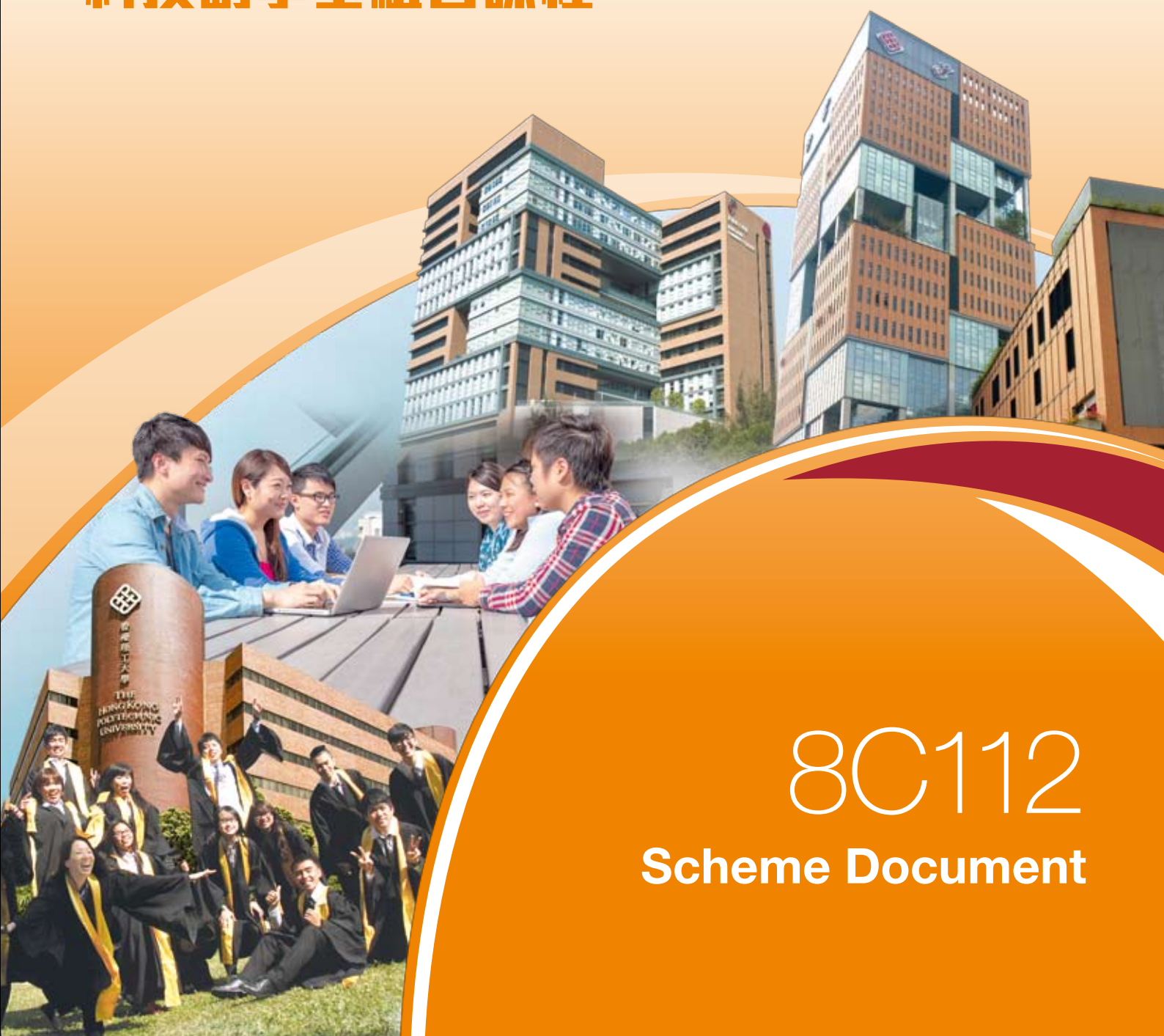


HKCC 2014/15

Associate Degree Scheme in
Science and Technology

科技副學士組合課程



8C112

Scheme Document



Associate Degree Scheme in Science and Technology
(Scheme Code 8C112)

comprising

Associate in Engineering
工程學副學士

Associate in Information Technology
資訊科技副學士

Associate in Statistics and Computing for Business
商業統計及電子計算副學士

Associate of Science
理科副學士

Definitive Scheme Document

September 2014

This Definitive Scheme Document applies to the cohort of students admitted in the 2014/15 academic year. Students should abide by all the rules and regulations stated herein, as well as those stated in the Student Handbook. Both this Definitive Scheme Document and the Student Handbook are subject to review and HKCC may make appropriate changes at any time. Students will be informed of the changes as and when appropriate.

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Section Two: Syllabuses

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Section One: General Information

1. Host Department

The Associate Degree Scheme in Science and Technology (“The Scheme”) is hosted by Hong Kong Community College (“HKCC”) of The Hong Kong Polytechnic University (PolyU).

2. Scheme Operation and Management

2.1 Programmes under the Scheme

The Scheme comprises the four programmes below:

<u>Programme Title</u>	<u>Programme Code</u>
• Associate in Engineering	8C112-ENG
• Associate in Information Technology	8C112-IT
• Associate in Statistics and Computing for Business	8C112-SCB
• Associate of Science	8C112-AS

The programmes under the Associate Degree Scheme in Science and Technology are listed on the Qualifications Register (QR) of the HKSAR; the qualifications are recognised under the Qualifications Framework (QF) and are commensurate with Level 4 of the Generic Level Descriptors. For details of QR and QF, please visit <http://www.hkqr.gov.hk/>.

2.2 Scheme and Programme Leaders

A Scheme Leader is appointed to provide academic support in the realm of quality assurance in both teaching and learning. The Scheme Leader, with the assistance of an Assistant Scheme Leader, also provides input in staffing, student admission, assessment and feedback, and scheme/programme development.

Programme Leaders and Assistant Programme Leaders (where appropriate) are appointed to manage the various programmes under the Associate Degree Scheme in Science and Technology.

2.3 College Programme Committee

The College Programme Committee (CPC) exercises the overall academic and operational responsibility for all the programmes of HKCC and their development within defined policies, procedures and regulations.

2.4 Scheme Executive Group

The Scheme Executive Group (SEG) manages the day-to-day operation of the programmes within this scheme. The Group, which consists of a Scheme Leader, an Assistant Scheme Leader, Programme Leaders, Assistant Programme Leaders and staff with key programme responsibilities, operates informally.

2.5 Student/Staff Consultative Group

The Student/Staff Consultative Group (SSCG) provides a channel through which student views can be obtained. During the meetings of the Group, teaching staff and student representatives meet for constructive discussion on matters relating to student workload, teaching methods, the relevance of the course content and possible improvements.

2.6 Programme Counselling Teams (Academic Counselling)

Programme Counselling Teams, which include a number of academic staff teaching the respective programmes, are responsible for providing students with relevant and current information about curriculum and programme requirements, advising students on the suitable combination of subjects before subject registration in each semester, giving academic advice to students related to their studies, assisting students in solving problems encountered in their studies, and referring students to other resources for further assistance and/or information.

2.7 Student Feedback Questionnaire (SFQ)

The Student Feedback Questionnaire (SFQ) is a regular process in HKCC to collect feedback from students on each of the subjects they study. Students' participation and feedback is anonymous to their lecturers. The feedback will provide useful information for improving the quality of teaching and learning. The survey exercise will normally be conducted towards the end of the teaching period.

2.8 Channels for Communication and Feedback at HKCC

In addition to the SFQ, various channels are available for students to convey their needs and provide feedback to HKCC. Students are encouraged to make use of the following channels to voice their opinions and concerns about learning and teaching whenever needed:

- Informal meetings and discussions with Subject Leaders or Lecturers.
- Discussions with Scheme Leaders, Programme Leaders, Personal Tutors, or Student Counselling Officers.
- Student representatives on the Student/Staff Consultative Group.
- Student representatives on various committees.
- E-mail, enquiry hotline and Information Kiosk on campus.

3. Aims and Intended Learning Outcomes

Institutional Learning Outcomes

All Associate Degree and Higher Diploma programmes of HKCC are designed to help students to achieve the following six institutional learning outcomes at a standard that is achievable for a two-year full-time sub-degree programme, commensurate with the Qualifications Framework and Level 4 Generic Level Descriptors, and meets the competence level required of an associate professional:

1. **Lifelong Learner:** Graduates should recognise the need for continual learning and self-development, and be able to plan, manage and improve their own learning for future academic pursuit and other self-determined development goals.
2. **Competent Associate Professional:** Graduates should be able to integrate and apply in practice the fundamental knowledge and skills required for functioning effectively as an entry-level associate professional.
3. **Critical Thinker:** Graduates should be able to examine the validity of information, arguments, and different viewpoints, and reach a sound judgement on the basis of credible evidence and logical reasoning.
4. **Effective Communicator:** Graduates should be able to comprehend and communicate effectively in English and Chinese, orally and in writing, in professional and daily contexts.
5. **Practical Problem Solver:** Graduates should be able to identify and define problems in professional and daily contexts, and produce workable solutions to the problems.
6. **Ethical Citizen:** Graduates should acknowledge their responsibilities as associate professionals and citizens to the society and their own nation, and be able to demonstrate ethical reasoning in professional and daily contexts.

Aims of Associate Degree programmes of HKCC

The Associate Degree programmes of HKCC are based on the revised Common Descriptors propounded by the Education Bureau and are designed to provide students with fundamental generic and discipline-specific knowledge – primarily for future academic pursuit, and secondarily for entry into the job market as associate professionals.

To achieve these broad objectives, the Associate Degree Scheme in Science and Technology aims to equip students with the generic skills applicable to daily life and general science and technology-related settings as well as to broaden their horizons through acquisition of broad-based knowledge related to different aspects of life in a modern society. To assist students in their pursuit of further studies or entry into the workplace in their chosen area of specialism, students will be provided with the opportunity to specialise in particular aspects of the broad discipline of science and technology. It is also intended that some flexibility for programme transfer within the Scheme and subject elective choices be provided to students so that they could be given the opportunity to explore different options and make better-informed decisions about their future during their studies.

The Intended Learning Outcomes (ILOs) of each programme under the Scheme consist of Scheme Intended Learning Outcomes and Professional Intended Learning Outcomes.

The Scheme Intended Learning Outcomes, i.e. intended learning outcomes common to all programmes under the Scheme, centre around generic and professional competence which encompasses the attitude, knowledge, and skills expected of graduates of programmes of the Associate Degree Scheme in Science and Technology. These can be broken down into the following more specific outcomes:

Scheme Intended Learning Outcomes

Upon successful completion of respective programmes of the **Associate Degree Scheme in Science and Technology**, graduates will be able to:

S-ILO-1 IT and Quantitative Skills: Apply information technology and quantitative skills in dealing with problems encountered in daily life, tertiary level studies and general science or engineering settings.

S-ILO-2 Critical Thinking: Analyse and evaluate information, ideas, arguments and issues critically, and make decisions that are informed by evidence.

S-ILO-3 Problem Solving Skills: Identify new issues and suggest practical solutions in dealing with problems encountered in daily life, tertiary level studies and general science or engineering settings.

S-ILO-4 Communication: Communicate in both English and Chinese in professional and academic contexts.

S-ILO-5 Ethics and Professional Attitude: Articulate the social and professional responsibility as well as ethics of an associate professional.

S-ILO-6 Broadening: Describe issues and problems in a broad range of disciplines beyond their majors, using concepts and tools drawn from different disciplinary perspectives.

Professional Intended Learning Outcomes (Programme-specific Intended Learning Outcomes)

In addition to the Scheme Intended Learning Outcomes for the **Associate Degree Scheme in Science and Technology** as a whole, graduates of individual programmes will be able to:

Associate in Engineering

ENG-P-ILO-1 Solving Engineering Problems: Identify, formulate and solve engineering problems.

ENG-P-ILO-2 Understanding Engineering Constraints: Identify constraints that may influence engineering problems, systems or projects.

ENG-P-ILO-3 Engineering Design: Design engineering components, processes or systems to meet desired needs.

Associate in Information Technology

IT-P-ILO-1 Application of IT Knowledge: Integrate and apply IT knowledge to solve problems.

IT-P-ILO-2 Designing and Developing IT Systems: Design and develop IT systems with systematic approaches.

IT-P-ILO-3 Recognising IT Opportunities and Constraints: Identify potential opportunities and constraints that may influence IT issues, systems or projects.

Associate in Statistics and Computing for Business

SCB-P-ILO-1 Applying Statistics and Computing Skills: Apply fundamental knowledge of statistical analysis and computing technology in general business contexts

SCB-P-ILO-2 Statistical Analysis: Use appropriate statistical and computational methods to analyse general business data.

SCB-P-ILO-3 Problem Solving and Software Applications: Solve problems in the general business setting with the aids of appropriate computer statistical packages.

Associate of Science

SCI-P-ILO-1 Understanding Scientific Methods and Concepts: Describe and explain fundamental knowledge and techniques of selected science disciplines.

SCI-P-ILO-2 Solving Science Problems: Apply appropriate scientific methods and skills to solve problems and complete tasks.

SCI-P-ILO-3 Science Experiments and Applications: Formulate hypotheses and conduct scientific experiments for theory testing, and interpret scientific experimental results.

The relationship between 8C112 Scheme / Programme ILOs and HKCC Institutional Learning Outcomes is shown below:

Scheme/Programme ILOs	HKCC Institutional Learning Outcomes					
	Lifelong Learner	Competent Associate Professional	Critical Thinker	Effective Communicator	Practical Problem Solver	Ethical Citizen
8C112 Scheme ILOs						
S-ILO-1 IT and Quantitative Skills	✓	✓				
S-ILO-2 Critical Thinking	✓	✓	✓		✓	
S-ILO-3 Problem Solving Skills		✓			✓	
S-ILO-4 Communication	✓	✓		✓		
S-ILO-5 Ethics and Professional Attitude	✓	✓				✓
S-ILO-6 Broadening		✓	✓			
8C112-ENG Programme-specific ILOs						
ENG-P-ILO-1 Solving Engineering Problems		✓	✓		✓	
ENG-P-ILO-2 Understanding Engineering Constraints		✓			✓	✓
ENG-P-ILO-3 Engineering Design		✓	✓		✓	✓
8C112-IT Programme-specific ILOs						
IT-P-ILO-1 Application of IT Knowledge		✓	✓		✓	
IT-P-ILO-2 Designing and Developing IT Systems		✓	✓		✓	✓
IT-P-ILO-3 Recognising IT Opportunities and Constraints		✓	✓			✓
8C112-SCB Programme-specific ILOs						
SCB-P-ILO-1 Applying Statistics and Computing Skills		✓				
SCB-P-ILO-2 Statistical Analysis		✓			✓	✓
SCB-P-ILO-3 Problem Solving and Software Applications		✓	✓		✓	
8C112-AS Programme-specific ILOs						
SCI-P-ILO-1 Understanding Scientific Methods and Concepts		✓				✓
SCI-P-ILO-2 Solving Science Problems		✓	✓		✓	
SCI-P-ILO-3 Science Experiments and Applications		✓	✓		✓	✓

✓ : Making a major contribution to the stated institutional learning outcomes.

4. Minimum Entry Requirements

The minimum requirements for entry into the first year of the two-year full-time programmes under the **Associate Degree Scheme in Science and Technology** are as follows:

- (i) For Hong Kong Diploma of Secondary Education (HKDSE) Qualification Holders
 - (a) Satisfactory completion of Secondary 6; and
 - (b) Level 2 in five HKDSE subjects, including English Language and Chinese Language; and
 - (c) Each applicant is allowed to use not more than two Applied Learning subjects in the application.
- (ii) For Hong Kong Advanced Level Examination (HKALE) Qualification Holders
 - (a) Satisfactory completion of Secondary 6; and
 - (b) Grade E / Level 2 in Hong Kong Certificate of Education Examination (HKCEE) English Language and Chinese Language plus Grade E in three other HKCEE subjects; and
 - (c) Grade E in one HKALE subject; or Grade E in two HKALE (AS-level) subjects, which may include Use of English, and Chinese Language and Culture.
- (iii) For Other Qualification Holders
 - (a) The equivalents of the above requirements.
- (iv) For those who do not possess the above-mentioned qualifications but have reached the age of 25 by 1 September in the admission year, they may apply as “mature” students. Mature candidates are expected to demonstrate proficiency in English as well as suitability to study for the programme to the satisfaction of the admission panel.

5. Granting of Award

Students would be eligible for the respective Associate Degree award if they satisfy all the conditions listed below:

- (i) complete successfully a total of 60 to 75[^] credits of compulsory and elective subjects within the permissible maximum duration;
- (ii) satisfy the level, general education and discipline-specific requirements as stipulated in the respective programme curriculum; and
- (iii) attain a Grade Point Average (GPA) of 2.0 or above at the end of the programme.

[^] Refer to Section 8 for details.

6. Mode and Duration of Study

The four Associate Degree programmes within the Scheme are offered in full-time mode of study. In each academic year, there are two semesters, each of which has 13 teaching weeks and a non-mandatory summer term of 7 teaching weeks' duration. Students are normally required to complete 15 - 18 credits per semester for two consecutive years and

follow the progression study pattern specified in Section 8. Students who wish to study at their own pace instead of following the specified progression pattern will have to seek prior approval from the College. The normal duration of the programmes is two years, and the maximum duration allowed for completion is four years.

Students are required to graduate as soon as they satisfy all the conditions for award (see Section 5 above).

7. Attendance

Students are required to have attained at least 70% of attendance in each of the subjects they study; otherwise they may be disallowed to sit for the subject examination, downgraded or awarded failure grades for unsatisfactory attendance.

Regular and punctual attendance at lectures and tutorials is important. If students are late for more than 15 minutes for a tutorial or 30 minutes for a lecture, they will be regarded as absent for that particular tutorial or lecture. Students who are often absent or late for class will be given a written warning by their lecturers or tutors. In case of illness, the original doctor's certificate is required.

Students must only attend the subject groups in which they are registered. They will have their names listed on the finalised class registers after the add/drop period only if they are officially registered in that particular subject group. Attending classes in which students have not been officially registered is not allowed.

8. Curriculum Structure

The four Associate Degree programmes offered under the Scheme are in full-time mode based on a credit-based programme of study. To graduate, students are required to successfully complete, depending on qualifications at admission, a total of 60 to 75[^] credits specified as follows:

- 36 to 51[^] credits of general education (GE) subjects; and
- 24 credits of discipline-specific (DS) subjects.

8.1 Subject Level and Subject Code

All subjects offered under the Scheme are at Level 1, 2, or 3, and all subjects are of 3 credits each unless otherwise specified. The first digit of the subject code denotes the level of the subject, for example, CCN1002 is a Level-1 subject. Subjects of Levels 1 and 2 are equivalent to QF Level 4 and subjects of Level 3 are equivalent to QF Level 5.

8.2 Credit and Level Requirements

Students are required to successfully complete a total of 60 to 75 credits (equivalent to 260 to 325 QF credits), of which **at least 30 credits are at level 2 or above.**

8.3 General Education Requirements

Students pursuing an award under the Scheme are required to successfully complete eight to thirteen compulsory plus four or five elective subjects in general education (GE) studies for a total of 36 to 51 credits.

(I) GE Compulsory Subjects (8 to 13 subjects)

Students are required to successfully complete the following scheme-compulsory and programme-compulsory GE subjects:

Scheme-compulsory GE subjects (7 to 9 subjects)

- (1) CCN1004 Creative and Critical Thinking
- (2) CCN1045 Calculus
- (3) CCN1046 English for Academic Studies (Science and Technology) I
- (4) CCN1047 English for Academic Studies (Science and Technology) II
- (5) CCN2041 Applied Computing
- (6) CCN1002 Practical English for College Students* [Note 1]
- (7) CCN1003 Chinese Communication for College Students [Note 2]
- (8) CCN1048 Introduction to Linear Algebra* [Note 3]
- (9) CCN1050 Introduction to Probability and Statistics* [Note 4]

Programme-compulsory GE subjects (1 to 4 subjects)

Associate in Engineering (1 to 2 subjects)

- (1) CCN1049 Physics I
- (2) CCN1108 Foundation Physics* [Note 5]

Associate in Information Technology (1 subject)

- (1) CCN2042 Computer Programming

Associate in Statistics and Computing for Business (1 subject)

- (1) CCN2042 Computer Programming

Associate of Science (1 to 4 subjects)

- (1) CCN1049 Physics I
- (2) CCN1106 Foundation Biology* [Note 6]
- (3) CCN1107 Foundation Chemistry* [Note 7]
- (4) CCN1108 Foundation Physics* [Note 5]

*This is a foundation subject.

Note 1: **CCN1002 Practical English for College Students** will be waived for students who enter the programme with either HKALE qualification or Level 3 or above in HKDSE English Language.

Note 2: Students who are Non-Chinese Speakers (NCS), or whose Chinese standards are at junior secondary level or below, will be required to take an alternative Chinese subject, **CCN1001 Elementary Chinese**.

Note 3: **CCN1048 Introduction to Linear Algebra** will be waived for students who enter the programme with Level 2 or above in HKDSE Mathematics Extended Module 2.

Note 4: **CCN1050 Introduction to Probability and Statistics** will be waived for students who enter the programme with Level 2 or above in HKDSE Mathematics Extended Module 1.

Note 5: **CCN1108 Foundation Physics** will be waived for students who enter the programme with Level 2 or above in HKDSE Physics or Physics component in Combined Science AND Level 3 or above in any one HKDSE subject other than English Language OR Grade E or above in HKCEE Physics.

Note 6: **CCN1106 Foundation Biology** will be waived for students who enter the programme with Level 2 or above in HKDSE Biology or Biology component in Combined Science OR Grade E or above in HKCEE Biology.

Note 7: **CCN1107 Foundation Chemistry** will be waived for students who enter the programme with Level 2 or above in HKDSE Chemistry or Chemistry component in Combined Science OR Grade E or above in HKCEE Chemistry.

(II) GE Elective Subjects under Cluster Areas (4 or 5 subjects)

All students under the Scheme are required to successfully complete four GE elective subjects selected from Table 8.3.1. In addition, students of the Associate in Information Technology and Associate in Statistics and Computing for Business programmes admitted on the basis of HKDSE qualification without Level 3 or above in any one HKDSE subject other than English Language are required to take one additional GE elective subject. These GE elective subjects together with the programme-compulsory subjects stated in part (I) above should belong to at least four of the five Cluster Areas in Table 8.3.1. One of the GE elective subjects selected should be designated as China-related. For students who have already successfully completed a discipline-specific subject which is designated as China-related, they are not required to select a designated China-related GE elective subject.

Students are not allowed to take the individual programme's discipline-specific subjects (both compulsory and elective) as GE elective subjects, even though those discipline-specific subjects are listed in Table 8.3.1.

