associated with physical inactivity. This course will examine the physiological bases upon which physical inactivity leads to disease and evaluate the role physical activity plays in the prevention and treatment of lifestyle diseases. An introductory knowledge of physiology is highly recommended.

PBSL3339. Public health promotion of physical activity (6 credits)

This course introduces the concepts and methods of using physical activity as a public health tool. The distribution of physical inactivity in the population will be discussed in context with the health of the population, and the evidence base for effective interventions will be reviewed. The course will also review how the evidence base informs national and international policy aimed at promoting physical activity.

PBSL3340. Special topics in exercise sciences (6 credits)

This course introduces the students into a current topic that is of special interest to the field of Exercise Sciences. The course focuses on one target article written by a leading expert in the field of exercise sciences. Instead of learning the facts, student will learn to form an educated opinion on the topic, both orally and in writing. To this end, students will conduct short literature searches to enhance their understanding of the key concepts that underlie the topic.

PBSL3341. Recent advances in exercise and health (6 credits)

Students taking this course will be given an overview of recent advances in the field of Exercise and Health. The course will normally focus on one specialist area that will provide students with detailed learning opportunities that may involve combinations of lectures, seminars, labs, student presentations and other learning experiences. When offered, the specialist area of this course may change from year to year and more detailed information about the specialism should be obtained from the Institute of Human Performance (IHP) Academic Office.

PBSL3342. Current concepts in exercise and health (6 credits)

Students taking this course will be given an overview of current concepts in the field of Exercise and Health. The course will normally focus on one specialist area that will provide students with detailed learning opportunities that may involve combinations of lectures, seminars, labs, student presentations and other learning experiences. When offered, the specialist area of this course may change from year to year and more detailed information about the specialism should be obtained from the Institute of Human Performance (IHP) Academic Office.

PBSL2200. Summer internship (non-credit-bearing)

The summer internship is designed to give students first-hand experience in the working-environment relevant to sport, recreation, health and physical activity. Each student will be placed in an approved institution (minimally 100 hours in total) in summer and will evaluate the appropriate skills and techniques utilized in specific settings.

INFORMATION TECHNOLOGY

YITC1002. Information technology proficiency test (non-credit-bearing)

(Details refer to the description of the test)

LANGUAGE ENHANCEMENT COURSES

English Language Enhancement

ECEN1409. General English for Exercise&Health students (3 credits)

This course provides the opportunity for students to enhance their English proficiency skills for general purposes. The following skills are taught: pronunciation, vocabulary and Powerpoint presentation. Assessment is wholly by coursework.

ECEN1410. Professional communication skills for Exercise&Health students (3 credits)

This course prepares students to communicate effectively in work situations which entail the use of English. The emphasis is on the development of writing skills. Students are introduced to different types of professional skills such as telephoning skills, resume writing and report writing. They are required to conduct an investigation into Exercise and Health issues in Hong Kong and produce a portfolio of all written outcomes at the end of the term. Assessment is wholly by coursework.

Chinese Language Enhancement

CEDU1006. Practical Chinese language course for BSc(Exercise&Health) students (3 credits)

Syllabus

1. Practical Chinese writing skills 實用中文寫作技巧
 - a. Classical and modern Chinese 文言與白話
 - b. The Chinese language: characteristics and usage 漢語特性和語文運用
 - c. Basic grammar of modern Chinese 現代漢語基礎語法
2. Chinese characters 漢字
 - a. Traditional characters 傳統漢字
 - b. Simplified characters 簡化字
 - c. Variant forms 異體字
3. Letter-writing 書信
 - a. Personal letter writing techniques 私人書信寫作技巧
 - b. Business letter writing techniques 商務書信寫作技巧
 - c. Official letter writing techniques 公務書信寫作技巧
4. Office documents 辦公室文書
 - a. Notices and announcements 啟事及通告
 - b. Proposals 建議書
 - c. Minutes and reports of meetings 會議文書
5. Chinese for special purposes 專業中文
 - a. Chinese electronic media and sports science 中文電子媒體與運動科學
 - b. Chinese email writing techniques 中文電子郵件寫作技巧
6. Presentation and communication techniques 表達與溝通技巧
 - a. Public speaking and speech writing 演講技巧與演講辭的撰寫
 - b. Discussion and the art of persuasion 討論與說服技巧

BROADENING COURSES⁵/INTER-FACULTY ELECTIVES (6 credits)

Candidates are required to fulfill the following requirements as specified in Regulation UG3(b) and (c) of the Regulations for First Degree Curriculum:

- (a) Successful completion of a 3-credit course in Humanities and Social Sciences Studies; and
 - (b) Successful completion of a 3-credit course in Culture and Value Studies; *or* a 3-credit course in an area of study outside those of the candidates' own degree curricula, as an elective course.
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BIOLOGY

BIOL0126. Fundamentals of Biology (6 credits) (offered by the Faculty of Science)

Required to be taken by students without AL/AS/GCE/IB Biology or equivalent.

(Please refer to <http://www.hku.hk/science> for the course description.)

⁵ Students may take IT-integrated courses or Common core Courses to satisfy the UG3 requirements.