Table 8.3.1 – General Education Subjects under Cluster Areas

Cluster Area	Subject Code and Title	Level
Cluster A		
Human Nature, Relations and Development (HRD)	CCN1013 Freshman Seminar	1
	CCN1017 Introduction to Psychology	1
	CCN1018 Introduction to Sociology	1
	CCN1020 Leadership and Intra-personal Development	1
	CCN1022 Personal Growth and Development	1
	CCN2013 Exploring Human Nature	2
	CCN2015 Gender Issues	2
	CCN2025 Love, Intimacy and Identity	2
	CCN2035 Values and Ethics in Daily Life	2
	CCN2046 Music, Mind and Human Behaviour	2
	CCN2050 Creativity and Everyday Life	2
	CCN2251 Positive Psychology in Daily Life	2
Cluster B		
Community, Organisation and Globalisation (COG)	CCN1021 Personal Financial Planning	1
	CCN1041 Accounting for Non-Business Students	1
	CCN1042 Economics and Society (for Non-Business Students)	1
	CCN2001 Introduction to Chinese Political and Legal System**	2
	CCN2002 Introduction to Economics	2
	CCN2003 Introduction to Marketing 📈	2
	CCN2004 Managing Organisations	2
	CCN2005 Organisational Behaviour	2
	CCN2006 Understanding Globalisation	2
	CCN2021 Introduction to Political Science	2
	CCN2029 Professionals and the Society	2
	CCN2047 Understanding Society through Visual Arts	2
Cluster C		
History, Cultures and World Views (HCW)	CCN1010 Cultural Study through Field Trip	1
	CCN1025 The History and Culture of Hong Kong**	1
	CCN1026 Themes of Art Appreciation	1
	CCN2012 Experiencing Architecture	2
	CCN2017 Introduction to Chinese Culture**	2
	CCN2018 Introduction to Chinese Literature**	2
	CCN2020 Introduction to Philosophy	2
	CCN2024 Logic and Reasoning	2
	CCN2026 Mass Media and Culture	2
	CCN2030 Social Development in China**	2
	CCN2032 The History and Culture of East Asia**	2
	CCN2048 The History and Culture of Modern China**	2
	CCN2049 Chinese and Western Cultures**	2
	CCN2201 Chinese Family and Culture**	2
	CCN2202 Chinese Film and Fiction**	2
	CCN2203 Classical Chinese Fiction**	2
	CCN2214 The Role of Chinese Women in Historical Development**	2
	CCN2216 Wisdom in Eastern Tradition**	2
	CCN2281 Introduction to Classical Chinese Poetry**	2
	CCN2282 Chinese Creative Writing	2

Table 8.3.1 – General Education Subjects under Cluster Areas (Continued)

Cluster D		
Science, Technology and Environment (STE)	CCN1012 Foundation of Traditional Chinese Medicine**	1
	CCN1015 Healthy Living and Common Health Problems	1
	CCN1016 Introduction to Internet Technology	1
	CCN1048 Introduction to Linear Algebra (Compulsory for students who enter the programme either without Level 2 or above in HKDSE Mathematics Extended Module 2 or with HKALE qualification)	1
	CCN1049 Physics I (Compulsory for AENG & AS students)	1
	CCN1050 Introduction to Probability and Statistics (Compulsory for students who enter the programme either without Level 2 or above in HKDSE Mathematics Extended Module 1 or with HKALE qualification)	1
	CCN1051 Physics II	1
	CCN2008 Chemistry and Modern Living	2
	CCN2011 Environmental Science	2
	CCN2014 Food Hygiene and Nutritional Health	2
	CCN2023 Light, Man and Environment	2
	CCN2028 Products and Materials in Modern Society	2
	CCN2042 Computer Programming (Compulsory for AIT & ASCB students)	2
	CCN2044 Digital Visualisation in New Media	2
	CCN2045 Healthy Ageing	2
Cluster E		
Language and Communication (LC)	CCN1011 Elementary French	1
	CCN1014 Fundamental Visualisation Skills 	1
	CCN1019 Japanese I	1
	CCN1024 Putonghua for College Students	1
	CCN2007 Business Putonghua	2
	CCN2009 Chinese for Academic Purposes	2
	CCN2010 English for Workplace Communication	2
	CCN2016 Grammar in Context	2
	CCN2019 Introduction to Communication Studies	2
	CCN2022 Japanese II	2
	CCN2027 Oral Communication in English	2
	CCN2043 Digital Storytelling	2

**Designated as China-related



Continuing Education Fund approved subject. Students enrolled in this subject may apply for reimbursement of subject fee upon fulfillment of all the following conditions: (i) they have successfully completed the subject; (ii) they have attained at least 50% of the mark of the subject assessments; and (iii) they have attended at least 70% of the classes of the subject. Students are required to open a CEF account before commencement of the subject. Please note that CCN1014 Fundamental Visualisation Skills is a CEF approved subject for all programmes under the Associate Degree Scheme in Science and Technology, EXCEPT Associate in Statistics and Computing for Business programme.

8.4 Discipline-specific Requirements

8.4.1 Associate in Engineering

Apart from the general education subjects, all students under the *Associate in Engineering* programme are required to successfully complete **five discipline-specific (DS) compulsory and three DS elective subjects** for a total of 24 credits in the area of Engineering.

(I) DS Compulsory Subjects (5 subjects)

Students are required to successfully complete the following five DS compulsory subjects. These subjects provide students with a broad foundation and essential knowledge needed for various disciplines of engineering.

- (1) CCN2042 Computer Programming
- (2) CCN2249 Engineering Materials
- (3) CCN2250 Engineering Mathematics
- (4) CCN2269 Engineering Graphics and Computing
- (5) CCN3134 Engineering Economics

(II) DS Elective Subjects (3 subjects)

Students are required to successfully complete three DS elective subjects chosen freely from the pool of subjects below.

- (1) CCN1113 Land Use and Sustainable Environment
- (2) CCN1114 Managing the Built Environment
- (3) CCN2240 Database Systems
- (4) CCN2246 Basic Electricity and Electronics
- (5) CCN2248 Engineering Design Fundamentals
- (6) CCN2251 Engineering Mechanics I
- (7) CCN2262 Architectural Technology in the Built Environment
- (8) CCN2267 Electrical Services in Buildings
- (9) CCN2268 Electronic Circuits
- (10) CCN2270 Introduction to Electrical Systems
- (11) CCN2272 Logic Design
- (12) CCN2278 Transportation Engineering Fundamentals
- (13) CCN2280 Surveying
- (14) CCN2285 Textile Studies
- (15) CCN3133 Computer System Principles
- (16) CCN3135 Engineering Thermodynamics
- (17) CCN3137 Industrial Engineering Techniques and Methods
- (18) CCN3141 Quality Engineering
- (19) CCN3142 Signal and System Analysis

8.4.2 Associate in Information Technology

Apart from the general education subjects, all students under the ***Associate in Information Technology*** programme are required to successfully complete **five discipline-specific (DS) compulsory and three DS elective subjects** for a total of 24 credits in the area of Information Technology.

(I) DS Compulsory Subjects (5 subjects)

Students are required to successfully complete the following five DS compulsory subjects. These subjects provide students with the core knowledge and working skills required of information technology professionals.

- (1) CCN2238 Computer Networking
- (2) CCN2239 Data Structures
- (3) CCN2240 Database Systems
- (4) CCN2241 Discrete Structures
- (5) CCN2242 Object Oriented Programming

(II) DS Elective Subjects (3 subjects)

Students are required to successfully complete three DS elective subjects chosen freely from the pool of subjects below.

- (1) CCN2264 Computer Organisation
- (2) CCN2265 E-Business
- (3) CCN2271 Introduction to Human-Computer Interaction Methods
- (4) CCN2272 Logic Design
- (5) CCN2273 Operating Systems
- (6) CCN2279 Visual Interface and Interaction Design and Development
- (7) CCN3133 Computer System Principles
- (8) CCN3140 Programming Project
- (9) CCN3142 Signal and System Analysis
- (10) CCN3143 Software Engineering

8.4.3 Associate in Statistics and Computing for Business

Apart from the general education subjects, all students under *Associate in Statistics and Computing for Business* programme are required to complete **six discipline-specific compulsory and two discipline-specific elective subjects** for a total of 24 credits.

(I) Discipline-specific Compulsory Subjects (6 subjects)

Students are required to complete the following 6 discipline-specific compulsory subjects.

(1)	CCN2101	Financial Accounting 
(2)	CCN2237	Applied Statistical Methods
(3)	CCN2240	Database Systems
(4)	CCN2276	Statistical Data Analysis
(5)	CCN2286	Probability Distributions
(6)	CCN2287	Inferential Statistics

(II) Discipline-specific Elective Subjects (2 subjects)

Students are required to complete 2 subjects chosen freely from the pool of subjects below.

(1)	CCN2236	Advanced Linear Algebra
(2)	CCN2242	Object Oriented Programming
(3)	CCN2263	Computational Finance
(4)	CCN2266	Economic and Social Statistics
(5)	CCN2277	Survey Design and Analysis
(6)	CCN2279	Visual Interface and Interaction Design and Development
(7)	CCN3139	Operations Research for Business

 Continuing Education Fund approved subject. Students enrolled in this subject may apply for reimbursement of subject fee upon fulfillment of all the following conditions: (i) they have successfully completed the subject; (ii) they have attained at least 50% of the mark of the subject assessments; and (iii) they have attended at least 70% of the classes of the subject. Students are required to open a CEF account before commencement of the subject.

8.4.4 Associate of Science

Apart from the general education subjects, all students under the *Associate of Science* programme are required to successfully complete **two discipline-specific (DS) compulsory and six DS elective subjects** for a total of 24 credits.

(I) **DS Compulsory Subjects (2 subjects)**

Students are required to successfully complete the following two DS compulsory subjects:

- (1) CCN1109 General Biology
- (2) CCN1110 General Chemistry I

(II) **DS Elective Subjects (6 subjects)**

Students are required to successfully complete a total of six DS elective subjects chosen from the pool of subjects below, of which **at least one** of the chosen subjects must be *CCN2232 General Microbiology*, *CCN2249 Engineering Materials* or *CCN2274 Organic Chemistry*.

- (1) CCN2232 General Microbiology
- (2) CCN2249 Engineering Materials
- (3) CCN2274 Organic Chemistry
- (4) CCN1051 Physics II
- (5) CCN1111 General Chemistry II
- (6) CCN1112 Basic Laboratory Techniques and Safety
- (7) CCN2008 Chemistry and Modern Living
- (8) CCN2011 Environmental Science
- (9) CCN2014 Food Hygiene and Nutritional Health
- (10) CCN2042 Computer Programming
- (11) CCN2187 Biological Psychology
- (12) CCN2231 General Biochemistry
- (13) CCN2233 Human Biology I
- (14) CCN2234 Human Biology II
- (15) CCN2235 Introduction to Pathophysiology and Pharmacology
- (16) CCN2237 Applied Statistical Methods
- (17) CCN2238 Computer Networking
- (18) CCN2239 Data Structures
- (19) CCN2240 Database Systems
- (20) CCN2241 Discrete Structures
- (21) CCN2246 Basic Electricity and Electronics
- (22) CCN2248 Engineering Design Fundamentals
- (23) CCN2250 Engineering Mathematics
- (24) CCN2251 Engineering Mechanics I
- (25) CCN2253 Biochemical Techniques
- (26) CCN2254 Cell Biology
- (27) CCN2260 Science of Human Movement
- (28) CCN2261 Analytical Chemistry
- (29) CCN2262 Architectural Technology in the Built Environment
- (30) CCN2266 Economic and Social Statistics

- (31) CCN2268 Electronic Circuits
- (32) CCN2272 Logic Design
- (33) CCN2275 Physical Chemistry
- (34) CCN2276 Statistical Data Analysis
- (35) CCN2277 Survey Design and Analysis
- (36) CCN2284 Molecular Biology
- (37) CCN2285 Textile Studies
- (38) CCN2286 Probability Distributions
- (39) CCN2287 Inferential Statistics
- (40) CCN3135 Engineering Thermodynamics
- (41) CCN3136 Food Chemistry
- (42) CCN3138 Intermediate Environmental Science
- (43) CCN3139 Operations Research for Business

8.5 Progression Study Patterns

Students are normally required to complete a total of 15 – 18 credits per semester for two consecutive years and follow the progression study patterns specified in the tables below. Students should ensure that all the discipline-specific and general education elective subjects they have selected to study satisfy the level, discipline-specific / general education requirements. It is the sole responsibility of students to ensure that they have completed all the requirements for graduation. The offering of electives is subject to adequate enrolment and availability of resources. Some subjects may require students to complete pre-requisites before enrolment. For details on pre-requisite requirements for individual subjects, please refer to Tables 11.4.1 and 11.4.2 on pages 66 – 70. HKCC reserves the right to change the study patterns if deemed appropriate.

8.5.1 Associate in Engineering

Depending on qualifications at admission, students enrolled on the Associate in Engineering programme are required to complete a total of 60 – 69 credits and follow the respective progression study pattern as specified below.

Students admitted on the basis of HKDSE qualification

L3 ⁺ in English Language	L2 ⁺ in one of extended modules in Mathematics	L2 ⁺ in Physics or Combined Science (with a Physics component with L2 ⁺)	L3 ⁺ in any one subject other than English Language	Total No. of Credits	Study Pattern
Yes	Yes	Yes	Yes	60	Table 8.5.1a - Study Pattern I
			No	63	Table 8.5.1b - Study Pattern II
		No	Yes or No		
	No	Yes	Yes	63	Table 8.5.1c - Study Pattern III
			No	66	Table 8.5.1d - Study Pattern IV
		No	Yes or No		
No	Yes	Yes	Yes	63	Table 8.5.1e - Study Pattern V
			No	66	Table 8.5.1f - Study Pattern VI
		No	Yes or No		
	No	Yes	Yes	66	Table 8.5.1g - Study Pattern VII
			No	69	Table 8.5.1h - Study Pattern VIII
		No	Yes or No		

L2⁺ means Level 2 or above

L3⁺ means Level 3 or above

Students admitted on the basis of HKALE qualification or equivalents

Grade E or above in HKCEE Physics	Total No. of Credits	Study Pattern
Yes	63	Table 8.5.1c - Study Pattern III
No	66	Table 8.5.1d - Study Pattern IV

Table 8.5.1a - Study Pattern I (60 credits) of Associate in Engineering
for students required to take foundation subject CCN1048 (or CCN1050)

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1049 Physics I	GE
	CCN1045 Calculus	GE	CCN1048 Introduction to Linear Algebra [#] OR CCN1050 Introduction to Probability and Statistics [#]	GE GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	TWO GE Elective Subjects	GE
	CCN2041 Applied Computing	GE		
2	CCN2042 Computer Programming	DS	CCN2249 Engineering Materials	DS
	CCN2250 Engineering Mathematics	DS	CCN3134 Engineering Economics	DS
	CCN2269 Engineering Graphics and Computing	DS	ONE DS Elective Subject	DS
	TWO DS Elective Subjects	DS	TWO GE Elective Subjects	GE

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.1b - Study Pattern II (63 credits) of Associate in Engineering
for students required to take foundation subjects
CCN1048 (or CCN1050) and CCN1108

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1049 Physics I	GE
	CCN1045 Calculus	GE	CCN2041 Applied Computing	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN1048 Introduction to Linear Algebra [#] OR CCN1050 Introduction to Probability and Statistics [#]	GE GE
	CCN1108 Foundation Physics	GE	ONE GE Elective Subject	GE
2	CCN2042 Computer Programming	DS	CCN2249 Engineering Materials	DS
	CCN2250 Engineering Mathematics	DS	CCN3134 Engineering Economics	DS
	CCN2269 Engineering Graphics and Computing	DS	ONE DS Elective Subject	DS
	TWO DS Elective Subjects	DS	TWO GE Elective Subjects	GE
	ONE GE Elective Subject	GE		

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.1c - Study Pattern III (63 credits) of Associate in Engineering
for students required to take foundation subjects CCN1048 and CCN1050

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1048 Introduction to Linear Algebra	GE
	CCN1045 Calculus	GE	CCN1049 Physics I	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN1050 Introduction to Probability and Statistics	GE
	CCN2041 Applied Computing	GE	ONE GE Elective Subject	GE
2	CCN2042 Computer Programming	DS	CCN2249 Engineering Materials	DS
	CCN2250 Engineering Mathematics	DS	CCN3134 Engineering Economics	DS
	CCN2269 Engineering Graphics and Computing	DS	ONE DS Elective Subject	DS
	TWO DS Elective Subjects	DS	TWO GE Elective Subjects	GE
	ONE GE Elective Subject	GE		

Table 8.5.1d- Study Pattern IV (66 credits) of Associate in Engineering
for students required to take foundation subjects CCN1048, CCN1050 and CCN1108

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1048 Introduction to Linear Algebra	GE
	CCN1045 Calculus	GE	CCN1049 Physics I	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN1050 Introduction to Probability and Statistics	GE
	CCN1108 Foundation Physics	GE	CCN2041 Applied Computing	GE
			ONE GE Elective Subject	GE
2	CCN2042 Computer Programming	DS	CCN2249 Engineering Materials	DS
	CCN2250 Engineering Mathematics	DS	CCN3134 Engineering Economics	DS
	CCN2269 Engineering Graphics and Computing	DS	ONE DS Elective Subject	DS
	TWO DS Elective Subjects	DS	TWO GE Elective Subjects	GE
	ONE GE Elective Subject	GE		

Table 8.5.1e - Study Pattern V (63 credits) of Associate in Engineering
for students required to take foundation subjects CCN1002 and CCN1048 (or CCN1050)

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1049	Physics I	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1048	Introduction to Linear Algebra [#] OR CCN1050	GE Introduction to Probability and Statistics [#]
	CCN1045	Calculus	GE	TWO GE Elective Subjects		GE
	CCN2041	Applied Computing	GE			
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2249	Engineering Materials	DS
	CCN2042	Computer Programming	DS	CCN3134	Engineering Economics	DS
	CCN2250	Engineering Mathematics	DS	ONE DS Elective Subject		DS
	CCN2269	Engineering Graphics and Computing	DS	TWO GE Elective Subjects		GE
	TWO DS Elective Subjects		DS			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.1f - Study Pattern VI (66 credits) of Associate in Engineering
for students required to take foundation subjects
CCN1002, CCN1108, and CCN1048 (or CCN1050)

Stage	Semester 1		Semester 2	
1	CCN1002 Practical English for College Students	GE	CCN1046 English for Academic Studies (Science and Technology) I	GE
	CCN1003 Chinese Communication for College Students	GE	CCN1049 Physics I	GE
	CCN1004 Creative and Critical Thinking	GE	CCN2041 Applied Computing	GE
	CCN1045 Calculus	GE	CCN1048 Introduction to Linear Algebra [#] OR CCN1050 Introduction to Probability and Statistics [#]	GE GE
	CCN1108 Foundation Physics	GE	TWO GE Elective Subjects	GE
2	CCN1047 English for Academic Studies (Science and Technology) II	GE	CCN2249 Engineering Materials	DS
	CCN2042 Computer Programming	DS	CCN3134 Engineering Economics	DS
	CCN2250 Engineering Mathematics	DS	ONE DS Elective Subject	DS
	CCN2269 Engineering Graphics and Computing	DS	TWO GE Elective Subjects	GE
	TWO DS Elective Subjects	DS		

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.1g - Study Pattern VII (66 credits) of Associate in Engineering
for students required to take foundation subjects CCN1002, CCN1048 and CCN1050

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1049	Physics I	GE
	CCN1045	Calculus	GE	CCN1050	Introduction to Probability and Statistics	GE
	CCN2041	Applied Computing	GE	TWO GE Elective Subjects		GE
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2249	Engineering Materials	DS
	CCN2042	Computer Programming	DS	CCN3134	Engineering Economics	DS
	CCN2250	Engineering Mathematics	DS	ONE DS Elective Subject		DS
	CCN2269	Engineering Graphics and Computing	DS	TWO GE Elective Subjects		GE
	TWO DS Elective Subjects		DS			

Table 8.5.1h - Study Pattern VIII (69 credits) of Associate in Engineering
for students required to take foundation subjects
CCN1002, CCN1048, CCN1050 and CCN1108

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1049	Physics I	GE
	CCN1045	Calculus	GE	CCN1050	Introduction to Probability and Statistics	GE
	CCN1108	Foundation Physics	GE	CCN2041	Applied Computing	GE
				ONE GE Elective Subject		GE
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2249	Engineering Materials	DS
	CCN2042	Computer Programming	DS	CCN3134	Engineering Economics	DS
	CCN2250	Engineering Mathematics	DS	ONE DS Elective Subject		DS
	CCN2269	Engineering Graphics and Computing	DS	THREE GE Elective Subjects		GE
	TWO DS Elective Subjects		DS			

8.5.2 Associate in Information Technology

Depending on qualifications at admission, students enrolled on the Associate in Information Technology programme are required to complete a total of 60 – 69 credits and follow the respective progression study pattern as specified below.

Students admitted on the basis of HKDSE qualification

L3 ⁺ in English Language	L2 ⁺ in any one of extended modules in Mathematics	L3 ⁺ in any one subject other than English Language	Total No. of Credits	Study Pattern
Yes	Yes	Yes	60	Table 8.5.2a - Study Pattern I
		No	63	Table 8.5.2b - Study Pattern II
	No	Yes	63	Table 8.5.2c - Study Pattern III
		No	66	Table 8.5.2d - Study Pattern IV
No	Yes	Yes	63	Table 8.5.2e - Study Pattern V
		No	66	Table 8.5.2f - Study Pattern VI
	No	Yes	66	Table 8.5.2g - Study Pattern VII
		No	69	Table 8.5.2h - Study Pattern VIII

L2⁺ means Level 2 or above

L3⁺ means Level 3 or above

Students admitted on the basis of HKALE qualification or equivalents

Total No. of Credits	Study Pattern
63	Table 8.5.2c - Study Pattern III

Table 8.5.2a - Study Pattern I (60 credits) of Associate in Information Technology
for students required to take foundation subject CCN1048 (or CCN1050)

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1045 Calculus	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN2042 Computer Programming	GE
	CCN2041 Applied Computing	GE	TWO GE Elective Subjects	GE
	CCN1048 Introduction to Linear Algebra [#] OR CCN1050 Introduction to Probability and Statistics [#]	GE		
2	CCN2239 Data Structures	DS	CCN2238 Computer Networking	DS
	CCN2240 Database Systems	DS	THREE DS Elective Subjects	DS
	CCN2241 Discrete Structures	DS		
	CCN2242 Object Oriented Programming	DS		
	ONE GE Elective Subject	GE	ONE GE Elective Subject	GE

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.2b - Study Pattern II (63 credits) of Associate in Information Technology
for students required to take foundation subjects CCN1048 (or CCN1050)
and one additional GE elective subject

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1045 Calculus	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN2042 Computer Programming	GE
	CCN2041 Applied Computing	GE	THREE GE Elective Subjects	GE
	CCN1048 Introduction to Linear Algebra [#]	GE		
	OR CCN1050 Introduction to Probability and Statistics [#]	GE		
2	CCN2239 Data Structures	DS	CCN2238 Computer Networking	DS
	CCN2240 Database Systems	DS	THREE DS Elective Subjects	DS
	CCN2241 Discrete Structures	DS		
	CCN2242 Object Oriented Programming	DS		
	ONE GE Elective Subject	GE	ONE GE Elective Subject	GE

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.2c - Study Pattern III (63 credits) of Associate in Information Technology
for students required to take foundation subjects CCN1048 and CCN1050

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1045 Calculus	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN1048 Introduction to Linear Algebra	GE
	CCN1050 Introduction to Probability and Statistics	GE	CCN2042 Computer Programming	GE
	CCN2041 Applied Computing	GE	TWO GE Elective Subjects	GE
2	CCN2239 Data Structures	DS	CCN2238 Computer Networking	DS
	CCN2240 Database Systems	DS	THREE DS Elective Subjects	DS
	CCN2241 Discrete Structures	DS		
	CCN2242 Object Oriented Programming	DS		
	ONE GE Elective Subject	GE	ONE GE Elective Subject	GE

Table 8.5.2d - Study Pattern IV (66 credits) of Associate in Information Technology
for students required to take foundation subjects CCN1048, CCN1050
and one additional GE elective subject

Stage	Semester 1		Semester 2	
1	CCN1003 Chinese Communication for College Students	GE	CCN1045 Calculus	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN1048 Introduction to Linear Algebra	GE
	CCN1050 Introduction to Probability and Statistics	GE	CCN2042 Computer Programming	GE
	CCN2041 Applied Computing	GE	TWO GE Elective Subjects	GE
2	CCN2239 Data Structures	DS	CCN2238 Computer Networking	DS
	CCN2240 Database Systems	DS	THREE DS Elective Subjects	DS
	CCN2241 Discrete Structures	DS		
	CCN2242 Object Oriented Programming	DS		
	TWO GE Elective Subjects	GE	ONE GE Elective Subject	GE

Table 8.5.2e - Study Pattern V (63 credits) of Associate in Information Technology
for students required to take foundation subjects CCN1002 and CCN1048 (or CCN1050)

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1045	Calculus	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2042	Computer Programming	GE
	CCN2041	Applied Computing	GE	TWO GE Elective Subjects		GE
	CCN1048	Introduction to Linear Algebra [#]	GE			
	CCN1050	Introduction to Probability and Statistics [#]	GE			
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2238	Computer Networking	DS
	CCN2239	Data Structures	DS	THREE DS Elective Subjects		DS
	CCN2240	Database Systems	DS			
	CCN2241	Discrete Structures	DS			
	CCN2242	Object Oriented Programming	DS	ONE GE Elective Subject		GE
	ONE GE Elective Subject		GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.2f - Study Pattern VI (66 credits) of Associate in Information Technology
for students required to take foundation subjects
CCN1002, CCN1048 (or CCN1050) and one additional GE elective subject

Stage	Semester 1		Semester 2	
1	CCN1002 Practical English for College Students	GE	CCN1045 Calculus	GE
	CCN1003 Chinese Communication for College Students	GE	CCN1046 English for Academic Studies (Science and Technology) I	GE
	CCN1004 Creative and Critical Thinking	GE	CCN2042 Computer Programming	GE
	CCN2041 Applied Computing	GE	THREE GE Elective Subjects	GE
	CCN1048 Introduction to Linear Algebra [#]	GE		
	OR CCN1050 Introduction to Probability and Statistics [#]	GE		
2				
	CCN1047 English for Academic Studies (Science and Technology) II	GE	CCN2238 Computer Networking	DS
	CCN2239 Data Structures	DS	THREE DS Elective Subjects	DS
	CCN2240 Database Systems	DS		
	CCN2241 Discrete Structures	DS		
	CCN2242 Object Oriented Programming	DS	ONE GE Elective Subject	GE
	ONE GE Elective Subject	GE		

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.2g - Study Pattern VII (66 credits) of Associate in Information Technology
for students required to take foundation subjects CCN1002, CCN1048 and CCN1050

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1045	Calculus	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1050	Introduction to Probability and Statistics	GE	CCN2042	Computer Programming	GE
	CCN2041	Applied Computing	GE	TWO GE Elective Subjects		GE
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2238	Computer Networking	DS
	CCN2239	Data Structures	DS	THREE DS Elective Subjects		DS
	CCN2240	Database Systems	DS			
	CCN2241	Discrete Structures	DS			
	CCN2242	Object Oriented Programming	DS	ONE GE Elective Subject		GE
	ONE GE Elective Subject		GE			

Table 8.5.2h - Study Pattern VIII (69 credits) of Associate in Information Technology
for students required to take foundation subjects
CCN1002, CCN1048, CCN1050 and one additional GE elective subject

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1045	Calculus	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1050	Introduction to Probability and Statistics	GE	CCN2042	Computer Programming	GE
	CCN2041	Applied Computing	GE	TWO GE Elective Subjects		GE
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2238	Computer Networking	DS
	CCN2239	Data Structures	DS	THREE DS Elective Subjects		DS
	CCN2240	Database Systems	DS			
	CCN2241	Discrete Structures	DS			
	CCN2242	Object Oriented Programming	DS	TWO GE Elective Subjects		GE
	ONE GE Elective Subject		GE			

8.5.3 Associate in Statistics and Computing for Business

Depending on qualifications at admission, students enrolled on the Associate in Statistics and Computing for Business programme are required to complete a total of 60 – 69 credits and follow the respective progression study pattern as specified below.

Students admitted on the basis of HKDSE qualification

L3 ⁺ in English Language	L2 ⁺ in any one of extended modules in Mathematics	L3 ⁺ in any one subject other than English Language	Total No. of Credits	Study Pattern
Yes	Yes	Yes	60	Table 8.5.3a - Study Pattern I
		No	63	Table 8.5.3b - Study Pattern II
	No	Yes	63	Table 8.5.3c - Study Pattern III
		No	66	Table 8.5.3d - Study Pattern IV
No	Yes	Yes	63	Table 8.5.3e - Study Pattern V
		No	66	Table 8.5.3f - Study Pattern VI
	No	Yes	66	Table 8.5.3g - Study Pattern VII
		No	69	Table 8.5.3h - Study Pattern VIII

L2⁺ means Level 2 or above

L3⁺ means Level 3 or above

Students admitted on the basis of HKALE qualification or equivalents

Total No. of Credits	Study Pattern
63	Table 8.5.3c - Study Pattern III

Table 8.5.3a - Study Pattern I (60 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subject CCN1048 (or CCN1050)

Stage	Semester 1			Semester 2		
1	CCN1003	Chinese Communication for College Students	GE	CCN1047	English for Academic Studies (Science and Technology) II	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2041	Applied Computing	GE
	CCN1045	Calculus	GE	CCN2286	Probability Distributions	DS
	CCN1046	English for Academic Studies (Science and Technology) I	GE	CCN2287	Inferential Statistics	DS
	CCN1048	Introduction to Linear Algebra [#] OR CCN1050	GE	Introduction to Probability and Statistics [#] ONE GE Elective Subject		GE
2	CCN2042	Computer Programming	GE	CCN2240	Database Systems	DS
	CCN2101	Financial Accounting	DS	CCN2276	Statistical Data Analysis	DS
	CCN2237	Applied Statistical Methods	DS	ONE DS Elective Subject		DS
	ONE DS Elective Subject		DS	TWO GE Elective Subjects		GE
	ONE GE Elective Subject		GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.3b - Study Pattern II (63 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subjects CCN1048 (or CCN1050)
and one additional GE elective subject

Stage	Semester 1			Semester 2		
1	CCN1003	Chinese Communication for College Students	GE	CCN1047	English for Academic Studies (Science and Technology) II	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2041	Applied Computing	GE
	CCN1045	Calculus	GE	CCN2286	Probability Distributions	DS
	CCN1046	English for Academic Studies (Science and Technology) I	GE	CCN2287	Inferential Statistics	DS
	CCN1048 OR CCN1050	Introduction to Linear Algebra [#] Introduction to Probability and Statistics [#]	GE	ONE GE Elective Subject		GE
2	CCN2042	Computer Programming	GE	CCN2240	Database Systems	DS
	CCN2101	Financial Accounting	DS	CCN2276	Statistical Data Analysis	DS
	CCN2237	Applied Statistical Methods	DS	ONE DS Elective Subject		DS
	ONE DS Elective Subject		DS	TWO GE Elective Subjects		GE
	TWO GE Elective Subjects		GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.3c - Study Pattern III (63 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subjects CCN1048 and CCN1050

Stage	Semester 1			Semester 2		
1	CCN1003	Chinese Communication for College Students	GE	CCN1047	English for Academic Studies (Science and Technology) II	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1045	Calculus	GE	CCN2041	Applied Computing	GE
	CCN1046	English for Academic Studies (Science and Technology) I	GE	CCN2286	Probability Distributions	DS
	CCN1050	Introduction to Probability and Statistics	GE	CCN2287	Inferential Statistics	DS
2	CCN2042	Computer Programming	GE	CCN2240	Database Systems	DS
	CCN2101	Financial Accounting	DS	CCN2276	Statistical Data Analysis	DS
	CCN2237	Applied Statistical Methods	DS	ONE DS Elective Subject		DS
	ONE DS Elective Subject		DS	TWO GE Elective Subjects		GE
	TWO GE Elective Subjects		GE			

Table 8.5.3d - Study Pattern IV (66 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subjects CCN1048, CCN1050
and one additional GE elective subject

Stage	Semester 1			Semester 2		
1	CCN1003	Chinese Communication for College Students	GE	CCN1047	English for Academic Studies (Science and Technology) II	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1045	Calculus	GE	CCN2041	Applied Computing	GE
	CCN1046	English for Academic Studies (Science and Technology) I	GE	CCN2286	Probability Distributions	DS
	CCN1050	Introduction to Probability and Statistics	GE	CCN2287	Inferential Statistics	DS
2	CCN2042	Computer Programming	GE	CCN2240	Database Systems	DS
	CCN2101	Financial Accounting	DS	CCN2276	Statistical Data Analysis	DS
	CCN2237	Applied Statistical Methods	DS	ONE DS Elective Subject		DS
	ONE DS Elective Subject		DS	THREE GE Elective Subjects		GE
	TWO GE Elective Subjects		GE			

Table 8.5.3e - Study Pattern V (63 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subjects CCN1002 and CCN1048 (or CCN1050)

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1003	Chinese Communication for College Students	GE	CCN2041	Applied Computing	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2286	Probability Distributions	DS
	CCN1045	Calculus	GE	CCN2287	Inferential Statistics	DS
	CCN1048	Introduction to Linear Algebra [#] OR CCN1050	GE	ONE GE Elective Subject		GE
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2240	Database Systems	DS
	CCN2042	Computer Programming	GE	CCN2276	Statistical Data Analysis	DS
	CCN2101	Financial Accounting	DS	ONE DS Elective Subject		DS
	CCN2237	Applied Statistical Methods	DS	TWO GE Elective Subjects		GE
	ONE DS Elective Subject		DS			
	ONE GE Elective Subject		GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.3f - Study Pattern VI (66 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subjects
CCN1002, CCN1048 (or CCN1050) and one additional GE elective subject

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1003	Chinese Communication for College Students	GE	CCN2041	Applied Computing	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2286	Probability Distributions	DS
	CCN1045	Calculus	GE	CCN2287	Inferential Statistics	DS
	CCN1048	Introduction to Linear Algebra [#] OR CCN1050	GE	Introduction to Probability and Statistics [#] ONE GE Elective Subject		GE
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2240	Database Systems	DS
	CCN2042	Computer Programming	GE	CCN2276	Statistical Data Analysis	DS
	CCN2101	Financial Accounting	DS	ONE DS Elective Subject		DS
	CCN2237	Applied Statistical Methods	DS	THREE GE Elective Subjects		GE
	ONE DS Elective Subject		DS			
	ONE GE Elective Subject		GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.3g - Study Pattern VII (66 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subjects CCN1002, CCN1048 and CCN1050

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2041	Applied Computing	GE
	CCN1045	Calculus	GE	CCN2286	Probability Distributions	DS
	CCN1050	Introduction to Probability and Statistics	GE	CCN2287	Inferential Statistics	DS
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2240	Database Systems	DS
	CCN2042	Computer Programming	GE	CCN2276	Statistical Data Analysis	DS
	CCN2101	Financial Accounting	DS	ONE DS Elective Subject		DS
	CCN2237	Applied Statistical Methods	DS	THREE GE Elective Subjects		GE
	ONE DS Elective Subject		DS			
	ONE GE Elective Subject		GE			

Table 8.5.3h - Study Pattern VIII (69 credits) of Associate in Statistics and Computing for Business
for students required to take foundation subjects
CCN1002, CCN1048, CCN1050 and one additional GE elective subject

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1003	Chinese Communication for College Students	GE	CCN1048	Introduction to Linear Algebra	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2041	Applied Computing	GE
	CCN1045	Calculus	GE	CCN2286	Probability Distributions	DS
	CCN1050	Introduction to Probability and Statistics	GE	CCN2287	Inferential Statistics	DS
				ONE GE Elective Subjects		GE
2	CCN1047	English for Academic Studies (Science and Technology) II	GE	CCN2240	Database Systems	DS
	CCN2042	Computer Programming	GE	CCN2276	Statistical Data Analysis	DS
	CCN2101	Financial Accounting	DS	ONE DS Elective Subject		DS
	CCN2237	Applied Statistical Methods	DS	THREE GE Elective Subjects		GE
	ONE DS Elective Subject		DS			
	ONE GE Elective Subject		GE			

8.5.4 Associate of Science

Depending on qualifications at admission, students enrolled on the Associate of Science programme are required to complete a total of 60 – 75 credits and follow the respective progression study pattern as specified below.

Students admitted on the basis of HKDSE qualification

L3 ⁺ in English Language	L2 ⁺ in any one of extended modules in Mathematics	L2 ⁺ in (i) Physics or Combined Science (Physics) and (ii) Biology or Combined Science (Biology) and (iii) Chemistry or Combined Science (Chemistry)	L3 ⁺ in any one subject other than English Language	Total No. of Credits	Study Pattern
Yes	Yes	Yes	Yes	60	Table 8.5.4a - Study Pattern I
			No	63	Table 8.5.4b - Study Pattern II
		No	Yes or No	63 - 69	
	No	Yes	Yes	63	Table 8.5.4c - Study Pattern III
			No	66	Table 8.5.4d - Study Pattern IV
		No	Yes or No	66 - 72	
No	Yes	Yes	Yes	63	Table 8.5.4e - Study Pattern V
			No	66	Table 8.5.4f - Study Pattern VI
		No	Yes or No	66 - 72	
	No	Yes	Yes	66	Table 8.5.4g - Study Pattern VII
			No	69	Table 8.5.4h- Study Pattern VIII
		No	Yes or No	69 - 75	

L2⁺ means Level 2 or above

L3⁺ means Level 3 or above

Students admitted on the basis of HKALE qualification or equivalents

Grade E or above in HKCEE Physics/Chemistry/Biology	Total No. of Credits	Study Pattern
Yes	63	Table 8.5.4c - Study Pattern III
No	66 - 72	Table 8.5.4d- Study Pattern IV

Table 8.5.4a - Study Pattern I (60 credits) of Associate of Science
for students required to take foundation subject CCN1048 (or CCN1050)

Stage	Semester 1		Semester 2	
1	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1045 Calculus	GE	CCN1049 Physics I	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN2041 Applied Computing	GE
	CCN1109 General Biology	DS	CCN1048 Introduction to Linear Algebra [#] OR CCN1050 Introduction to Probability and Statistics [#]	GE GE
	CCN1110 General Chemistry I	DS	ONE DS/GE Elective Subject	DS/GE
2	CCN1003 Chinese Communication for College Students	GE	FIVE DS/GE Elective Subjects	DS/GE
	FOUR DS/GE Elective Subjects	DS/GE		

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.4b - Study Pattern II (63 – 69 credits) of Associate of Science
for students required to take foundation subjects
CCN1048 (or CCN1050), CCN1106 and/or CCN1107 and/or CCN1108

Stage	Semester 1		Semester 2	
1	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1045 Calculus	GE	CCN2041 Applied Computing	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	ONE of the following subjects in the priority listed below: CCN1108 Foundation Physics [#] CCN1049 Physics I	GE GE
	ONE of the following subjects in the priority listed below: CCN1050 Introduction to Probability and Statistics [#] CCN1108 Foundation Physics [#] CCN1048 Introduction to Linear Algebra [#]	GE GE GE	TWO of the following subjects in the priority listed below: CCN1109 General Biology CCN1110 General Chemistry I ONE DS/GE Elective Subject ONE DS Elective Subject	DS DS DS/GE DS
	TWO of the following subjects in the priority listed below: CCN1106 Foundation Biology [#] CCN1107 Foundation Chemistry [#] CCN1109 General Biology CCN1110 General Chemistry I	GE GE DS DS		
2	CCN1003 Chinese Communication for College Students	GE	FIVE DS/GE Elective Subjects (for 63 or 66 credits only)	DS/GE
	ONE of the following subjects in the priority listed below: CCN1048 Introduction to Linear Algebra [#] ONE DS/GE Elective Subject	GE DS/GE	SIX DS/GE Elective Subjects (for 69 credits only)	DS/GE
	ONE of the following subjects in the priority listed below: CCN1049 Physics I ONE DS/GE Elective Subject	GE DS/GE		
	TWO DS/GE Elective Subjects (for 63 credits only) THREE DS/GE Elective Subjects (for 66 or 69 credits only)	DS/GE DS/GE		

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

CCN1106 Foundation Biology: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Biology OR Combined Science (with Level 2 in Biology component).

CCN1107 Foundation Chemistry: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Chemistry OR Combined Science (with Level 2 in Chemistry component).

CCN1108 Foundation Physics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 3 or above in any one HKDSE subject other than English, OR they have not attained Level 2 or above in HKDSE Physics or Combined Science (with Level 2 in Physics component).

Table 8.5.4c - Study Pattern III (63 credits) of Associate of Science
for students required to take foundation subjects CCN1048 and CCN1050

Stage	Semester 1		Semester 2	
1	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1045 Calculus	GE	CCN1048 Introduction to Linear Algebra	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	CCN1049 Physics I	GE
	CCN1109 General Biology	DS	CCN1050 Introduction to Probability and Statistics	GE
	CCN1110 General Chemistry I	DS	CCN2041 Applied Computing	GE
			ONE DS/GE Elective Subject	DS/GE
2	CCN1003 Chinese Communication for College Students	GE	FIVE DS/GE Elective Subjects	DS/GE
	FOUR DS/GE Elective Subjects	DS/GE		

Table 8.5.4d - Study Pattern IV (66 – 72 credits) of Associate of Science
for students required to take foundation subjects
CCN1048, CCN1050, CCN1106 and/or CCN1107 and/or CCN1108

Stage	Semester 1		Semester 2	
1	CCN1004 Creative and Critical Thinking	GE	CCN1047 English for Academic Studies (Science and Technology) II	GE
	CCN1045 Calculus	GE	CCN2041 Applied Computing	GE
	CCN1046 English for Academic Studies (Science and Technology) I	GE	ONE of the following subjects in the priority listed below: CCN1108 Foundation Physics [#] CCN1049 Physics I	GE GE
	CCN1050 Introduction to Probability and Statistics [#]	GE	TWO of the following subjects in the priority listed below: CCN1109 General Biology CCN1110 General Chemistry I ONE DS/GE Elective Subject	DS DS DS/GE
	TWO of the following subjects in the priority listed below: CCN1106 Foundation Biology [#] CCN1107 Foundation Chemistry [#] CCN1109 General Biology CCN1110 General Chemistry I	GE GE DS DS	ONE DS Elective Subject ONE DS/GE Elective Subject (for 72 credits only)	DS DS
2	CCN1003 Chinese Communication for College Students	GE	FIVE DS/GE Elective Subjects (for 66 credits only) SIX DS/GE Elective Subjects (for 69 or 72 credits only)	DS/GE DS/GE
	CCN1048 Introduction to Linear Algebra [#]	GE		
	ONE of the following subjects in the priority listed below: CCN1049 Physics I ONE DS/GE Elective Subject	GE DS/GE		
	THREE DS/GE Elective Subjects	DS/GE		

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

CCN1106 Foundation Biology: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Biology OR Combined Science (with Level 2 in Biology component).

CCN1107 Foundation Chemistry: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Chemistry OR Combined Science (with Level 2 in Chemistry component).

CCN1108 Foundation Physics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 3 or above in any one HKDSE subject other than English, OR they have not attained Level 2 or above in HKDSE Physics or Combined Science (with Level 2 in Physics component).

Table 8.5.4e - Study Pattern V (63 credits) of Associate of Science
for students required to take foundation subjects CCN1002, CCN1048 (or CCN1050)

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1004	Creative and Critical Thinking	GE	CCN1049	Physics I	GE
	CCN1045	Calculus	GE	CCN2041	Applied Computing	GE
	CCN1109	General Biology	DS	CCN1048	Introduction to Linear Algebra [#]	GE
				OR		
				CCN1050	Introduction to Probability and Statistics [#]	GE
	CCN1110	General Chemistry I	DS	ONE DS/GE Elective Subject		DS/GE
2	CCN1003	Chinese Communication for College Students	GE	FIVE DS/GE Elective Subjects		DS/GE
	CCN1047	English for Academic Studies (Science and Technology) II	GE			
	FOUR DS/GE Elective Subjects		DS/GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Table 8.5.4f - Study Pattern VI (66 – 72 credits) of Associate of Science
for students required to take foundation subjects
CCN1002, CCN1048 or CCN1050, CCN1106 and/or CCN1107 and/or CCN1108

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2041	Applied Computing	GE
	CCN1045	Calculus	GE	ONE of the following subjects in the priority listed below: CCN1108 Foundation Physics [#] CCN1049 Physics I		GE GE
	ONE of the following subjects in the priority listed below:		GE GE GE GE	TWO of the following subjects in the priority listed below: CCN1109 General Biology CCN1110 General Chemistry I ONE DS/GE Elective Subject ONE DS Elective Subject		DS DS DS/GE DS
	CCN1050	Introduction to Probability and Statistics [#]		ONE DS/GE Elective Subject (for 72 credits only)		DS/GE
	CCN1108	Foundation Physics [#]				
	CCN1048	Introduction to Linear Algebra [#]				
	TWO of the following subjects in the priority listed below: CCN1106 Foundation Biology [#] CCN1107 Foundation Chemistry [#] CCN1109 General Biology CCN1110 General Chemistry I					
	CCN1106	Foundation Biology [#]	GE			
	CCN1107	Foundation Chemistry [#]	GE			
	CCN1109	General Biology	DS			
	CCN1110	General Chemistry I	DS			
2	CCN1003	Chinese Communication for College Students	GE	FIVE DS/GE Elective Subjects (for 66 credits only) SIX DS/GE Elective Subjects (for 69 or 72 credits only)		DS/GE DS/GE
	CCN1047	English for Academic Studies (Science and Technology) II	GE			
	ONE of the following subjects in the priority listed below: CCN1048 Introduction to Linear Algebra [#] ONE DS/GE Elective Subject		GE DS/GE			
	ONE of the following subjects in the priority listed below: CCN1049 Physics I ONE DS/GE Elective Subject		GE DS/GE			
	TWO DS/GE Elective Subjects		DS/GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

CCN1106 Foundation Biology: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Biology OR Combined Science (with Level 2 in Biology component).

CCN1107 Foundation Chemistry: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Chemistry OR Combined Science (with Level 2 in Chemistry component).

CCN1108 Foundation Physics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 3 or above in any one HKDSE subject other than English, OR they have not attained Level 2 or above in HKDSE Physics or Combined Science (with Level 2 in Physics component).

Table 8.5.4g - Study Pattern VII (66 credits) of Associate of Science
for students required to take foundation subjects CCN1002, CCN1048 and CCN1050

Stage	Semester 1		Semester 2	
1	CCN1002 Practical English for College Students	GE	CCN1046 English for Academic Studies (Science and Technology) I	GE
	CCN1004 Creative and Critical Thinking	GE	CCN1048 Introduction to Linear Algebra	GE
	CCN1045 Calculus	GE	CCN1049 Physics I	GE
	CCN1109 General Biology	DS	CCN1050 Introduction to Probability and Statistics	GE
	CCN1110 General Chemistry I	DS	CCN2041 Applied Computing	GE
			ONE DS/GE Elective Subject	DS/GE
2	CCN1003 Chinese Communication for College Students	GE	FIVE DS/GE Elective Subjects	DS/GE
	CCN1047 English for Academic Studies (Science and Technology) II	GE		
	FOUR DS/GE Elective Subjects	DS/GE		

Table 8.5.4h - Study Pattern VIII (69 – 75 credits) of Associate of Science
for students required to take foundation subjects
CCN1002, CCN1048, CCN1050, CCN1106 and/or CCN1107 and/or CCN1108

Stage	Semester 1			Semester 2		
1	CCN1002	Practical English for College Students	GE	CCN1046	English for Academic Studies (Science and Technology) I	GE
	CCN1004	Creative and Critical Thinking	GE	CCN2041	Applied Computing	GE
	CCN1045	Calculus	GE	ONE of the following subjects in the priority listed below: CCN1108 Foundation Physics [#] CCN1049 Physics I		GE GE
	CCN1050	Introduction to Probability and Statistics [#]	GE	TWO of the following subjects in the priority listed below: CCN1109 General Biology CCN1110 General Chemistry I ONE DS/GE Elective Subject ONE DS Elective Subject		DS DS DS/GE DS
	TWO of the following subjects in the priority listed below: CCN1106 Foundation Biology [#] CCN1107 Foundation Chemistry [#] CCN1109 General Biology CCN1110 General Chemistry I		GE GE DS DS	ONE DS/GE Elective Subject (for 72 credits only) TWO DS/GE Elective Subjects (for 75 credits only)		DS/GE DS/GE
2	CCN1003	Chinese Communication for College Students	GE	SIX DS/GE Elective Subjects		DS/GE
	CCN1047	English for Academic Studies (Science and Technology) II	GE			
	CCN1048	Introduction to Linear Algebra [#]	GE			
	ONE of the following subjects in the priority listed below: CCN1049 Physics I ONE DS/GE Elective Subject		GE DS/GE			
	TWO DS/GE Elective Subjects		DS/GE			

Remarks:

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

CCN1106 Foundation Biology: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Biology OR Combined Science (with Level 2 in Biology component).

CCN1107 Foundation Chemistry: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Chemistry OR Combined Science (with Level 2 in Chemistry component).

CCN1108 Foundation Physics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 3 or above in any one HKDSE subject other than English, OR they have not attained Level 2 or above in HKDSE Physics or Combined Science (with Level 2 in Physics component).

8.5.5 Summary

The following tables summarise the number of subjects needed to satisfy the general education (GE) and discipline-specific (DS) requirements of the various programmes under the Associate Degree Scheme in Science and Technology:

Students admitted on the basis of HKDSE qualification

Programmes	General Education (GE) No. of subjects		Discipline-specific (DS) No. of subjects	
	Compulsory	Elective	Compulsory	Elective
Associate in Engineering	8 to 11	4	5	3
Associate in Information Technology	8 to 10	4 or 5	5	3
Associate in Statistics and Computing for Business	8 to 10	4 or 5	6	2
Associate of Science	8 to 13	4	2	6

Students admitted on the basis of HKALE qualification or equivalents

Programmes	General Education (GE) No. of subjects		Discipline-specific (DS) No. of subjects	
	Compulsory	Elective	Compulsory	Elective
Associate in Engineering	9 to 10	4	5	3
Associate in Information Technology	9	4	5	3
Associate in Statistics and Computing for Business	9	4	6	2
Associate of Science	9 to 12	4	2	6

8.6 Programme Curriculum Maps

Tables 8.6.1 – 8.6.4 present mapping of the subjects available to students of the programmes under the Associate Degree Scheme in Science and Technology in relation to the intended learning outcomes as presented in Section 3. Each programme curriculum map denotes how each of the scheme and programme-specific outcomes is introduced, reinforced and assessed. It is worth noting that the scheme and programme-specific outcomes are achieved not just through the content of the subjects, but also through the variety of learning and teaching activities through which the contents are delivered.

Furthermore, co-curricular student development activities organised by the CPCE Student Affairs Office, the HKCC Student Development Committee, the Students' Union and other organisations also contribute to the achievement of the scheme and programme-specific outcomes.

Key to Tables 8.6.1 – 8.6.4:

- I The learning leading to the particular outcome is introduced in that subject
- R The learning leading to the particular outcome is reinforced in that subject
- A The learning leading to the particular outcome is assessed in that subject

Table 8.6.1 – Programme Curriculum Map of Associate in Engineering

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills ♦	S-ILO-2 Critical Thinking ♦	S-ILO-3 Problem Solving Skills ♦	S-ILO-4 Communication ♦	S-ILO-5 Ethics and Professional Attitude ♦	S-ILO-6 Broadening ♦	ENG-P-ILO-1 Solving Engineering Problems ♦	ENG-P-ILO-2 Understanding Engineering Constraints ♦	ENG-P-ILO-3 Engineering Design ♦
General Education Compulsory Subjects										
Scheme-compulsory Subjects										
CCN1001	Elementary Chinese				I, A					
CCN1002	Practical English for College Students				I, A					
CCN1003	Chinese Communication for College Students				I, A					
CCN1004	Creative and Critical Thinking		I, A	I						
CCN1045	Calculus	I, A	I	I, A				I		
CCN1046	English for Academic Studies (Science and Technology) I				I, A					
CCN1047	English for Academic Studies (Science and Technology) II				R, A					
CCN1048	Introduction to Linear Algebra	I, A	I	I, A				I		
CCN1050	Introduction to Probability and Statistics	I, A	I	I, A				I		
CCN2041	Applied Computing	I, A	I	I, A		I, A		I		I
Programme-compulsory Subjects										
CCN1049	Physics I							R, A	I	
CCN1108	Foundation Physics							I, A		
General Education Elective Subjects										
Subjects under Cluster of Human Nature, Relations and Development							I/R, A			
Subjects under Cluster of Community, Organisation and Globalisation										
Subjects under Cluster of History, Cultures and World Views										
Subjects under Cluster of Science, Technology and Environment										
Subjects under Cluster of Language and Communication					I, A					

Table 8.6.1 – Programme Curriculum Map of Associate in Engineering (Continued)

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills ♦	S-ILO-2 Critical Thinking ♦	S-ILO-3 Problem Solving Skills ♦	S-ILO-4 Communication ♦	S-ILO-5 Ethics and Professional Attitude ♦	S-ILO-6 Broadening ♦	ENG-P-ILO-1 Solving Engineering Problems ♦	ENG-P-ILO-2 Understanding Engineering Constraints ♦	ENG-P-ILO-3 Engineering Design ♦
Discipline-specific Compulsory Subjects										
CCN2042	Computer Programming	R, A	R	R, A				I, A	I	R
CCN2249	Engineering Materials	R		R		I		R, A	R, A	R, A
CCN2250	Engineering Mathematics	R, A	R	R, A				R, A		
CCN2269	Engineering Graphics and Computing	I, A	I	I				R, A	I, A	I
CCN3134	Engineering Economics	R	R	R		R, A			R, A	
Discipline-specific Elective Subjects										
CCN1113	Land Use and Sustainable Environment					I		I, A	R	
CCN1114	Managing the Built Environment					I		I, A	R	
CCN2240	Database Systems	R	I	I, A		R, A		I		I, A
CCN2246	Basic Electricity and Electronics	R		I				I, A	I, A	
CCN2248	Engineering Design Fundamentals		R, A	R, A				R	I	I, A
CCN2251	Engineering Mechanics I			R				R, A	R	R, A
CCN2262	Architectural Technology in the Built Environment			I		R		I, A	I, A	I, A
CCN2267	Electrical Services in Buildings			I, A		R		I, A	R	I, A
CCN2268	Electronic Circuits	I		I				I, A	I, A	I, A
CCN2270	Introduction to Electrical Systems	I	R			R		I, A	R, A	
CCN2272	Logic Design	R	R, A	I				I, A	I	I, A
CCN2278	Transportation Engineering Fundamentals		R	R		R, A		R	R, A	I, A
CCN2280	Surveying		R, A			R		R, A	R	
CCN2285	Textile Studies	I		I	I	I, A		I	I, A	
CCN3133	Computer System Principles	R, A	R					I, A	I, A	
CCN3135	Engineering Thermodynamics			R				R, A	R	R, A
CCN3137	Industrial Engineering Techniques and Methods	I		I		I		R, A	I, A	
CCN3141	Quality Engineering	I		R		I		R, A	I	
CCN3142	Signal and System Analysis	R	R	R				R, A	R, A	R

♦ For the full outcome statements, please refer to Section 3.

Table 8.6.2 – Programme Curriculum Map of Associate in Information Technology

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills ♦	S-ILO-2 Critical Thinking ♦	S-ILO-3 Problem Solving Skills ♦	S-ILO-4 Communication ♦	S-ILO-5 Ethics and Professional Attitude ♦	S-ILO-6 Broadening ♦	IT-P-ILO-1 Application of IT Knowledge ♦	IT-P-ILO-2 Designing and Developing IT Systems ♦	IT-P-ILO-3 Recognising IT Opportunities and Constraints ♦
General Education Compulsory Subjects										
Scheme-compulsory Subjects										
CCN1001	Elementary Chinese				I, A					
CCN1002	Practical English for College Students				I, A					
CCN1003	Chinese Communication for College Students				I, A					
CCN1004	Creative and Critical Thinking		I, A	I						
CCN1045	Calculus	I, A	I	I, A						
CCN1046	English for Academic Studies (Science and Technology) I				I, A					
CCN1047	English for Academic Studies (Science and Technology) II				R, A					
CCN1048	Introduction to Linear Algebra	I, A	I	I, A						
CCN1050	Introduction to Probability and Statistics	I, A	I	I, A						
CCN2041	Applied Computing	I, A	I	I, A		I, A		I, A	I	I, A
Programme-compulsory Subjects										
CCN2042	Computer Programming	R, A	R	R, A				R, A	R	R
General Education Elective Subjects										
Subjects under Cluster of Human Nature, Relations and Development							I/R, A			
Subjects under Cluster of Community, Organisation and Globalisation										
Subjects under Cluster of History, Cultures and World Views										
Subjects under Cluster of Science, Technology and Environment										
Subjects under Cluster of Language and Communication					I, A					

Table 8.6.2 – Programme Curriculum Map of Associate in Information Technology (Continued)

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills ♦	S-ILO-2 Critical Thinking ♦	S-ILO-3 Problem Solving Skills ♦	S-ILO-4 Communication ♦	S-ILO-5 Ethics and Professional Attitude ♦	S-ILO-6 Broadening ♦	IT-P-ILO-1 Application of IT Knowledge ♦	IT-P-ILO-2 Designing and Developing IT Systems ♦	IT-P-ILO-3 Recognising IT Opportunities and Constraints ♦
Discipline-specific Compulsory Subjects										
CCN2238	Computer Networking	R, A				R, A		R, A	I	
CCN2239	Data Structures	R, A		I, A				R		R, A
CCN2240	Database Systems	R	I	I, A		R, A		R	I, A	R
CCN2241	Discrete Structures	R, A	I, A	I				R	I	I
CCN2242	Object Oriented Programming	R, A		R				R, A	R, A	R
Discipline-specific Elective Subjects										
CCN2264	Computer Organisation	R, A	I	I				R, A	I, A	R
CCN2265	E-Business	R	R			R, A		R	I	R, A
CCN2271	Introduction to Human-Computer Interaction Methods	R	R	R, A				R, A	R	R, A
CCN2272	Logic Design	R	R, A	I				R, A	R, A	I
CCN2273	Operating Systems	R, A	I					R, A	I	R, A
CCN2279	Visual Interface and Interaction Design and Development	R, A	I	I				R, A	R	I, A
CCN3133	Computer System Principles	R, A	R					R, A	R, A	I
CCN3140	Programming Project	R, A	R, A	R, A	R, A	R	R	R, A	R, A	R, A
CCN3142	Signal and System Analysis	R	R	R				R, A	I	I
CCN3143	Software Engineering	R	I					R, A	R, A	R, A

♦ For the full outcome statements, please refer to Section 3.

Table 8.6.3 – Programme Curriculum Map of Associate in Statistics and Computing for Business

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills	S-ILO-2 Critical Thinking	S-ILO-3 Problem Solving Skills	S-ILO-4 Communication	S-ILO-5 Ethics and Professional Attitude	S-ILO-6 Broadening	SCB-P-ILO-1 Applying Statistics and Computing Skills	SCB-P-ILO-2 Statistical Analysis	SCB-P-ILO-3 Problem Solving and Software Applications
General Education Compulsory Subjects										
Scheme-compulsory Subjects										
CCN1001	Elementary Chinese				I, A					
CCN1002	Practical English for College Students				I, A					
CCN1003	Chinese Communication for College Students				I, A					
CCN1004	Creative and Critical Thinking		I, A	I						
CCN1045	Calculus	I, A	I	I, A				I		
CCN1046	English for Academic Studies (Science and Technology) I				I, A					
CCN1047	English for Academic Studies (Science and Technology) II				R, A					
CCN1048	Introduction to Linear Algebra	I, A	I	I, A				I		
CCN1050	Introduction to Probability and Statistics	I, A	I	I, A				I	I	
CCN2041	Applied Computing	I, A	I	I, A		I, A		I		I
Programme-compulsory Subjects										
CCN2042	Computer Programming	R, A	R	R, A				R, A	I	
General Education Elective Subjects										
Subjects under Cluster of Human Nature, Relations and Development							I/R, A			
Subjects under Cluster of Community, Organisation and Globalisation										
Subjects under Cluster of History, Cultures and World Views										
Subjects under Cluster of Science, Technology and Environment										
Subjects under Cluster of Language and Communication					I, A					

Table 8.6.3 – Programme Curriculum Map of Associate in Statistics and Computing for Business (Continued)

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills [❖]	S-ILO-2 Critical Thinking [❖]	S-ILO-3 Problem Solving Skills [❖]	S-ILO-4 Communication [❖]	S-ILO-5 Ethics and Professional Attitude [❖]	S-ILO-6 Broadening [❖]	SCB-P-ILO-1 Applying Statistics and Computing Skills [❖]	SCB-P-ILO-2 Statistical Analysis [❖]	SCB-P-ILO-3 Problem Solving and Software Applications [❖]
Discipline-specific Compulsory Subjects										
CCN2101	Financial Accounting			I		I			I, A	I
CCN2237	Applied Statistical Methods	I		I				R	R	I, A
CCN2240	Database Systems	R	I	I, A		R, A		R	R	R, A
CCN2276	Statistical Data Analysis	I				I, A		I	R, A	R, A
CCN2286	Probability Distributions	I						I, A	I	I
CCN2287	Inferential Statistics	I						R	R, A	I
Discipline-specific Elective Subjects										
CCN2236	Advanced Linear Algebra	I	R					I, A		
CCN2242	Object Oriented Programming	R, A		R				R	R	
CCN2263	Computational Finance	I						I, A	R	
CCN2266	Economic and Social Statistics	I						R	I, A	R
CCN2277	Survey Design and Analysis	R				R, A		R	R, A	R, A
CCN2279	Visual Interface and Interaction Design and Development	R, A	I	I				I	I	
CCN3139	Operations Research for Business		I					R	I	I, A

[❖] For the full outcome statements, please refer to Section 3.

Table 8.6.4 – Programme Curriculum Map of Associate of Science

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills ♦	S-ILO-2 Critical Thinking ♦	S-ILO-3 Problem Solving Skills ♦	S-ILO-4 Communication ♦	S-ILO-5 Ethics and Professional Attitude ♦	S-ILO-6 Broadening ♦	SCI-P-ILO-1 Understanding Scientific Methods and Concepts ♦	SCI-P-ILO-2 Solving Science Problems ♦	SCI-P-ILO-3 Science Experiments and Applications ♦
General Education Compulsory Subjects										
Scheme-compulsory Subjects										
CCN1001	Elementary Chinese				I, A					
CCN1002	Practical English for College Students				I, A					
CCN1003	Chinese Communication for College Students				I, A					
CCN1004	Creative and Critical Thinking		I, A	I						
CCN1045	Calculus	I, A	I	I, A					I	
CCN1046	English for Academic Studies (Science and Technology) I				I, A					
CCN1047	English for Academic Studies (Science and Technology) II				R, A					
CCN1048	Introduction to Linear Algebra	I, A	I	I, A					I	
CCN1050	Introduction to Probability and Statistics	I, A	I	I, A					I	
CCN2041	Applied Computing	I, A	I	I, A		I, A			I	I
Programme-compulsory Subjects										
CCN1106	Foundation Biology							I, A	I	I
CCN1107	Foundation Chemistry							I, A	I	I
CCN1108	Foundation Physics							I, A	I	I
CCN1049	Physics I							R, A	I	I
General Education Elective Subjects										
Subjects under Cluster of Human Nature, Relations and Development							I/R, A			
Subjects under Cluster of Community, Organisation and Globalisation										
Subjects under Cluster of History, Cultures and World Views										
Subjects under Cluster of Science, Technology and Environment										
Subjects under Cluster of Language and Communication					I, A					

Table 8.6.4 – Programme Curriculum Map of Associate of Science (Continued)

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills [Ⓢ]	S-ILO-2 Critical Thinking [Ⓢ]	S-ILO-3 Problem Solving Skills [Ⓢ]	S-ILO-4 Communication [Ⓢ]	S-ILO-5 Ethics and Professional Attitude [Ⓢ]	S-ILO-6 Broadening [Ⓢ]	SCI-P-ILO-1 Understanding Scientific Methods and Concepts [Ⓢ]	SCI-P-ILO-2 Solving Science Problems [Ⓢ]	SCI-P-ILO-3 Science Experiments and Applications [Ⓢ]
Discipline-specific Compulsory Subjects										
CCN1109	General Biology	I	I	R, A		I		R, A	I	I
CCN1110	General Chemistry I		I	I		I		R, A	I	I
Discipline-specific Elective Subjects										
CCN1051	Physics II							R, A	I	I
CCN1111	General Chemistry II		I	I		I		R, A	R	I
CCN1112	Basic Laboratory Techniques and Safety	I	I	I, A		I		R, A	I	I
CCN2008	Chemistry and Modern Living		I					I, A	I	
CCN2011	Environmental Science	I		I				I, A	I	I
CCN2014	Food Hygiene and Nutritional Health		I	R			I, A	R	I	I
CCN2042	Computer Programming	R, A	R	R, A				R	R	
CCN2187	Biological Psychology							R, A	I	
CCN2231	General Biochemistry		I			R		I, A	R	I
CCN2232	General Microbiology		I	I		R		I	R, A	R, A
CCN2233	Human Biology I		I	I				I, A	R	
CCN2234	Human Biology II		I	I				I, A	R	
CCN2235	Introduction to Pathophysiology and Pharmacology	R	R	R		I, A		I		
CCN2237	Applied Statistical Methods	I		I					R, A	
CCN2238	Computer Networking	R, A				R, A				
CCN2239	Data Structures	R, A		I, A					I	
CCN2240	Database Systems	R	I	I, A		R, A		R	I, A	
CCN2241	Discrete Structures	R, A	I, A	I				I	R	
CCN2246	Basic Electricity and Electronics	R		I				I, A	I, A	
CCN2248	Engineering Design Fundamentals		R, A	R, A				R	I	
CCN2249	Engineering Materials	R		R		I		R	R, A	R, A
CCN2250	Engineering Mathematics	R, A	R	R, A				I	I	

Table 8.6.4 – Programme Curriculum Map of Associate of Science (Continued)

Subject Code	Subject Title	S-ILO-1 IT and Quantitative Skills ♦	S-ILO-2 Critical Thinking ♦	S-ILO-3 Problem Solving Skills ♦	S-ILO-4 Communication ♦	S-ILO-5 Ethics and Professional Attitude ♦	S-ILO-6 Broadening ♦	SCI-P-ILO-1 Understanding Scientific Methods and Concepts ♦	SCI-P-ILO-2 Solving Science Problems ♦	SCI-P-ILO-3 Science Experiments and Applications ♦
CCN2251	Engineering Mechanics I			R				R, A	R, A	R
CCN2253	Biochemical Techniques	I, A				R		I	I, A	I, A
CCN2254	Cell Biology					R		I, A	R	I, A
CCN2260	Science of Human Movement					R		R, A	R	R
CCN2261	Analytical Chemistry	I		R				R, A	R	I
CCN2262	Architectural Technology in the Built Environment			I		R		I	I, A	R
CCN2266	Economic and Social Statistics	I						I, A		
CCN2268	Electronic Circuits	I		I				I, A	I, A	I
CCN2272	Logic Design	R	R, A	I				I, A	I	I
CCN2274	Organic Chemistry		I			R		R	R, A	R, A
CCN2275	Physical Chemistry			I				R, A	R	I
CCN2276	Statistical Data Analysis	I				I, A				I
CCN2277	Survey Design and Analysis	R				R, A			R, A	
CCN2284	Molecular Biology		R			I		R, A	R	R, A
CCN2285	Textile Studies	I		I	I	I, A		I, A	I	
CCN2286	Probability Distributions	I						I, A	I	
CCN2287	Inferential Statistics	I						R, A	R	I
CCN3135	Engineering Thermodynamics			R				R, A		
CCN3136	Food Chemistry			I		I, A		R, A	R, A	R
CCN3138	Intermediate Environmental Science					R		R, A	R	
CCN3139	Operations Research for Business		I					I, A		

♦ For the full outcome statements, please refer to Section 3.

9. Medium of Instruction

English is the medium of instruction (the only exceptions are for language subjects other than English and a small number of subjects which have obtained special approval to be taught and assessed in Chinese and/or other languages, due to the nature and objectives of the subjects concerned). Chinese could only be used in small group discussions/tutorials/practical sessions if and when necessary. In the presence of non-Cantonese-speaking students, English should be used all the time. Please refer to the individual subject description forms for details.

10. Teaching and Learning Methods

The teaching and learning philosophy underlying the Associate Degree Scheme in Science and Technology is based on a holistic, diversified, and flexible approach – one which enables students to achieve the intended learning outcomes. Different teaching and learning methods are used. Some are more effective in building up students' subject knowledge while others contribute more to developing students' generic skills and professional competence.

Teaching and learning methods may vary from subject to subject and may include interactive lectures, tutorials, case-based learning, problem-based learning, simulation, role plays, group work, practicum, experiential learning, fieldwork, guest talks, company visits, study tours, etc. The diversity of teaching and learning methods addresses the need to use the most appropriate ways to achieve the intended learning outcomes of each subject.

Teaching is conducted through lectures as well as tutorials and/or seminars. To enrich students' learning, subject lecturers not only play the role of introducing new concepts and imparting knowledge, but also act as facilitators to encourage students to share their ideas and experience through class discussions, case studies, oral presentations, and group activities. Laboratory sessions and/or practicum may be included for practical subjects to provide hands-on practice.

For discipline-specific subjects, more emphasis will be given to the competence-based and practical orientation of the curriculum.

11. Assessment and Examinations

11.1 Principles of Assessment

Assessment *of* learning and assessment *for* learning are both important for assuring the quality of student learning. Assessment *of* learning is to evaluate whether students have achieved the intended learning outcomes of the subjects that they have taken and have attained the overall learning outcomes of the academic programme at the end of their study at a standard appropriate to the award. Appropriate methods of assessment that are aligned with the intended learning outcomes will be designed for this purpose. The assessment methods will also enable the teacher to differentiate students' different levels of performance within the subject. Assessment *for* learning is to engage students in productive learning activities through purposefully designed assessment tasks.

Assessment will also serve as feedback to students. The assessment criteria and standards will be made explicit to students before the start of the assessment to facilitate student

learning, and feedback provided will link to the criteria and standards. Timely feedback will be provided to students so that they are aware of their progress and attainment for the purpose of improvement.

11.2 Role of Subject Assessment Review Panel

The Subject Assessment Review Panel (SARP) is responsible for monitoring the academic standard and quality of subjects and ratifying subject results. SARP reviews and finalises the subject grades at the end of each semester/term for submission to the Board of Examiners. SARP is also responsible for granting late assessments to students and deciding the form of late assessments.

SARP is chaired by the Director of HKCC or his delegate. Members of SARP include the relevant subject examiners/lecturers, and where appropriate, the Scheme Leader, Assistant Scheme Leader, Programme Leaders and other co-opted members.

11.3 Role of Board of Examiners

The Board of Examiners (BoE) meets at the end of each semester (except for Summer Term unless there are students who are eligible to graduate after completion of Summer Term subjects) to review students' progress and is responsible to the College Board of the College of Professional and Continuing Education (CPCE) for making decisions on:

1. the classification of awards to be granted to each student on completion of the programme;
2. de-registration cases; and
3. cases with extenuating circumstances.

The Board of Examiners is chaired by the Director of HKCC or his delegate. Members of the Board of Examiners include the Scheme Leader, Assistant Scheme Leader, Programme Leaders, and other co-opted members.

11.4 Assessment Methods

Students' performance in a subject shall be assessed by continuous assessment and/or examinations, as deemed appropriate. Where both continuous assessment and examinations are used, the weighting of each in the overall subject grade has been clearly stated in this definitive scheme document. **To pass a subject, students must obtain a pass grade in both continuous assessment AND examination components, if any.** Satisfying (or otherwise) the attendance requirement as stipulated in Section 7 will also affect the pass and failure of a student in a subject.

All assessment methods will be designed on the basis that they can assess the extent to which students have attained the intended learning outcomes. The methods may include objective questions, open-ended essays, group projects, field study, laboratory work, presentations, reflective journals, learning portfolios, case study, and various forms of classroom participation.

At the beginning of each semester, the subject lecturer will inform students of the details of the assessment methods to be used within the assessment framework as specified in the definitive scheme document.

Table 11.4.1 - Assessment Weighting (General Education Subjects)

Group / Area	Subject Code	Subject Title	Continuous Assessment (%)	Exam (%)	Prerequisite	Exclusion
Compulsory Subjects						
	CCN1001	Elementary Chinese	100	0	Nil	CCN1003
	CCN1002	Practical English for College Students	100	0	Nil	Nil
	CCN1003	Chinese Communication for College Students	100	0	Nil	CCN1001
	CCN1004	Creative and Critical Thinking	60	40	Nil	Nil
	CCN1045	Calculus	40	60	Nil	Nil
	CCN1046	English for Academic Studies (Science and Technology) I	100	0	^	Nil
	CCN1047	English for Academic Studies (Science and Technology) II	100	0	CCN1046	Nil
	CCN1048	Introduction to Linear Algebra	40	60	Nil	Nil
	CCN1049	Physics I	40	60	Nil	Nil
	CCN1050	Introduction to Probability and Statistics	40	60	Nil	Nil
	CCN1106	Foundation Biology	50	50	Nil	Nil
	CCN1107	Foundation Chemistry	50	50	Nil	Nil
	CCN1108	Foundation Physics	40	60	Nil	Nil
	CCN2041	Applied Computing	40	60	Nil	Nil
	CCN2042	Computer Programming	50	50	Nil	Nil
Elective Subjects - Cluster A						
Human Nature, Relations and Development (HRD)	CCN1013	Freshman Seminar	100	0	Nil	Nil
	CCN1017	Introduction to Psychology	60	40	Nil	CCN2039
	CCN1018	Introduction to Sociology	60	40	Nil	CCN2040
	CCN1020	Leadership and Intra-personal Development	100	0	Nil	CCN1022
	CCN1022	Personal Growth and Development	100	0	Nil	CCN1020 CCN2037
	CCN2013	Exploring Human Nature	100	0	Nil	Nil
	CCN2015	Gender Issues	100	0	Nil	Nil
	CCN2025	Love, Intimacy and Identity	60	40	Nil	Nil
	CCN2035	Values and Ethics in Daily Life	100	0	Nil	Nil
	CCN2046	Music, Mind and Human Behaviour	100	0	Nil	Nil
	CCN2050	Creativity and Everyday Life	100	0	Nil	Nil
	CCN2051	Positive Psychology in Daily Life	100	0	Nil	Nil
Elective Subjects - Cluster B						
Community, Organisation and Globalisation (COG)	CCN1021	Personal Financial Planning	50	50	Nil	Nil
	CCN1041	Accounting for Non-Business Students	50	50	Nil	CCN2101
	CCN1042	Economics and Society (for Non-Business Students)	50	50	Nil	CCN2002
	CCN2001	Introduction to Chinese Political and Legal System**	50	50	Nil	Nil
	CCN2002	Introduction to Economics	50	50	Nil	CCN1042
	CCN2003	Introduction to Marketing 🏠	50	50	Nil	Nil
	CCN2004	Managing Organisations	50	50	Nil	CCN3107
	CCN2005	Organisational Behaviour	50	50	Nil	Nil
	CCN2006	Understanding Globalisation	50	50	Nil	CCN3118
	CCN2021	Introduction to Political Science	60	40	Nil	Nil
	CCN2029	Professionals and the Society	60	40	Nil	Nil
	CCN2047	Understanding Society through Visual Arts	100	0	Nil	Nil
Elective Subjects - Cluster C						
History, Cultures and World Views (HCW)	CCN1010	Cultural Study through Field Trip	100	0	Nil	Nil
	CCN1025	The History and Culture of Hong Kong**	50	50	Nil	CCN2036
	CCN1026	Themes of Art Appreciation	50	50	Nil	Nil
	CCN2012	Experiencing Architecture	100	0	Nil	Nil
	CCN2017	Introduction to Chinese Culture**	50	50	Nil	Nil
	CCN2018	Introduction to Chinese Literature**	60	40	Nil	Nil
	CCN2020	Introduction to Philosophy	60	40	Nil	Nil
	CCN2024	Logic and Reasoning	50	50	CCN1004 or CCN1035 or CCN1036 or equivalent	Nil
	CCN2026	Mass Media and Culture	60	40	Nil	Nil
	CCN2030	Social Development in China**	100	0	Nil	Nil
	CCN2032	The History and Culture of East Asia**	50	50	Nil	Nil
	CCN2048	The History and Culture of Modern China**	50	50	Nil	CCN2033
	CCN2049	Chinese and Western Cultures**	50	50	Nil	CCN2034

Table 11.4.1 - Assessment Weighting (General Education Subjects) (Continued)

Group / Area	Subject Code	Subject Title	Continuous Assessment (%)	Exam (%)	Prerequisite	Exclusion
GE Elective Subjects - Cluster C (Continued)						
History, Cultures and World Views (HCW)	CCN2201	Chinese Family and Culture**	100	0	Nil	Nil
	CCN2202	Chinese Film and Fiction**	50	50	Nil	Nil
	CCN2203	Classical Chinese Fiction**	50	50	Nil	Nil
	CCN2214	The Role of Chinese Women in Historical Development**	50	50	Nil	Nil
	CCN2216	Wisdom in Eastern Tradition**	50	50	Nil	Nil
	CCN2281	Introduction to Classical Chinese Poetry**	50	50	Nil	Nil
	CCN2282	Chinese Creative Writing	100	0	Nil	Nil
Elective Subjects - Cluster D						
Science, Technology and Environment (STE)	CCN1012	Foundation of Traditional Chinese Medicine**	100	0	Nil	CC3132
	CCN1015	Healthy Living and Common Health Problems	60	40	Nil	Nil
	CCN1016	Introduction to Internet Technology	50	50	Nil	Nil
	CCN1048	Introduction to Linear Algebra (Compulsory for students who enter the programme either without Level 2 or above in HKDSE Mathematics Extended Module 2 or with HKALE qualification)	40	60	Nil	Nil
	CCN1049	Physics I (Compulsory for AENG & AS students)	40	60	Nil	Nil
	CCN1050	Introduction to Probability and Statistics (Compulsory for students who enter the programme either without Level 2 or above in HKDSE Mathematics Extended Module 1 or with HKALE qualification)	40	60	Nil	Nil
	CCN1051	Physics II	40	60	Nil	Nil
	CCN2008	Chemistry and Modern Living	50	50	Nil	Nil
	CCN2011	Environmental Science	60	40	Nil	Nil
	CCN2014	Food Hygiene and Nutritional Health	50	50	Nil	Nil
	CCN2023	Light, Man and Environment	50	50	Nil	Nil
	CCN2028	Products and Materials in Modern Society	50	50	Nil	Nil
	CCN2042	Computer Programming (Compulsory for AIT & ASCB students)	50	50	Nil	Nil
	CCN2044	Digital Visualisation in New Media	100	0	Nil	Nil
	CCN2045	Healthy Ageing	60	40	Nil	CCN2259
Elective Subjects - Cluster E						
Language and Communication (LC)	CCN1011	Elementary French	50	50	Nil	Nil
	CCN1014	Fundamental Visualisation Skills 	100	0	Nil	Nil
	CCN1019	Japanese I	60	40	▲	Nil
	CCN1024	Putonghua for College Students	60	40	Nil	Nil
	CCN2007	Business Putonghua	60	40	CCN1024@	Nil
	CCN2009	Chinese for Academic Purposes	100	0	Nil	Nil
	CCN2010	English for Workplace Communication	100	0	Nil	CCN2182
	CCN2016	Grammar in Context	50	50	Nil	Nil
	CCN2019	Introduction to Communication Studies	50	50	Nil	Nil
	CCN2022	Japanese II	60	40	CCN1019&	Nil
	CCN2027	Oral Communication in English	100	0	Nil	Nil
	CCN2043	Digital Storytelling	100	0	Nil	Nil

** Designated as China-related.

^ The prerequisite of CCN1046 English for Academic Studies (Science and Technology) I is CCN1002 Practical English for College Students or Level 3 or above in HKDSE English Language; or its equivalents.

▲ Ability to understand, read and write Chinese characters (漢字).

@ or a minimum of 39 hours' training in Putonghua and/or an equivalent level of proficiency in Putonghua, which must be supported by an official document.

& or a minimum of 39 hours' training in Japanese and/or an equivalent level of proficiency in Japanese, which must be supported by an official document.

 Continuing Education Fund approved subject. Students enrolled in this subject may apply for reimbursement of subject fee upon fulfillment of all the following conditions: (i) they have successfully completed the subject; (ii) they have attained at least 50% of the mark of the subject assessments; and (iii) they have attended at least 70% of the classes of the subject. Students are required to open a CEF account before commencement of the subject. Please note that CCN1014 Fundamental Visualisation Skills is a CEF approved subject for all programmes under the Associate Degree Scheme in Science and Technology, EXCEPT Associate in Statistics and Computing for Business programme.

Subject description forms can be obtained via my.HKCC accessible through HKCC website at www.hkcc-polyu.edu.hk.

Table 11.4.2 - Assessment Weighting (Discipline-specific Subjects)

Programme	Subject Code	Subject Title	Continuous Assessment (%)	Exam (%)	Prerequisite	Exclusion
Compulsory Subjects						
Associate in Engineering	CCN2042	Computer Programming	50	50	Nil	Nil
	CCN2249	Engineering Materials	40	60	Nil	Nil
	CCN2250	Engineering Mathematics	40	60	Nil	Nil
	CCN2269	Engineering Graphics and Computing	100	0	Nil	Nil
	CCN3134	Engineering Economics	40	60	Nil	Nil
Associate in Information Technology	CCN2238	Computer Networking	40	60	Nil	Nil
	CCN2239	Data Structures	60	40	CCN2042	Nil
	CCN2240	Database Systems	50	50	Nil	Nil
	CCN2241	Discrete Structures	40	60	Nil	Nil
	CCN2242	Object Oriented Programming	60	40	CCN2042	Nil
Associate in Statistics and Computing for Business	CCN2101	Financial Accounting 📊	40	60	Nil	CCN1041
	CCN2237	Applied Statistical Methods	40	60	Nil	Nil
	CCN2240	Database Systems	50	50	Nil	Nil
	CCN2276	Statistical Data Analysis	60	40	CCN2244 or CCN2287	Nil
	CCN2286	Probability Distributions	40	60	CCN1050 ▼	Nil
	CCN2287	Inferential Statistics	40	60	CCN1050 ▼	Nil
Associate of Science	CCN1109	General Biology	50	50	Nil	Nil
	CCN1110	General Chemistry I	50	50	Nil	Nil
Elective Subjects						
Associate in Engineering	CCN1113	Land Use and Sustainable Environment	50	50	Nil	Nil
	CCN1114	Managing the Built Environment	50	50	Nil	Nil
	CCN2240	Database Systems	50	50	Nil	Nil
	CCN2246	Basic Electricity and Electronics	40	60	Nil	Nil
	CCN2248	Engineering Design Fundamentals	50	50	Nil	Nil
	CCN2251	Engineering Mechanics I	40	60	CCN1045	Nil
	CCN2262	Architectural Technology in the Built Environment	40	60	Nil	Nil
	CCN2267	Electrical Services in Buildings	40	60	Nil	Nil
	CCN2268	Electronic Circuits	40	60	CCN2246	Nil
	CCN2270	Introduction to Electrical Systems	40	60	Nil	Nil
	CCN2272	Logic Design	50	50	Nil	Nil
	CCN2278	Transportation Engineering Fundamentals	40	60	Nil	Nil
	CCN2280	Surveying	100	0	Nil	Nil
	CCN2285	Textile Studies	50	50	Nil	Nil
	CCN3133	Computer System Principles	50	50	Nil	CCN2273
	CCN3135	Engineering Thermodynamics	40	60	CCN2250	Nil
	CCN3137	Industrial Engineering Techniques and Methods	40	60	Nil	Nil
	CCN3141	Quality Engineering	40	60	Nil	Nil
	CCN3142	Signal and System Analysis	40	60	Nil	Nil

Table 11.4.2 - Assessment Weighting (Discipline-specific Subjects) (Continued)

Programme	Subject Code	Subject Title	Continuous Assessment (%)	Exam (%)	Prerequisite	Exclusion
Associate in Information Technology	CCN2264	Computer Organisation	50	50	Nil	Nil
	CCN2265	E-Business	60	40	CCN2041	Nil
	CCN2271	Introduction to Human-Computer Interaction Methods	60	40	Nil	Nil
	CCN2272	Logic Design	50	50	Nil	Nil
	CCN2273	Operating Systems	50	50	CCN2042	CCN3133
	CCN2279	Visual Interface and Interaction Design and Development	60	40	CCN2042	Nil
	CCN3133	Computer System Principles	50	50	Nil	CCN2273
	CCN3140	Programming Project	100	0	CCN2042	Nil
	CCN3142	Signal and System Analysis	40	60	Nil	Nil
	CCN3143	Software Engineering	50	50	CCN2042	Nil
Associate in Statistics and Computing for Business	CCN2236	Advanced Linear Algebra	40	60	CCN1048▽	Nil
	CCN2242	Object Oriented Programming	60	40	CCN2042	Nil
	CCN2263	Computational Finance	40	60	Nil	Nil
	CCN2266	Economic and Social Statistics	60	40	Nil	Nil
	CCN2277	Survey Design and Analysis	40	60	CCN2244 or CCN2287	Nil
	CCN2279	Visual Interface and Interaction Design and Development	60	40	CCN2042	Nil
	CCN3139	Operations Research for Business	40	60	Nil	Nil
Associate of Science	CCN1051	Physics II	40	60	Nil	Nil
	CCN1111	General Chemistry II	50	50	CCN1110	Nil
	CCN1112	Basic Laboratory Techniques and Safety	100	0	Nil	Nil
	CCN2008	Chemistry and Modern Living	50	50	Nil	Nil
	CCN2011	Environmental Science	60	40	Nil	Nil
	CCN2014	Food Hygiene and Nutritional Health	50	50	Nil	Nil
	CCN2042	Computer Programming	50	50	Nil	Nil
	CCN2187	Biological Psychology	50	50	CCN1017	Nil
	CCN2231	General Biochemistry	50	50	Nil	Nil
	CCN2232	General Microbiology	60	40	Nil	Nil
	CCN2233	Human Biology I	60	40	Nil	Nil
	CCN2234	Human Biology II	60	40	Nil	Nil
	CCN2235	Introduction to Pathophysiology and Pharmacology	60	40	CCN2233 & CCN2234	Nil
	CCN2237	Applied Statistical Methods	40	60	Nil	Nil
	CCN2238	Computer Networking	40	60	Nil	Nil
	CCN2239	Data Structures	60	40	CCN2042	Nil
	CCN2240	Database Systems	50	50	Nil	Nil
	CCN2241	Discrete Structures	40	60	Nil	Nil
	CCN2246	Basic Electricity and Electronics	40	60	Nil	Nil
	CCN2248	Engineering Design Fundamentals	50	50	Nil	Nil
	CCN2249	Engineering Materials	40	60	Nil	Nil
	CCN2250	Engineering Mathematics	40	60	Nil	Nil

Table 11.4.2 - Assessment Weighting (Discipline-specific Subjects) (Continued)

Programme	Subject Code	Subject Title	Coursework (%)	Exam (%)	Prerequisite	Exclusion
Associate of Science	CCN2251	Engineering Mechanics I	40	60	CCN1045	Nil
	CCN2253	Biochemical Techniques	50	50	CCN2231	Nil
	CCN2254	Cell Biology	50	50	CCN1109 or CCN2233	Nil
	CCN2260	Science of Human Movement	100	0	CCN2233	Nil
	CCN2261	Analytical Chemistry	50	50	Nil	Nil
	CCN2262	Architectural Technology in the Built Environment	40	60	Nil	Nil
	CCN2266	Economic and Social Statistics	60	40	Nil	Nil
	CCN2268	Electronic Circuits	40	60	CCN2246	Nil
	CCN2272	Logic Design	50	50	Nil	Nil
	CCN2274	Organic Chemistry	50	50	Nil	Nil
	CCN2275	Physical Chemistry	50	50	Nil	Nil
	CCN2276	Statistical Data Analysis	60	40	CCN2244 or CCN2287	Nil
	CCN2277	Survey Design and Analysis	40	60	CCN2244 or CCN2287	Nil
	CCN2284	Molecular Biology	60	40	CCN1109	Nil
	CCN2285	Textile Studies	50	50	Nil	Nil
	CCN2286	Probability Distributions	40	60	CCN1050▼	Nil
	CCN2287	Inferential Statistics	40	60	CCN1050▼	Nil
	CCN3135	Engineering Thermodynamics	40	60	CCN2250	Nil
	CCN3136	Food Chemistry	50	50	Nil	Nil
	CCN3138	Intermediate Environmental Science	60	40	Nil	Nil
	CCN3139	Operations Research for Business	40	60	Nil	Nil

▼ or HKDSE Mathematics Extended Module 2.

▼ or HKDSE Mathematics Extended Module 1.

 Continuing Education Fund approved subject. Students enrolled in this subject may apply for reimbursement of subject fee upon fulfillment of all the following conditions: (i) they have successfully completed the subject; (ii) they have attained at least 50% of the mark of the subject assessments; and (iii) they have attended at least 70% of the classes of the subject. Students are required to open a CEF account before commencement of the subject. Please note that CCN1014 Fundamental Visualisation Skills is a CEF approved subject for all programmes under the Associate Degree Scheme in Science and Technology, EXCEPT Associate in Statistics and Computing for Business programme.

Subject description forms can be obtained via *my.HKCC* accessible through HKCC website at www.hkcc-polyu.edu.hk.

11.5 Academic Probation

If a student's cumulative Grade Point Average (GPA) is below 2.0, he/she will be put on academic probation in the following semester. Once the student is able to pull his/her cumulative GPA up to 2.0 or above at the end of the semester, the status of "academic probation" will be lifted. The status of "academic probation" will be reflected in the assessment result notification but not in the transcript of studies.

Students on academic probation are required to take a reduced study load to help improve their academic performance. They should seek consultation from the Programme Leader on their study load in the probation period.

11.6 Progression and De-registration

Students will normally have "progressing" status unless they fall within the following categories, any one of which may be regarded as grounds for de-registration from the programme:

- (1) they have exceeded the maximum period of registration for that programme as specified in this document; or
- (2) their cumulative GPA is lower than 2.0 for two consecutive semesters and their Semester GPA in the second semester is also below 2.0; or
- (3) their cumulative GPA is lower than 2.0 for three consecutive semesters.

When students fall within the categories as stipulated above, the Board of Examiners shall de-register the student from the programme without exception.

The progression of students to the following academic year will not be affected by the GPA obtained in Summer Term, unless Summer Term study is mandatory for all students of the programme and constitutes a requirement for graduation, and is so specified in this document.

Notwithstanding the above, the BoE has the discretion to de-register a student with extremely poor academic performance before the time specified in category (2) or (3) above.

11.7 Grading

All subjects will be graded on the basis of Criterion-Referenced Assessment (CRA). Grades will reflect the extent to which a student has attained the Intended Learning Outcomes. Grades are to be interpreted as follows:

<i>Subject grade</i>	<i>Grade point</i>	<i>Short description</i>	<i>Elaboration on subject grading description</i>
A+	4.5	Exceptionally Outstanding	The student's work is exceptionally outstanding. It exceeds the intended subject learning outcomes in all regards.
A	4.0	Outstanding	The student's work is outstanding. It exceeds the intended subject learning outcomes in nearly all regards.
B+	3.5	Very Good	The student's work is very good. It exceeds the intended subject learning outcomes in most regards.
B	3.0	Good	The student's work is good. It exceeds the intended subject learning outcomes in some regards.
C+	2.5	Wholly Satisfactory	The student's work is wholly satisfactory. It fully meets the intended subject learning outcomes.
C	2.0	Satisfactory	The student's work is satisfactory. It largely meets the intended subject learning outcomes.
D+	1.5	Barely Satisfactory	The student's work is barely satisfactory. It marginally meets the intended subject learning outcomes.
D	1.0	Barely Adequate	The student's work is barely adequate. It meets the intended subject learning outcomes only in some regards.
F	0	Inadequate	The student's work is inadequate. It fails to meet many of the intended subject learning outcomes.

“F” is a subject failure grade, whilst all others (“D” to “A+”) are subject passing grades. No credit will be earned if a subject is failed.

11.8 Grade Point Average

There are different types of Grade Point Average (GPA) as described below. All of them will be shown in the transcript of studies.

GPA (Cumulative GPA)

At the end of each semester/term, a Grade Point Average (Cumulative GPA) will be computed as follows, and based on the grade point of all the subjects taken by the student up to and including the latest semester/term:

$$GPA = \frac{\sum_n \text{Subject Grade Point} \times \text{Subject Credit Value}}{\sum_n \text{Subject Credit Value}}$$

where n = number of all subjects (inclusive of failed subjects) taken by the student up to and including the latest semester/term. For subjects which have been retaken, only the grade point obtained in the final attempt will be included in the GPA calculation.

Exempted, ungraded or incomplete subjects, and subjects for which credit transfer has been approved without a grade assigned to it, will be excluded from the GPA calculation. In addition, subjects from which a student has been allowed to withdraw (i.e. those with the grade “W”) will be excluded. A student who is absent from an examination will be given a failure grade. The respective subject will be included in the GPA calculation and will be counted as “zero” grade point. The GPA is thus the unweighted cumulative average calculated for all relevant subjects, including failed subjects (if a failed subject is retaken, only the grade obtained in the final attempt will be included) taken by a student from the start of the programme to a particular reference point in time. The GPA is an indicator of overall performance and is capped at 4.0.

Semester GPA

Calculation of Semester GPA is similar to the rules for GPA as described above, except that only subjects taken in that semester, including retaken subjects, will be included. This Semester GPA will be used to determine students’ eligibility to progress to the next semester alongside with the Cumulative GPA. However, the Semester GPA calculated for the Summer Term will not be used for this purpose, unless the Summer Term study is mandatory for all students of the programme concerned and constitutes part of the graduation requirements.

Award GPA

When a student has satisfied the requirements for award, an Award GPA will be calculated to determine his/her award classification.

The calculation of Award GPA is similar to the rules for GPA, except that only subjects **within** the programme curriculum **requirement** will be included. General education subjects for fulfilling the award requirements will also be included in the calculation of Award GPA.

Any subjects passed after the graduation requirement has been met or subjects taken on top of the prescribed credit requirements for an award shall not be taken into account in the grade point calculation for award classification. However, if a student attempts

more elective subjects than the requirement for graduation in or before the semester within which he/she becomes eligible for an award, the elective subjects with a higher grade/contribution (with the exception of the additional subjects taken out of interest and not for satisfying the award requirements) shall be counted in the grade point calculation for award classification (i.e. the subjects attempted with a lower grade/contribution will be excluded from the grade point calculation for award classification), irrespective of when the excessive elective subjects are enrolled. The same principle applies to mutually exclusive compulsory subjects.

11.9 Retaking Subjects

Students may retake any subject for the purpose of improving their grade without having to seek approval, but they must retake a compulsory subject which they have failed, i.e. obtained an F grade. If the failed subject is a mutually exclusive compulsory subject, a student may either retake that same subject or another mutually exclusive compulsory subject. If the failed subject is an elective subject, a student may retake that same subject or another elective subject from the same elective subject set.

Students wishing to retake passed subjects will be accorded a lower priority than those who are required to retake (due to failure in a compulsory subject) and can only do so if places are available, as well as the maximum study load of 21 credits per semester is not exceeded. Furthermore, if a student is eligible to graduate upon completion of all graduation requirements of his/her programme of study, he/she will not be allowed to retake any subject for the purpose of improving the subject grade or GPA.

The number of retakes of a subject is not restricted. While only the grade obtained in the final attempt of retaking (even if the retake grade is lower than the original grade for the originally passed subject) will be included in the calculation of the Grade Point Average (Cumulative GPA) and the Grade Point Average for award classification (Award GPA), the grades obtained in previous attempts will also be reflected in the transcript of studies. This applies to the retake of the same subject only, and in cases where students take another subject to replace a failed subject, the fail grade will be retained and taken into account in the calculation of the Cumulative GPA, despite the passing of the other subject. If a student retakes a previously passed subject and fails in the latest attempt, the credits accumulated for passing the subject in a previous attempt will remain valid for satisfying the credit requirement for award. However, the fail grade in the latest attempt will be included in the calculation of the Cumulative GPA and Award GPA.

11.10 Taking Additional Subjects after Graduation

Students may take additional subjects in the following semester for broadening purpose, after they have fulfilled the graduation requirements. In the case when the Summer Term is mandatory for all students of a programme, students who have fulfilled the graduation requirements in Semester Two will be allowed to take additional subjects in Semester One of the following academic year, and not necessarily during the Summer Term. However, students will be subject to the maximum study load of 21 credits per semester and the availability of places in the subjects concerned, and their enrolment will be as subject-based students only. The grades earned for subject-based students who have fulfilled all the graduation requirements will not be calculated towards the students' Cumulative GPA or Award GPA and a separate transcript will be issued.

11.11 Plagiarism and Dishonesty

Students should be honest in performing academic assignments and during examinations/tests. The College takes a very serious view against dishonesty in examinations/assessment and plagiarism in continuous assessment. In particular, all students should read the sections on “Conduct of Examinations” and “Academic Studies” in the HKCC Student Handbook.

Penalties ranging from disqualification to expulsion will be imposed in cases of proven dishonesty in examinations/assessment and/or plagiarism.

11.12 Academic Dishonesty and Disciplinary Actions

1. For students who have been awarded a failure grade as a result of disciplinary action, a remark “#” will be recorded against the concerned subject failure grade denoting “Disqualification of result due to academic dishonesty”. The remark will appear on the assessment result notification and transcript of studies until the students leave HKCC.

The remark will normally cover the following misconduct cases:

- cheating in assessment work, tests or examinations
- aiding academic dishonesty
- plagiarism
- violating rules governing the conduct of examinations that are related to possible cheating

Students who have been recorded with the remark will also be subject to the penalty of the lowering of award classification by one level. The minimum of downgraded overall result will be kept at a pass.

2. Students who have committed disciplinary offences (covering both academic and non-academic related matters) will be put on “disciplinary probation” and this will be shown on the assessment result notification, transcript of studies and testimonial during the probation period until the students leave HKCC.

Students who have been put on disciplinary probation will be deprived of certain privileges.

3. Other penalties may also be imposed on students who have committed academic dishonesty and/or disciplinary offences. For details, please refer to the HKCC Student Handbook.
4. HKCC reserves the right to withhold the issuance of any certificate of study to a student who has unsettled matters with the College, including those pending disciplinary action.

11.13 Guidelines for Award Classification

In using these guidelines for award classification, the BoE shall exercise its judgement in coming to its conclusions as to the award for each student, and where appropriate, may use other relevant information. The following are guidelines only for the BoE's reference in determining award classifications:

Classification	Guidelines
Distinction	The student's performance/attainment is outstanding, and identifies him or her as exceptionally able in the field covered by the programme in question.
Credit	The student has reached a standard of performance/attainment which is more than satisfactory but less than outstanding.
Pass	The student has reached a standard of performance/attainment ranging from just adequate to satisfactory.

11.14 Student Appeals

A student may appeal on academic grounds. However, a student's disagreement with the marking done by the Subject Lecturer, or with a decision made by SARP/BoE, is *not* in itself an adequate ground for an appeal. **The detailed procedures for appeal** are set out in the HKCC Student Handbook.

11.15 Exceptional Circumstances

Absence from an Assessment Component

If a student is unable to complete all the assessment components of a subject, due to illness or other circumstances which are beyond his/her control and considered by the Subject Assessment Review Panel (SARP) as legitimate, SARP will determine whether the student will have to complete a late assessment and, if so, by what means. This late assessment shall take place at the earliest opportunity, and before the commencement of the following academic year (except that for Summer Term, which may take place within 3 weeks after the finalisation of Summer Term results). If the late assessment cannot be completed before the commencement of the following academic year, the CPCE College Board Chairman shall decide on an appropriate time for completion of the late assessment.

Late Assessment

The student concerned is required to submit his/her application for a late assessment in writing to HKCC, within five working days from the date of the examination, together with any supporting documents. Where appropriate, applications for a late assessment will be referred to SARP for approval. A late assessment is not an automatic entitlement. Should a late assessment be granted, the examination will be regarded as a first assessment and the actual grade obtained will be awarded. Details of applications for a late assessment can be found in the Student Handbook.

Aegrotat Award

If a student is unable to complete the requirements of the programme in question for the award due to very serious illness, or other very special circumstances which are beyond his/her control, and considered by the Board of Examiners (BoE) as legitimate, the CPCE College Board will determine whether the student will be granted an aegrotat award. An aegrotat award will be granted only under very exceptional circumstances.

A student who has been offered an aegrotat award shall have the right to opt either to accept such an award, or request to be assessed on another occasion to be stipulated by the BoE; the student's exercise of this option shall be irrevocable.

The acceptance of an aegrotat award by a student shall disqualify him or her from any subsequent assessment for the same award.

An aegrotat award shall normally not be classified, and the award parchment shall not state that it is an aegrotat award. However, the BoE may determine whether the award should be classified, provided that they have adequate information on the student's academic performance.

Other Particular Circumstances

A student's particular circumstances may influence the procedures for assessment, but not the standard of performance expected in the assessment.

11.16 Other Regulations

Students of the Associate Degree Scheme in Science and Technology are bound by all other regulations of HKCC, CPCE, and/or the University.

Graduation Requirement Checklist for Associate in Engineering (8C112-ENG)

To be eligible for the respective award under the Associate Degree Scheme in Science and Technology, students should fulfil all the graduation requirements listed in Sections (I) – (IV) below. Please put a “√” in the appropriate boxes for the graduation requirements that you have fulfilled. For details of graduation requirements, please refer to Sections 5 and 8 of this definitive scheme document.

Study Patterns	Study Pattern I (Table 8.5.1a)	Study Pattern II (Table 8.5.1b)	Study Pattern III (Table 8.5.1c)	Study Pattern IV (Table 8.5.1d)	Study Pattern V (Table 8.5.1e)	Study Pattern VI (Table 8.5.1f)	Study Pattern VII (Table 8.5.1g)	Study Pattern VIII (Table 8.5.1h)
Graduation Requirements								
(I) Credit and Level Requirements (Refer to Section 8 for details)								
Total No. of Credits	☐ 60 credits	☐ 63 credits	☐ 63 credits	☐ 66 credits	☐ 63 credits	☐ 66 credits	☐ 66 credits	☐ 69 credits
Level Requirement	☐ at least 30 credits of subjects at Level 2 or above							
(II) General Education (GE) Requirements (Refer to Section 8.3 for details)								
GE Compulsory Subjects	☐ CCN1003 Chinese Communication for College Students ☐ CCN1001 Elementary Chinese (for Non-Chinese Speakers) ☐ CCN1004 Creative and Critical Thinking ☐ CCN1045 Calculus ☐ CCN1046 English for Academic Studies (Science and Technology) I ☐ CCN1047 English for Academic Studies (Science and Technology) II ☐ CCN1049 Physics I ☐ CCN2041 Applied Computing							
	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#] ☐ CCN1108 Foundation Physics	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics ☐ CCN1108 Foundation Physics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#] ☐ CCN1108 Foundation Physics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics ☐ CCN1108 Foundation Physics
GE Elective Subjects	☐ 4 GE elective subjects ☐ together with the GE compulsory subjects, the subjects belong to <u>at least four</u> of the five Cluster Areas ☐ one of the GE elective subjects is China-related							
(III) Discipline-specific (DS) Requirements (Refer to Section 8.4 for details)								
DS Compulsory Subjects	☐ CCN2042 Computer Programming ☐ CCN2249 Engineering Materials ☐ CCN2250 Engineering Mathematics ☐ CCN2269 Engineering Graphics and Computing ☐ CCN3134 Engineering Economics							
DS Elective Subjects	☐ 3 DS elective subjects							
(IV) Other Requirements (Refer to Section 5 for details)								
GPA Requirement	☐ attain a Grade Point Average (GPA) of 2.0 or above at the end of the programme							

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Graduation Requirement Checklist for Associate in Information Technology (8C112-IT)

To be eligible for the respective award under the Associate Degree Scheme in Science and Technology, students should fulfil all the graduation requirements listed in Sections (I) – (IV) below. Please put a “√” in the appropriate boxes for the graduation requirements that you have fulfilled. For details of graduation requirements, please refer to Sections 5 and 8 of this definitive scheme document.

Study Patterns Graduation Requirements	Study Pattern I (Table 8.5.2a)	Study Pattern II (Table 8.5.2b)	Study Pattern III (Table 8.5.2c)	Study Pattern IV (Table 8.5.2d)	Study Pattern V (Table 8.5.2e)	Study Pattern VI (Table 8.5.2f)	Study Pattern VII (Table 8.5.2g)	Study Pattern VIII (Table 8.5.2h)
(I) Credit and Level Requirements (Refer to Section 8 for details)								
Total No. of Credits	☐ 60 credits	☐ 63 credits	☐ 63 credits	☐ 66 credits	☐ 63 credits	☐ 66 credits	☐ 66 credits	☐ 69 credits
Level Requirement	☐ at least 30 credits of subjects at Level 2 or above							
(II) General Education (GE) Requirements (Refer to Section 8.3 for details)								
GE Compulsory Subjects	☐ CCN1003 Chinese Communication for College Students ☐ CCN1001 Elementary Chinese (for Non-Chinese Speakers) ☐ CCN1004 Creative and Critical Thinking ☐ CCN1045 Calculus ☐ CCN1046 English for Academic Studies (Science and Technology) I ☐ CCN1047 English for Academic Studies (Science and Technology) II ☐ CCN2041 Applied Computing ☐ CCN2042 Computer Programming							
	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics
GE Elective Subjects	☐ 4 GE elective subjects	☐ 5 GE elective subjects	☐ 4 GE elective subjects	☐ 5 GE elective subjects	☐ 4 GE elective subjects	☐ 5 GE elective subjects	☐ 4 GE elective subjects	☐ 5 GE elective subjects
	☐ together with the GE compulsory subjects, the subjects belong to <u>at least four</u> of the five Cluster Areas ☐ one of the GE elective subjects is China-related							
(III) Discipline-specific (DS) Requirements (Refer to Section 8.4 for details)								
DS Compulsory Subjects	☐ CCN2238 Computer Networking ☐ CCN2239 Data Structures ☐ CCN2240 Database Systems ☐ CCN2241 Discrete Structures ☐ CCN2242 Object Oriented Programming							
DS Elective Subjects	☐ 3 DS elective subjects							
(IV) Other Requirements (Refer to Section 5 for details)								
GPA Requirement	☐ attain a Grade Point Average (GPA) of 2.0 or above at the end of the programme							

[#] CCN1048 Introduction to Linear Algebra: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Graduation Requirement Checklist for Associate in Statistics and Computing for Business (8C112-SCB)

To be eligible for the respective award under the Associate Degree Scheme in Science and Technology, students should fulfil all the graduation requirements listed in Sections (I) – (IV) below. Please put a “√” in the appropriate boxes for the graduation requirements that you have fulfilled. For details of graduation requirements, please refer to Sections 5 and 8 of this definitive scheme document.

Study Patterns Graduation Requirements	Study Pattern I (Table 8.5.3a)	Study Pattern II (Table 8.5.3b)	Study Pattern III (Table 8.5.3c)	Study Pattern IV (Table 8.5.3d)	Study Pattern V (Table 8.5.3e)	Study Pattern VI (Table 8.5.3f)	Study Pattern VII (Table 8.5.3g)	Study Pattern VIII (Table 8.5.3h)
(I) Credit and Level Requirements (Refer to Section 8 for details)								
Total No. of Credits	☐ 60 credits	☐ 63 credits	☐ 63 credits	☐ 66 credits	☐ 63 credits	☐ 66 credits	☐ 66 credits	☐ 69 credits
Level Requirement	☐ at least 30 credits of subjects at Level 2 or above; PLUS ☐ at least 30 credits of subjects at Level 1 or above							
(II) General Education (GE) Requirements (Refer to Section 8.3 for details)								
GE Compulsory Subjects	☐ CCN1003 Chinese Communication for College Students ☐ [or CCN1001 Elementary Chinese (for Non-Chinese Speakers)] ☐ CCN1004 Creative and Critical Thinking ☐ CCN1045 Calculus ☐ CCN1046 English for Academic Studies (Science and Technology) I ☐ CCN1047 English for Academic Studies (Science and Technology) II ☐ CCN2041 Applied Computing ☐ CCN2042 Computer Programming							
	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics
GE Elective Subjects	☐ <u>4</u> GE elective subjects	☐ <u>5</u> GE elective subjects	☐ <u>4</u> GE elective subjects	☐ <u>5</u> GE elective subjects	☐ <u>4</u> GE elective subjects	☐ <u>5</u> GE elective subjects	☐ <u>4</u> GE elective subjects	☐ <u>5</u> GE elective subjects
	☐ together with the GE compulsory subjects, the subjects belong to <u>at least four</u> of the five Cluster Areas ☐ one of the GE elective subjects is China-related							
(III) Discipline-specific (DS) Requirements (Refer to Section 8.4 for details)								
DS Compulsory Subjects	☐ CCN2101 Financial Accounting ☐ CCN2237 Applied Statistical Methods ☐ CCN2240 Database Systems ☐ CCN2276 Statistical Data Analysis ☐ CCN2286 Probability Distributions ☐ CCN2287 Inferential Statistics							
DS Elective Subjects	☐ <u>2</u> DS elective subjects							
(IV) Other Requirements (Refer to Section 5 for details)								
GPA Requirement	☐ attain a Grade Point Average (GPA) of 2.0 or above at the end of the programme							

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

Graduation Requirement Checklist for Associate of Science (8C112-AS)

To be eligible for the respective award under the Associate Degree Scheme in Science and Technology, students should fulfil all the graduation requirements listed in Sections (I) – (IV) below. Please put a “√” in the appropriate boxes for the graduation requirements that you have fulfilled. For details of graduation requirements, please refer to Sections 5 and 8 of this definitive scheme document.

Study Patterns	Study Pattern I (Table 8.5.4a)	Study Pattern II (Table 8.5.4b)	Study Pattern III (Table 8.5.4c)	Study Pattern IV (Table 8.5.4d)	Study Pattern V (Table 8.5.4e)	Study Pattern VI (Table 8.5.4f)	Study Pattern VII (Table 8.5.4g)	Study Pattern VIII (Table 8.5.4h)
Graduation Requirements								
(I) Credit and Level Requirements (Refer to Section 8 for details)								
Total No. of Credits	☐ 60 credits	☐ 63-69 credits	☐ 63 credits	☐ 66-72 credits	☐ 63 credits	☐ 66-72 credits	☐ 66 credits	☐ 69-75 credits
Level Requirement	☐ at least 30 credits of subjects at Level 2 or above							
(II) General Education (GE) Requirements (Refer to Section 8.3 for details)								
GE Compulsory Subjects	☐ CCN1003 Chinese Communication for College Students ☐ CCN1001 Elementary Chinese (for Non-Chinese Speakers)] ☐ CCN1004 Creative and Critical Thinking ☐ CCN1045 Calculus ☐ CCN1046 English for Academic Studies (Science and Technology) I ☐ CCN1047 English for Academic Studies (Science and Technology) II ☐ CCN1049 Physics I ☐ CCN2041 Applied Computing							
	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#] ☐ CCN1106 Foundation Biology [#] and/or ☐ CCN1107 Foundation Chemistry [#] and/or ☐ CCN1108 Foundation Physics [#]	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics ☐ CCN1106 Foundation Biology [#] and/or ☐ CCN1107 Foundation Chemistry [#] and/or ☐ CCN1108 Foundation Physics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra [#] or ☐ CCN1050 Introduction to Probability and Statistics [#] ☐ CCN1106 Foundation Biology [#] and/or ☐ CCN1107 Foundation Chemistry [#] and/or ☐ CCN1108 Foundation Physics [#]	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics	☐ CCN1002 Practical English for College Students ☐ CCN1048 Introduction to Linear Algebra ☐ CCN1050 Introduction to Probability and Statistics ☐ CCN1106 Foundation Biology [#] and/or ☐ CCN1107 Foundation Chemistry [#] and/or ☐ CCN1108 Foundation Physics [#]
GE Elective Subjects	☐ 4 GE elective subjects ☐ together with the GE compulsory subjects, the subjects belong to <u>at least four</u> of the five Cluster Areas ☐ one of the GE elective subjects is China-related							
(III) Discipline-specific (DS) Requirements (Refer to Section 8.4 for details)								
DS Compulsory Subjects	☐ CCN1109 General Biology ☐ CCN1110 General Chemistry I							
DS Elective Subjects	☐ 6 DS elective subjects complete <u>at least 1</u> DS elective subject selected from the following three subjects: - CCN2232 General Microbiology - CCN2249 Engineering Materials - CCN2274 Organic Chemistry							
(IV) Other Requirements (Refer to Section 5 for details)								
GPA Requirement	☐ attain a Grade Point Average (GPA) of 2.0 or above at the end of the programme							

[#] **CCN1048 Introduction to Linear Algebra:** Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 2.

CCN1050 Introduction to Probability and Statistics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Mathematics Extended Module 1.

CCN1106 Foundation Biology: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Biology OR Combined Science (with Level 2 in Biology component). Students admitted on the basis of HKALE qualification or equivalents are required to take the subject if they have not attained Grade E or above in HKCEE Biology.

CCN1107 Foundation Chemistry: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 2 or above in HKDSE Chemistry OR Combined Science (with Level 2 in Chemistry component). Students admitted on the basis of HKALE qualification or equivalents are required to take the subject if they have not attained Grade E or above in HKCEE Chemistry.

CCN1108 Foundation Physics: Students admitted on the basis of HKDSE qualification are required to take the subject if they have not attained Level 3 or above in any one HKDSE subject other than English, OR they have not attained Level 2 or above in HKDSE Physics or Combined Science (with Level 2 in Physics component). Students admitted on the basis of HKALE qualification or equivalents are required to take the subject if they have not attained Grade E or above in HKCEE Physics.

Section Two: Syllabuses

Level	1
Credits	3
Medium of Instruction	English and Chinese (Putonghua)
Prerequisites	Nil
Exclusion	CCN1003 Chinese Communication for College Students
Assessment	100% coursework

Aims

This subject introduces to non-Chinese speaking students, or those whose Chinese standards are at junior secondary level or below, the Putonghua phonetic system as well as terms and phrases commonly used in everyday situations. It serves as a solid foundation for students to acquire basic Putonghua competence and to prepare themselves for studying Putonghua at more advanced levels. The subject requires students to learn and practise how to write 150 simple Chinese characters.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- apply the Putonghua phonetic system (the Hanyu pinyin system) to pronouncing the sounds of Chinese characters
- use Chinese terms and phrases commonly used in everyday situations
- conduct simple dialogues in Putonghua
- identify and recognise 150 Chinese characters
- have a better understanding of Chinese culture and Chinese people

Indicative Contents

- **Phonetic Structures of Putonghua and Hanyu Pinyin System**
The four tones; Initials; Simple, compound and nasal finals; Neutral tones; Tones sandhi; Retroflex ending “-r”.
- **Sentence Patterns and Drills**
Word order; Measure words; Word Stress and intonation.
- **Chinese Character Writing – 150 Words**
- **General Knowledge of Relationship between Chinese Language and Culture**
- **Daily Life Conversations**

Teaching/Learning Approach

Lectures will provide students with a good understanding of the Putonghua phonetic system and a knowledge of Chinese sentence structures. Such knowledge will be reinforced with frequent oral practice, role play and class activities during tutorials.

Assessment Approach

Assessment will be in the form of dictation, written tests and oral presentations. The coursework will constitute 100% of the assessment of the subject. The dictation and written tests will assess students' understanding of the Pinyin system and pinyin rules. Oral presentations will assess students' ability to consolidate the knowledge gained in this course.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Xiao, H. (2005) *Talk Mandarin Today* 《今日學說普通話》, 2nd Ed., Chinese University Press.

Reference

Liu, X. (2010) *New Practical Chinese Reader*, 2nd Ed., Beijing Language and Culture University Press.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject aims to equip students with the essential English language foundations needed for effective communication in an English-medium learning environment at post-secondary education level. The main focus is to enhance students' English proficiency in reading, writing, listening and speaking for academic purposes.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- develop strategies for vocabulary building and better comprehension of spoken and written academic texts
- use accurate and appropriate lexical-grammatical resources to perform essential spoken and written academic tasks in English
- apply fundamental writing techniques to structure and write short academic texts
- identify main ideas from spoken and printed sources and take effective notes in academic settings
- achieve a fair level of oral fluency and accuracy

Indicative Contents

- **Reading Skills**
Reading strategies (e.g. skimming and scanning); Skills for making inferences from academic texts and discerning meanings of vocabulary, idioms and other unfamiliar English expressions; Academic vocabulary.
- **Writing Skills**
Grammar skills (e.g. subjects and verbs, subject-verb agreement, pronouns, adjectives and adverbs, prepositions and conjunctions, punctuations); Sentence skills (e.g. phrases, clauses, fragments, run-ons); Composition and variation of sentences (e.g. simple sentences, compound sentences and complex sentences); Academic writing (e.g. paragraph/essay structure, topic sentence, supporting sentences, and concluding sentence).
- **Listening Skills**
Classroom note-taking skills; Listening strategies (e.g. listening for general and specific information; identifying the features of spoken English); Discrimination of English sounds.
- **Speaking Skills**
Word pronunciation (e.g. vowels, consonants, diphthongs, syllables and stress); Intonation (e.g. stress in sentences); Linking.

Teaching/Learning Approach

Seminars will focus on improving students' English language skills through practices. Different learning activities such as diagnostic tests, writing practices, worksheets, reading exercises, and group discussions will be used to enhance students' English proficiency for academic purposes.

In language laboratory sessions, audio-visual and on-line materials will be used to reinforce students' listening and speaking skills.

Assessment Approach

A variety of assessment tools will be used, including presentations, written tasks, quizzes and test(s) designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking and analytical skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Roemer, A. E., Ruetten, M. K and Thompson, C. (2009) *Use of English*, Cengage Learning.

References

Brown, K. and Hood, S. (2002) *Academic Encounters: Reading, Study Skills, and Writing*, 1st Ed., Cambridge University Press.

Espeseth, M. (2002) *Academic Listening Encounters: Listening, Note Taking, and Discussion*, 1st Ed., Cambridge University Press.

Hartmann, P. and Blass, L. (2007) *Quest 1 Listening and Speaking*, 2nd Ed., McGraw-Hill.

Hartmann, P. and Blass, L. (2007) *Quest 1 Reading and Writing*, 2nd Ed., McGraw-Hill.

Langan, John and Janet M. Goldstein (2010) *English Brushup*, 5th Ed., New York: McGraw-Hill.

Oshima, A. and Ann H. (2006) *Writing Academic English*, 4th Ed., New York: Pearson Longman.

Roemer, A. E. (2006) *College Oral Communication 2*, Houghton Mifflin.

Ruetten, M. K. (2003) *Developing Composition Skills: Rhetoric and Grammar*, 2nd Ed., Heinle.

Thompson, C. (2004) *Academic Word Power 2*, Heinle.

程度	1
學分	3
教學語言	中文〔普通話講授〕
教學模式	42 小時課堂講授
修讀條件	無
不能同時修讀的科目	CCN1001 Elementary Chinese
評估方法	100%課堂習作

科目目標

本科目透過課堂講授、課堂練習、分組習作等方式，培養同學中文閱讀、書寫和演說能力。科目注重教導同學規範地運用中文的字、詞、句；教授撰寫各類中文文章的基礎知識，特別是與職業需求或社會事務相關的實用文類等；培養同學閱讀中文經典名家名著的興趣和能力；訓練同學在演講、討論等方面的技巧。

科目統籌小組在籌備講授及評核本課程時，須參照相關的「課程內容藍圖」，了解本科目的角色定位，如何在課程層面上協助學生達到預期的學習成果。

學習成果

學生成功完成本科目，應能：

- 了解漢字流變及漢語語法結構的基礎知識，寫正字及規範的漢語；
- 掌握不同種類實用文體的寫作，以應付職業需求及其他社會事務的需要；
- 提高閱讀中文著作的能力，理解不同文章的技巧和思想內涵；
- 通過個人演說及討論，提升口語技巧及能力。

課程內容

- **基礎中文課程**
介紹漢語語法，包括詞性、句子、篇章結構；介紹漢字的文字流變，學習簡化字；學習、閱讀名家名作，掌握文章閱讀技巧。
- **實用文寫作訓練課程**
介紹中文實用文的定義、種類及應用範圍；學習書信（各公私函件，包括投訴信、回覆投訴信、求職信，同時也介紹傳統書信、電子郵件和傳真等信函格式）、新聞稿、計劃書、報告、工作總結等文類的寫作規範。
- **口語訓練課程**
介紹如何進行求職、升學面試，包括個人及小組面試；介紹如何參與討論、闡述立場；介紹演講辭的寫作，如何針對演講的不同場合和對象發揮演講的效用。

教學方法

本科目理論與實際並重，透過大量個案分析（佳作及病例）深化課堂所教知識，並鼓勵學生參與討論及小組報告，進一步活用中文、強化自信。

評核方法

本科目採用持續評估方法，學生須撰寫平時習作，如報告、演講辭及計劃書等，也須完成導修課堂小組報告、討論等，另有期中測驗，檢測學生掌握本科目的水平。

每班的教學計劃 (Teaching Plan) 詳述個別習作佔整體評核的實際比重。學生收到習作時，均會獲告知習作所評核的是那些預期學習成果。

學生所需的努力

學生預期要花共約一百三十小時在課堂、導修、習作、備課、溫習、測驗及考試上。

指定課本

本科目涉及的參考材料較廣泛，無指定課本。

參考書

于成鯤主編：《現代應用文》，復旦大學出版社，1996年版。

白雲開：《21 世紀商用中文書信寫作手冊》，香港城市大學出版社，2001年版。

呂叔湘：《現代漢語八百詞》，商務印書館，1984年版。

李錦昌編著：《現代商業傳意大全》，商務印書館(香港)有限公司，2005年版。

胡裕樹：《現代漢語（增訂本）》，三聯書店，1992年版。

路德慶主編：《寫作教程》，華東師範大學出版社，1984年版。

張斌：《漢語語法修辭常識》，香港教育圖書公司，1991年版。

陳建民：《說話的藝術》，語文出版社，1994年版。

蔡富春主編：《中國商務應用文書手冊》，經濟日報出版社(香港)，2002年版。

董兆傑：《口語訓練》，語文出版社，1990年版。

盧丹懷〔等〕：《中港應用文傳意大全》，商務印書館(香港)有限公司，2002年版。

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject equips students with critical and creative thinking skills. It provides the conceptual framework to identify problems in both everyday life and specific domains, and to make the right and appropriate decisions. By widening their horizons and stimulating their multi-dimensional thinking style, it cultivates a proper attitude for enhancing students' critical and creative power. The subject also helps students develop critical thinking and creative thinking essential for their life-long learning and future work development.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the importance of thinking skills in everyday life
- appreciate their existing thinking habits, mental blocks and attitudes that hinder them from being critical and creative
- be aware of the different types of thinking, how they are different, how they can complement each other and how they can be applied to everyday situations
- become more attuned to fallacious reasoning in everyday life, and know how to correct the fallacies found
- apply the techniques for critical thinking in evaluating arguments and solutions
- develop the attitude and techniques for creative problem solving
- apply the basic skills for working in innovative problem solving teams

Indicative Contents

- **Thinking as a Skill**
Concept of Thinking; Importance of thinking; Habitual thinking vs. thinking as a deliberate skill that can be controlled; Vertical (critical) vs. lateral (creative) thinking; Attitude and psychological preparations for thinking.
- **Critical Thinking: Introduction**
Critical thinking; Role of critical thinking and how it can complement creative thinking in problem solving; Logic and critical thinking.
- **Meaning Analysis**
The nature of meaning; Meaning and reference; Basic functions of language; Language traps.

- **Argument Analysis**
Identifying arguments; Validity and Soundness; Inductive strength and cogency; Methods of enumeration; Analogical arguments; Arguments from consequences; Causal arguments.
- **Fallacy Analysis**
Common errors in thinking including inconsistency, irrelevance, insufficiency, and inappropriate assumptions.
- **Creative Thinking: Introduction**
Creativity as an ability to modify self-imposed constraints; Characteristics of creative people; Basic elements affecting creativity in practice: person, process, product and climate; Introduction to stages in the creative process.
- **Generating Ideas**
Avoiding blocks to creativity; Stimulating ideas using various techniques and tools: forced uncommon responses, free association, analogy, unusual combinations, visualisation, brain storming, and Edward de Bono's various techniques such as the six thinking hats, etc.
- **Creative and Critical Thinking in Teams**
Characteristics of effective teams; Stimulating creativity and problem solving in teams; Communication, trust building and conflict-reduction for teams.

Teaching/Learning Approach

The emphasis of the subject is on enabling students to acquire the attitudes and skills in practical thinking. Lectures will be used to explain and demonstrate the topics and techniques introduced. Cases and exercises will be used during tutorials to let students experience thinking in action. To motivate students to actively change their own attitudes and participate in experiential workshop-style tutorials, a lot of interesting and daily examples and cases will be used as illustration/demonstration during lectures, for exercises during tutorials and for assignments.

To achieve the best learning outcomes, the lecturer/instructor will create a climate that is challenging, dynamic and yet idea-supporting, trusting, and playful. Debates and risk taking will be encouraged, which facilitates students to make their own judgments in a rational and fluent way.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, tests and an examination designed to develop and assess students' creative and critical thinking as well as communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks:

Joe Lau. (2011) *An Introduction to Critical Thinking and Creativity: Think More, Think Better*, Wiley.

貝剛毅：《思方導航——批判思考導論》，匯智出版，2011年版。

References:

Bassham, G. et al. (2005) *Critical Thinking: A Student's Introduction*, 2nd Ed., McGraw Hill.

LeBlanc, J. (1998) *Thinking Clearly: A Guide to Critical Reasoning*, W. W. Norton & Company.

Walton, D. N. (2005) *Fundamentals of Critical Argumentation*, Cambridge University Press.

Walton, D. N. (1989) *Informal Logic: A Handbook of Critical Argumentation*, Cambridge University Press.

李天命：《語理分析的思考方法》，青文書屋，1981 年版。

李天命：《哲道行者》，明報出版社，2005 年版。

李逆熵：《格物致知 — 思考與研究方法概要》，經濟日報出版社，2009 年版。

方子華等：《批判思考》，McGraw Hill (Asia)，2005 年版。

Recommended Websites:

思方網（香港大學）：<http://philosophy.hku.hk/think/chi/>

Critical Thinking Web：<http://philosophy.hku.hk/think/>

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject provides students with an opportunity to embark on a guided study trip to local or overseas places. It exposes students to new cultural make-up, so as to broaden their understanding and appreciation of different historical, political, socio-economical, and environmental contexts.

The study trips provide students first-hand experience and opportunities of close observations, which allow them to develop their own perspectives and perceptions towards particular cultural issues through research. The subject also helps students develop critical thinking, analytical skills and communication skills for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- develop a deeper understanding and a positive appreciation of cultures
- develop their personal visions through the lateral connections between their own lives and experiences and those of other people
- undertake cultural research at beginner's level
- enhance their acuity and critical thinking skills
- work collaboratively with others as part of a team
- develop project management skills

Indicative Contents

- **What is culture?**
The changing context (from industrialisation to postmodernism); Ordinary culture; High culture/low culture; Mass culture/popular culture; The question of ideology; Traditions and contemporaries; Introduction to cultural theory; Signifying system; Cultural codes; Material culture and consumerism; Fashion and trend; Identity issues.
- **Qualitative Research**
Qualitative research vs. Quantitative research; Interpretivism vs. positivism; Grounded theory; Phenomenology; Case study; Ethnographic research.
- **Qualitative Data Collection & Analysis**
Field work; Observation (naturalistic observation and participant observation); Behaviour study (social behaviour, individual behaviour & material environment); Interactive interview; Survey; Written description; Hypothesis; Sampling (sorting, categorisation and naming themes).

- **Documentation and Representation**

Video and photo documentation; Photo and video journals; Field log book; Quick sketch and analytical drawings; Mappings (emotion, behaviour and relationship); Information graphics (tables, diagrams, charts, graphs and illustrations); Written report.

Teaching/Learning Approach

Using an interactive approach, this subject will be taught by means of lectures, study trips, workshops, tutorials and presentations. Lectures will introduce and explain various cultural and social theories. Study trips will be arranged to broaden students' horizon and provide them opportunities to gain first hand experiences. Students need to bear the travelling expense themselves. Students will be required to compile a field research log book for the study and analysis of social, cultural, religious, political and economic aspects of an identified area of study (e.g. visits to urban or rural areas including city neighborhoods, commercial spaces, cultural organisations such as museums, galleries, design establishments, etc.). Workshops will be organised to develop students' research, analytical and presentation skills. Tutorials will provide students with the opportunity to deepen their understanding of the subject and to explore further the applications of theories taught. Students are expected to participate actively in class by leading discussions on their research findings and doing presentations.

Assessment Approach

A variety of assessment tools will be used, including presentation of research findings, submission of field research log book and report. Emphasis will be placed on students' ability to explore the unknown and develop a deeper sense of understanding and appreciation of culture.

First-hand study materials such as drawings, photographs, video clips, written reports and presentation layouts will form the core of the deliverables. Students will be assessed by their ability to synthesise a broad range of information, identify useful resources and apply their developing understanding to novel problems.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Alasuutari, P. (1995) *Researching Culture: Qualitative Method and Cultural Studies*, 1st Ed., Sage Publications.

Frow, J. (1995) *Cultural Studies and Cultural Value*, 1st Ed., Oxford University Press.

Mau, B., Leonard, J. and The Institute Without Boundaries (2004) *Massive Change*, 1st Ed., Phaidon.

Strauss, A. and Corbin, J. (2008) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 3rd Ed., SAGE Publications.

Williams, R. (1980) *Problems in Materialism and Culture: Selected Essays*, 1st Ed., Verso Books.

吳俊雄，張志偉編：《閱讀香港普及文化, 1970-2000》(修訂版)，香港：牛津大學出版社，2004 年版。

Level	1
Credits	3
Medium of Instruction	French, supplemented with English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to equip students with knowledge of basic and practical French. Practical aspects of using French in daily life scenarios will be used to help students broaden their horizons, gain some understanding of the French culture, and acquire basic proficiency to communicate in French, especially in the areas of writing and speaking.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- use the basic phonetics of French
- use common phrases in French to cope with their travel needs
- express themselves in French to survive in French speaking countries
- appreciate some aspects of French culture

Indicative Contents

- **French Pronunciation**
The consonants and vowels of French; Words in company; Intonation.
- **Everyday Communication**
Addressing others and introducing oneself; Responding affirmatively, negatively and skeptically; Talking about time, date, and weather; Expressing gratitude and apology.
- **Basic Survival**
Traveling by air, train and bus; Staying in a hotel, eating in a restaurant etc; Applying for a visa and going through customs.
- **Social Life**
Starting, changing and closing a conversation; Making telephone calls and appointments; Expressing congratulations and good wishes; Meeting and seeing people off.

Teaching/Learning Approach

This foundation course, designed for students with no previous knowledge of the language, will focus on the development of the students' linguistic skills through practical use of the language. Both oral and

written forms of communication will be given equal emphasis. Frequent interaction between the lecturer and the students is expected.

Assessment Approach

A variety of assessments such as individual and group assignments, short presentations/role plays, tests and an examination will be used to evaluate the application of the learnt knowledge in communication in both written and oral aspects.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Maheo-Le Coadic, M., Poisson-Quinton, S. and Vergne-Sirieys, A. (2005) *Festival 1, livre de l'élève and cahier d'exercices*, CLE International.

References

Charliac, L. and Motron, A. C. (2004) *Phonétique Progressive Du Français-3 CD audio collectifs*, CLE International.

Grégoire, M. (1998) *Grammaire Progressive Du Français : Avec 400 exercices*, CLE International.

Kendris, C. (2002) *French Vocabulary*, 2nd Ed., Barron's.

McCoy, H. (2011) *501 Essential French Verbs*, Dover Publications, Inc.

Oudot, S. (2007) *French Verbs and Essentials of Grammar*, 2nd Ed., McGraw Hill.

Concise Oxford-Hachette French Dictionary (2009), 4th Ed., Oxford University Press.

Audio-visual materials

L'Espace des Français (Niveau débutant) (video). (1996) CLE International.

Une journée de Français (Niveau débutant) (video). (1997) CLE International.

程度	1
學分	3
教學語言	中文〔粵語講授〕
修讀條件	無
不能同時修讀的科目	CCN3132 Fundamentals of Chinese Medicinal Therapy
評估方法	100%課堂習作

科目目標

中國醫學素為中國文化遺產的重要部份，歷史悠久，內涵豐富，將醫學科學、倫理、文化精神和趣味融為一體，也是呈現中國文化精義「天人合一」的形式之一，吸引眾多愛好者研習傳統中醫文化。學習中醫學的人，往往能藉醫學原理及劑方，融合個人於大自然奇趣之中，糅合道學剛勁與陰柔，陰陽調和相濟。學習中醫藥學有無窮的樂趣，故本科目尤其著重教導中國傳統醫學的基礎知識及文化要義，使學生明白中國醫學的文化精神。同時，本科目旨在提高學生學習中國醫學的興趣，並掌握中國醫學文化的基礎知識。

科目統籌小組在籌備講授及評核本課程時，須參照相關的「課程內容藍圖」，了解本科目的角色定位，如何在課程層面上協助學生達到預期的學習成果。

學習成果

學生成功完成本科目，應能：

- 明白中國醫學文化的基礎知識及特點；
- 運用掌握的基礎知識與同學交流中醫學文化；
- 分辨及了解人類經脈的分佈及五臟六腑構成的基礎原理；
- 了解中國醫學的特色，欣賞中國文化精義內「天人合一」的養生之道。

課程內容

- **中醫學歷史及重要**
中國醫學的地位，自先秦至近代中國醫學的歷史發展。
- **中醫學的特色**
針灸、骨骼的原理、中醫聞診、問診及切診。
- **中醫經脈及診斷-原理**
以李時珍《本草綱目》為中心的引介。
- **中醫學與道學文化**
氣功原理與中醫的發展。
- **中醫兒科及方劑學**
麻疹及傷寒的治療方法。

- **中醫骨傷及婦科**
跌打損傷與治療應用。
- **五臟病理**
五臟、腸胃與道家治療方法。
- **中醫膏方及調養**
引介基本中藥及飲料營養方法。
- **中醫療傷**
以華佗論醫為中心的討論。
- **氣功與養生**
道家氣功治療方法。
- **中醫倫理學**
中醫的醫德及操守。

教學方法

學生需要積極參與課堂及導修課的教學活動。在課堂上，主要由講師介紹中國醫學的基礎知識及治療方法，尤多運用電子光碟及視覺器材，講解中國醫學及人體經絡等知識，教導學生了解中國醫學的要義及其蘊含的歷史文化，使科目更富趣味及科學邏輯。講師也會藉導修課及課堂實習，使學生掌握中醫學經脈的基礎知識，體會中國傳統醫師斷診的方法與規則。

評核方法

本科目廣泛利用各種評核方式，例如小組討論、報告、測驗、實習報告及個人終期報告的評鑑模式，準確衡量學生所學，亦特別重視學生課堂的參與，務求透過各種評核模式，公平、全面及有效地評核學生明白、運用及實習所掌握的中國醫學基礎知識的能力。

1. 小組書面報告—主要從小組同學合作撰寫的報告中，考核同學的合作能力，及從報告考察同學所獲的中國醫學基礎知識。
2. 小組討論及課堂匯報—主要考核同學在有限時間內報告重點及回應同學的問題。
3. 測驗—考核同學了解中醫學理的基礎知識。
4. 個人實習報告—考核同學觀診後撰寫中醫病理文化的報告。
5. 個人終期報告—要求每位同學撰寫論文一篇，考核同學了解中醫藥的基礎知識。

每班的教學計劃 (Teaching Plan) 詳述個別習作佔整體評核的實際比重。學生收到習作時，均會獲告知習作所評核的是哪些預期學習成果。

學生所需的努力

學生預期要花共約一百三十小時在課堂、導修、習作、備課、溫習、測驗及考試上。

指定課本

周萍：《中醫學基本常識及針灸學》，安徽科學技術出版社，1985 年版。

參考書

劉燕池：《中醫學基礎概論》，中醫古籍出版社，1986 年版。

向敬協：《中醫辨脈症治》，中國中醫藥出版社，1998 年版。

史方奇：《中醫優生長壽法》，科學技術文獻社，1988 年版。

黨毅：《中醫營養食療學》，科學出版社，1988 年版。

申卻驕：《中醫營養學》，中醫古籍出版社，1988 年版。

張發榮：《中醫學基礎》，四川科學技術出版社，1991 年版。

楊力：《中國運氣學》，北京科學技術出版社，1995 年版。

趙存娥：《中國病因病機學》，科學出版社，2000 年版。

門九章：《中醫學導論》，科學出版社，2001 年版。

李以義：《中醫痰病的現代研究與治療》，學苑出版社，2002 年版。

劉興仁：《中醫學基礎概論》，學苑出版社，2008 年版。

黃英儒：《跟名老中醫學舌診》，化學工業出版社，2009 年版。

孫光榮：《當代名老中醫典型醫案集》，人民衛生出版社，2009 年版。

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject aims to engage students to develop solid foundation of skills, knowledge and necessary attitudes to adapt themselves successfully in their tertiary education. It facilitates students to become self-regulated, independently discovering and deep-understanding learners. This subject focuses on fostering students' problem-solving skills, sense of entrepreneurship and global outlook through student-centred activities, guest talks and disciplinary-based projects. The subject also introduces students to their chosen disciplines and allows them to cultivate commitments to social responsibility and a spirit of life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- explain and demonstrate initial mastery of the skills and knowledge conducive to effective tertiary level learning
- describe the general characteristics and up-to-date development of the discipline chosen, including its relationship with globalisation
- articulate the importance of entrepreneurship and the attributes of an entrepreneurial approach to work and life in general
- identify fundamental approaches to problem solving and demonstrate some problem solving capabilities and creativity in a small scale project

Indicative Contents

- **Tertiary Level Learning**
Independent, self-regulated and autonomous learning; Shallow understanding vs. deep understanding; Learning styles; Learning cycle; Taxonomy on levels of learning; Outcome-based education and criteria-referenced assessment; Learning in campus: curricular and co-curricular resources; Time management and study skills; Life-long learning.
- **The Discipline of Study**
Academic disciplines and sub-disciplines within the broad discipline; Range and clusters of subjects; Applied fields of practice; Discipline boundary; Inter-disciplinary and cross-disciplinary studies; Industries and job opportunities; Career trend and development; Normative and ethical considerations; Issues in contemporary development in the local and global context.
- **Entrepreneurship**
Enterprising work style, personality and mindset; Situation analysis and opportunities; Risk-taking

attitudes and competencies, Professionalism and ethical issues; Crisis and contingency; Ownership culture and leadership; Intrapreneurship; Interpersonal communication; Life career perspective.

- **Problem-solving skills**

Problem solving techniques; Creative problem solving process; elementary project management techniques.

Teaching/Learning Approach

Students will be divided into classes according to their broad disciplines. They are expected to take an active part in the learning process.

Mass seminars and lectures will be done by subject teachers and guest lecturers/speakers from higher education and industries, covering topics on tertiary level learning, discipline-related knowledge including up-to date development, and entrepreneurship in discipline-related context. Audio-visual input and class exercises will be built-in means to help students to integrate and apply the concepts and ideas.

In small group seminars and workshops, various activities such as case discussion, group exercises, simulated games, role playing and presentations will be used. They provide students with opportunities to deepen their understanding of the knowledge and ideas gained in mass seminars and lectures, and to apply them in real life situations relating to discipline-related development and learning in tertiary education institutions.

To facilitate optimal involvement of guest lecturers/speakers, the subject may be timetabled not as the common semester-based way, but instead may cover both semesters of the year.

Assessment Approach

Continuous assessment is adopted in this subject. Students are requested to hand in their learning journals regularly and to do presentations or discussions on selected topics. Each student will complete a project on understanding and analysing a selected issue in discipline-related development, in which he or she demonstrates own knowledge of discipline chosen and sense of entrepreneurship, as well as own capacity of tertiary level learning, problem solving and global outlook.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Indicative Readings

Reference

On discipline-related knowledge

Various pieces of readings about the general basic knowledge and up-to-date development of the discipline chosen.

On learning in tertiary education

Baldwin, Amy (2012) *The First-Generation College Experience*, Prentice Hall.

Carter, Carol, Joyce Bishop and Sarah Kravits (2012) *Keys to Success: Building Analytical, Creative, and Practical Skills*, 7th Ed., Prentice Hall.

Carter, Carol, Joyce Bishop, Judy Block and Sarah Kravits (2008) *Keys to Effective Learning: Developing Powerful Habits of Mind*, Prentice Hall.

Pintrich, Paul R. (2008) *Learning to Learn: The Skill and Will College Success*, 2nd Ed., Prentice Hall.

Staley, Constance, C. (2011) *Focus on College Success*, Cengage Learning.

李逆熵：《格物致知：思考與研究方法概要》，經濟日報出版社，2009 年版。

On entrepreneurship

Blonchek, Robert M. and O'Neill, Martin F. (1999) *Act Like An Owner: Building An Ownership Culture*, John Wiley.

Brooks, Arthur C. (2009) *Social Entrepreneurship: A Modern Approach to Social Value Creation*, Prentice Hall.

Bygrave, William D. and Zacharakis, Andrew (2011) *Entrepreneurship*, 2nd Ed., Wiley.

Humphrey, Doris (2002) *Quick Skills: Skills for Entrepreneurs*, 1st Ed., Engage Learning.

Timmons, Jeffry A. and Spinelli, Stephen (2009) *New Venture Creation: Entrepreneurship for the 21st Century*, 8th Ed., McGraw Hill Education.

On problem solving and global outlook

Bucher, Richard, D. (2010) *Diversity Consciousness: Opening Our Minds to People, Cultures and Opportunities*, 3rd Ed., Prentice Hall.

James M. Higgins (2006) *101 Creative Problem Solving Techniques: The Handbook of New Ideas for Business*, New Management Pub. Co.

Michael J. Kirton (2003) *Adaption-Innovation: in the Context of Diversity and Change*, Routledge.

Daniel D. Matthews (2011) *The A3 Workbook: Unlock Your Problem-Solving Mind*, Productivity Press.

柯思仁：《超越疆界：全球化，現代性，本土文化》，八方文化創作室，2008 年版。

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	100% coursework

Aims

The aim of this subject is to help students develop their communication skills via the visual expression of hand drawings or photo images—by equipping them with the basic techniques necessary for visualising and capturing both figurative and conceptual objects.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- acquire the basic knowledge of visualisation skills
- experience basic visualisation skills through hand drawing and digital photo taking
- achieve creativity through practice of different visualisation mediums
- represent realised and imaginative images in effective ways
- incorporate with visualisation skills on different means of communication

Indicative Contents

- **Introduction to visualisation skills**
Hand drawing and digital photo taking techniques; Building narrative concepts by using visualisation skills.
- **Introduction to sketching**
Figurative objects representation through observation; Conceptual representation through imagination; 3-dimensional representation by light and shadow; Basic colour theory and mediums of drawing.
- **Introduction to digital photo taking**
Basic knowledge of photographic technology and equipment; Expressing affective and narrative concepts through photo images; Recording practical scenarios by photo taking.

Teaching/Learning Approach

Lectures will emphasise the concepts and applications of the principles and key issues, using an interactive approach.

Practical studio work such as life drawing and material exploration as well as outdoor sketching will be emphasised.

Assessment Approach

100% continuous assessment will be used in this subject. Students will be required to demonstrate visually progressive development and evaluate ideas through an intensive research study and through prototype making and testing.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Hutton-Jamieson, I. (1987) *Coloured Pencil Drawing Techniques: 22 Coloured Pencil Projects, Illustrated Step-by-Step with Advice on Materials and Techniques*, Studio Vista.

Koenig, P. A. (2005) *Design Graphics: Drawing Techniques for Design Professionals*, 2nd Ed., Pearson/Prentice Hall.

Shadrin, R. L. (1992) *Design & Drawing: An Applied Approach*, Davis Publications.

Simpson, I. (2009) *Drawing: Seeing and Observation*, 3rd Ed., A&C Black Publishers, Ltd.

Wallschlaeger, C. (1992) *Basic Visual Concepts and Principles for Artists, Architects, and Designers*, Wm. C. Brown Publishers.

Folts, J. A. (2005) *Handbook of Photography*, 6th Ed., Delmar Thomson Learning.

Ciaglia, J. (2006) *Introduction to Digital Photography*, 2nd Ed., Prentice Hall.

Langford, M. J. (2007) *Langford's Basic Photography: The Guide for Serious Photographers*, 8th Ed., Focal Press/Elsevier.

White, R. (2007) *How Digital Photography Works (How It Works)*, 2nd Ed., Que.

Level	1
Credits	3
Medium of Instruction	English, supplemented with Chinese
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject equips students with analytical skills necessary for the understanding of the basic management of common health problems in Hong Kong and/or other developed countries. It increases students' awareness and concepts of health promotion.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the common health problems in Hong Kong
- acquire the skills in finding updated information of health problems
- explain the concepts of management and care related to the common health problems
- apply the knowledge to lead a healthy living
- show analytical, critical thinking, and problem-solving skills

Indicative Contents

- **An Overview of Common Health Problems Based on Local Health Statistics**
The health indicators; Ten leading causes of death; Notifiable infectious diseases; Health reports.
- **Fundamental Knowledge of Common Health Diseases/Problems**
Definition; Incidence; Risk factor; Etiology; Clinical feature; Investigation; Treatment; Common health diseases or problems:
 - Neoplastic disorders
 - Cardiovascular disorders
 - Respiratory disorders
 - Cerebrovascular disorders
 - Gastrointestinal disorders
 - Endocrine disorders
- **Concepts of Care Management in Common Health Diseases/Problems**
Principles of care in identified common health diseases/problems.
- **Health Promotion and Prevention**
Preventive measures related to the identified common health diseases/problems; Implementation of a healthy lifestyle.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of common health problems, and the technique of searching updated information. Group discussions and activities might be arranged to stimulate students' awareness of health problem prevention and healthy living.

Tutorials will provide students with the opportunity to deepen their understanding and to further explore the applications of the knowledge taught. Activities in tutorials will normally include student presentations and discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including group projects and presentations, literature reviews, test(s) and an examination designed to develop and assess students' achievement of subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Black, J. M. et al. (2001) *Medical-surgical Nursing: Clinical Management for Positive Outcomes*, 6th Ed., Philadelphia: W.B. Saunder Company.

References

Ellis, J. R. and Hartley, C. L. (2000) *Managing and Coordinating Nursing Care*, Lippincott Williams and Wilkins.

Kenworthy, N. et al. (2002) *Common Foundation Studies in Nursing*, Churchill Livingstone.

Zelman, M. et al. (2010) *Human Diseases--A Systemic Approach*, 7th Ed., Pearson Education Ltd.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to introduce the basic concepts and essential knowledge of the applications and technology of the Internet and World Wide Web. It provides a conceptual framework to understand the operation of the Internet and to understand how computers connect and communicate with each other. This subject also helps to develop students' analytical ability on network technology.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the basic concepts and applications of the Internet and World Wide Web
- apply relevant Internet knowledge to enhance their understanding of other networking situations
- use current Internet Technology necessary for daily life application

Indicative Contents

- **Fundamentals of World Wide Web**
Internet basics; Client/server model; Browsers; Searching the Web; Web graphics; Multimedia; Basic HTML; Web programming tools; Web applications; Web 2.0.
- **Internetworking Technology**
Concepts on internetworking; Network hardware; Transmission basics and media; Network architectures and topologies; OSI model; TCP/IP model; Protocols and standards; TCP, UDP and IP; IP addresses; MAC addresses; Routing; Domain name system.
- **Internet Applications**
Client-server interactions; Electronic mail; Telnet; FTP; Electronic publishing, Electronic fund transfer; Electronic data interchange; Internet service providers; Application service providers; Internet applications and services in Hong Kong.
- **Internet Security**
Privacy and security issues; Security risks and measures; Firewall; Virtual Private Network.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key Internet concepts and theories, with specific reference made to the latest Internet Technology wherever appropriate. Simple exercises and activities may be arranged to stimulate students' interests of the subject.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of different network configurations. Activities in tutorials will normally include hands-on exercises and program writing with various web programming techniques.

Assessment Approach

A variety of assessment tools will be used, including assignment(s), project(s), test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their analytical skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Dean, T. (2010) *Network+ Guide to Networks*, 5th Ed., Cengage Learning.

References

Andrews, J., Beck, W. (2005) *i-Net+ Guide to Internet*, 3rd Ed., Cengage Learning.

Comer, D. E. (2009) *Computer Networks and Internets*, 5th Ed., Prentice Hall.

Deitel, P. J., Deitel, H. M., Deitel, A. (2012) *Internet & World Wide Web: How to Program*, 5th Ed., Prentice Hall.

Sebesta, R. W. (2011) *Programming the World Wide Web*, 6th Ed., Addison-Wesley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusions	CCN2039 Fundamental Psychology for Health Studies
Assessment	60% coursework 40% examination

Aims

This subject introduces different fundamental psychological theories which help explain the human mind and behaviour with a unified theme of academic psychology. Through applying the knowledge and different psychological perspectives to daily situations, students can better understand themselves and others, and thus facilitate their personal development. The subject also helps students build up positive social relationship, and develop critical thinking for their life-long learning. Furthermore, the subject serves as a foundation course that provides the necessary knowledge for students' further pursuit in Psychology.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- distinguish the differences between popular psychology and academic psychology
- understand the use of scientific reasoning in the study of psychology
- understand the fundamentals of psychological theories
- explain phenomena in daily lives with the use of psychological concepts and theories

Indicative Contents

- **History and Development of Psychology as a Science**
Scope of psychology; History of psychology; Value and contributions of psychology to human life; Concept of scientific reasoning; Steps in conducting research in psychology.
- **Research Methodologies**
Experimental method; Non-experimental methods; Survey; Case study; Observation; Correlation; Bias; sampling; Limitation of each method.
- **Biological Foundations of Psychology**
Brain structure and function; Genes and behaviour.
- **Emotion and Motivation**
Components of emotions; Psychological and physiological aspects of emotions; Universality of emotions; Theories of motivation: drives, incentive and hierarchy of needs.
- **Sensation and Perception**

Sensory modalities and processes; Principles of perceptual process.

- **Learning**
Classical conditioning; Operant conditioning; Social and cognitive approaches to learning; Limitations and applications of each theory.
- **Memory and Cognition**
Attention; Memory and its processes; Application of theories to improve memory; Organisation of long-term memory: schema; Mechanisms of forgetting.
- **Perspectives of Human Development**
Cognitive development; Social and personality development; Emotional development; Moral development.
- **Social Behaviour**
Social perception; Attitudes and behaviour; Attribution; Obedience and Conformity; Interpersonal attraction; Group influence.
- **Key Issues of Mental Health, Stress and Coping**
Defining abnormality; Disorders and their types according to DSM classification; Source and effects of stress on psychological functioning and physical health; Coping with and managing stress.

Teaching/Learning Approach

Lectures will explain key concepts and theories with the aid of learning and teaching activities that have been prepared and provided on the Web in order to encourage students' active participation during contact hours. Such activities will include self-assessment, class exercises, small group discussion topics, role-play and case demonstration. Moreover, audio-visual materials will also be used to facilitate learning during lecture.

Tutorials will help students to deepen their understanding of psychological concepts learnt in lectures and to apply them in daily situations.

Assessment Approach

Students will be assessed on all the materials presented in lectures, specified chapters in the text book, plus video shows and demonstrations in tutorials. In addition to the final examination, assessment also includes mid-term test(s), individual assignment(s) and group project(s).

The assessments are designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Weiten, W. (2011) *Psychology: Themes & Variation*, 8th Ed., Wadsworth Cengage Learning.

References

Coon, D., Mitterer, J. O. (2011) *Psychology: A Journey*, 4th Ed., Wadsworth.

Feist, G. J., Rosenberg, E. L. (2010) *Psychology: Making Connections*, McGraw Hill Higher Education.

Gerrig, R. J., Zimbardo, P. G. (2008) *Psychology and Life*, 8th Ed., Pearson Education, Inc.

King, L. A. (2008) *The Science of Psychology: An Appreciative View*, McGraw Hill Higher Education.

The Hong Kong Polytechnic University
Hong Kong Community College

Subject Description Form

Subject Code	CCN1018
Subject Title	Introduction to Sociology
Level	1
Credit Value	3
Medium of Instruction	English, supplemented with Chinese (Cantonese)
Pre-requisite / Co-requisite/ Exclusion	Exclusion CCN2040 Sociology for Health Studies
Objectives	This subject aims to systematically enhance students' understanding of human social life, groups and societies from both the micro and macro sociological perspectives. It equips them with a critical mind and a humanistic attitude to observing, interpreting and articulating unique human actions and emerging social issues, and enables them to appreciate the importance of cultural diversity and social equality in the changing human world.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: ▪ describe the basic concepts and theories in sociology. ▪ apply from both the micro and macro perspectives to examining substantive social issues and analysing the dynamics among the social institution, individual action and social change. ▪ demonstrate awareness and understanding of diverse and emerging social phenomena in both the local and global contexts.
Subject Synopsis/ Indicative Syllabus	Sociology and Sociological Perspectives Sociological imagination; Research methods; Conflict approaches; Functionalism; Action theory. Culture, Socialisation and Social Relations Inter-cultural and intra-cultural variations; Agents of socialisation; Gender socialisation and inequality; Crime, sub-culture and deviance. Social Stratification and Capitalism Class structure and mobility; Class inequality and poverty; Interaction between class, gender and race, Education and social stratification; Professionalisation. Social Institution

	Power and politics; Bureaucracy and rationalisation; Total institution; Inequality and segregation. Social Change and Economic Development From agricultural to industrial and post-industrial societies; Theories of social change and economic development; Globalisation and the information society.																																															
Teaching/Learning Methodology	Lectures will strongly emphasise active interaction between students and lecturers. They will be delivered, whenever necessary, with the aid of audio-visual materials to strengthen students’ awareness and discussions of current social issues. Seminars will be conducted in the form of group discussions and activities. Students will be divided into small groups to conduct presentations of assigned topics. They are expected to discuss their foci of presentation, conduct small scale first-hand enquiry, generate analysis from a range of data, apply relevant sociological theories and concepts to articulate social issues, and also facilitate group discussions.																																															
Assessment Methods in Alignment with Intended Learning Outcomes	A variety of assessment tools will be used to develop and assess students’ achievement of the subject intended learning outcomes. <table><tr><th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="3">Intended subject learning outcomes to be assessed</th></tr><tr><th>a</th><th>b</th><th>c</th></tr><tr><td>Continuous Assessment*</td><td>60</td><td colspan="3"></td></tr><tr><td>▪ Group Project</td><td>24</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Individual Exercise 1</td><td>12</td><td></td><td>✓</td><td>✓</td></tr><tr><td>▪ Individual Exercise 2</td><td>18</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Participation</td><td>6</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Final Examination</td><td>40</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Total</td><td>100</td><td colspan="3"></td></tr></table> <i>*Continuous assessment items and/or weighting may be adjusted by the subject team subject to the approval of the College Programme Committee.</i> To pass this subject, students are required to obtain Grade D or above in <u>both</u> the Continuous Assessment and Final Examination.					Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed			a	b	c	Continuous Assessment*	60				▪ Group Project	24	✓	✓	✓	▪ Individual Exercise 1	12		✓	✓	▪ Individual Exercise 2	18	✓	✓	✓	▪ Participation	6	✓	✓	✓	Final Examination	40	✓	✓	✓	Total	100			
Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed																																														
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Continuous Assessment*	60																																															
▪ Group Project	24	✓	✓	✓																																												
▪ Individual Exercise 1	12		✓	✓																																												
▪ Individual Exercise 2	18	✓	✓	✓																																												
▪ Participation	6	✓	✓	✓																																												
Final Examination	40	✓	✓	✓																																												
Total	100																																															
Student Study Effort Expected	Class contact		Hours																																													
	▪ Lecture		26																																													
	▪ Tutorial		13																																													
	Other student study effort																																															

	▪ Self-study	52
	▪ Continuous Assessment	39
	Total student study effort	130
Reading List and References	Recommended Textbook Macionis, John J. (2015). <i>Society: The Basics</i>. Pearson & Prentice Hall. References Bauman, Z. (1990). <i>Thinking Sociologically</i>. Blackwell. Berger, Peter L. (1963). <i>Invitation to Sociology: A Humanistic Perspective</i>. Penguin. Mills, C. W. (1959). <i>The Sociological Imagination</i>. Penguin.	

Level	1
Credits	3
Medium of Instruction	Japanese, supplemented with English and/or Cantonese
Prerequisites	Ability to understand, read and write Chinese characters (漢字)
Assessment	60% coursework 40% examination

Aims

This course aims to introduce students to the basics of Japanese pronunciation, different writing systems, vocabulary, sentence structure and grammar, simple conversations, while stimulating their interests in both the Japanese language and Japanese culture.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- pronounce the Japanese sounds correctly
- read and write Japanese characters (*Hiragana*, *Kanji* and *Rōmaji*) and recognise *Katakana*
- develop a vocabulary repertoire of about 500 words (including *Kanji*, commonly used expressions and phrases)
- acquire a basic knowledge of the characteristics and grammar of the Japanese language
- understand and engage in simple conversations on everyday matters
- develop a preliminary interest in Japanese culture

Indicative Contents

- **Phonetic Systems**
All vowels and consonants, syllables, pitch accent, intonation.
- **Writing Systems**
Various writing systems (*Rōmaji*, *Hiragana*, *Kanji*).
- **Vocabulary/ Reading/ Writing**
Simple vocabulary (e.g. daily greetings, simple counting, numbers, currency, times and dates);
Reading simple dialogues and short passages; Writing simple sentences.
- **Grammar**
Simple verbs (present/past tense; affirmative/negative form), basic particles.
- **Speaking/ Listening**
Simple daily conversations (e.g. introducing oneself and others, giving a gift to someone, simple requests and invitation).
- **Culture/ Society**
Selected topics on Japanese culture and society.

Teaching/Learning Approach

This foundation course, designed for students with no previous knowledge of the language, will focus on enabling students to master the Japanese sounds and writing systems. Through direct drills, practices and activities in class, students will participate actively in the learning process. A multimedia approach will be adopted whereby students will be exposed to audio and visual materials to enhance their understanding of the Japanese language and Japanese culture.

Assessment Approach

A variety of assessment tools will be used, including written assignments, group projects, written reports, quizzes, tests and examination(s) designed to develop and assess students' achievement of the subject's intended learning outcomes as well as their communication skills in the Japanese language.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

大新書局出版社編輯部：《大家的日本語—初級 I》（《みんなの日本語》），大新書局，2011 年版。

References

向日葵出版社編：《日語假名習字簿》，向日葵出版社，2010 年版。

大新書局出版社編輯部：《大家的日本語—初級（讀本篇）》，大新書局，2010 年版。

大新書局出版社編輯部：《大家的日本語—初級 I, II (句型練習冊)》，大新書局，2011 年版。

大新書局出版社編輯部：《大家的日本語—初級 I, II (練習 C、会話 イラストシート)》，大新書局，2007 年版。

向日葵出版社編：《日本語 90 日 1》(90 Days of Japanese Language 1)，向日葵出版社，2010 年版。

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Exclusion	CCN1022 Personal Growth and Development
Assessment	100% coursework

Aims

This subject aims to provide basic concepts of leadership and the essential skills required to become an effective leader. It enables students to know the leadership roles in a team and develop a sense of mindfulness toward others' perspectives in working with teammates. The students are provided the opportunities to understand their personal traits, values and characteristics as a foundation for leadership development; as well as areas which require improvement. It also intends to train students to reflect on their intra-personal qualities.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- acquire effective leadership concepts and skills
- identify interpersonal skills needed for leadership
- articulate and reflect from a systemic perspective of their personal traits, values and characteristics to enhance self-awareness
- identify and expand their capacity of development
- develop self-reflection skills in their lives
- develop a personal development plan and a confident self-identity

Indicative Contents

- **Leadership Concepts**
Concepts of leadership; Changing nature of leadership; New way of understanding leadership; Leadership integrity.
- **Understanding Oneself**
Self-awareness: personal traits and characteristics; Values dilemma and their resolutions; Life-career values; Personal strengths and weaknesses.
- **Understanding Others and Interaction in Teams**
Diversity consciousness; Team dynamics and team building; Roles of self-understanding in effective leadership and roles of the leader in a team; Competencies on giving and receiving feedback; Ability to build up positive human relationship.
- **Personal Development**
Present personal actions and the directions; Target areas for personal development; Realistic goals

and sense of direction for intra-personal development.

- **Planning and Action**

Specific ways to fulfill personal development needs; Action plan/s for realistic personal development.

Teaching/Learning Approach

Students are expected to take an active part in the learning process. Learning environment will be engaging, challenging and fun. Lectures will be delivered to cover the conceptual parts of the subject. Class exercises and projects will be built-in as means to help students to integrate and apply the concepts gained.

In tutorials and skills workshops, students will be grouped into small teams. Small group teaching will facilitate students' participation and interaction. Various teaching and learning methods will be used such as role play, problem-based learning, simulation, and guest talks. Through experiential learning, students will be able to share their life experience to enhance their leadership and intra-personal development.

Assessment Approach

Continuous assessment will be adopted in this subject in order to give maximum space for students to put their ideas into practice. Students will be invited to hand in their portfolio regularly to show their reflection and personal leadership development throughout the learning in the subject.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended References

Adair, J. E. (2005) *How to grow leadership: The Seven Key Principles of Effective Leadership Development*, USA: Kogna Page.

Corey, G., & Corey, M. S. (2010) *I never knew I had a choice: Explorations in personal growth*, Thomson.

Northouse, P. G. (2009) *Introduction to Leadership: Concepts and Practice*, Sage Publishing.

Susan, R. K., Nance, L. and Timothy, R. M. (1998) *Exploring Leadership: for College Students Who Want to Make a Difference*, Jossey-Bass.

Weiss, D. H. (1999) *The Self-management Workshop: Helping People Take Control of Their Lives and Their Work: A Trainer's Guide*, New York American Management Association.

林佩璇主編， 陳正雄編著：《掌握人心的領導術 = Inspiring Leadership》國家出版社，2010 年版。

麥克斯·帝普雷著、江麗美譯：《領導的藝術》經濟新潮社，2008 年版。

區祥江著：《生命軌迹：助人成長的十大關鍵》突破，2000 年版。

陳寶釗著：《創出積極人生 NLP 應用手冊》明窗，2008 年版。

楊小雲著：《欣賞別人、肯定自己》健行文化，1994 年版。

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

The primary focus of this course is to help students begin to plan for their own personal financial future. It explains the financial tools and techniques relating to their own financial needs. It helps prepare students to evaluate the alternatives they will be facing while making personal financial decisions. The subject also helps students develop the skills required to become an informed consumer of financial products.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the importance of personal financial planning
- develop personal financial statements and plans
- acquire the skill to look at, evaluate, and make decisions about financial alternatives and its relation to their financial needs
- describe the characteristics of various financial products, such as credit cards, consumer loans, insurance and investment products

Indicative Contents

- **Personal Financial Planning**
Financial planning process; Personal financial goals; Factors affecting financial decisions; Time value of money.
- **Money Management**
Resources and choices; Financial statements; Budgeting; Checking and saving accounts; Risk assessment and strategies.
- **Purchasing Decision**
Buying plans; Sources and benefit of credits; Consumer loans; Credit problems.
- **Insurance Planning**
Life and health insurance; Property and liability insurance.
- **Saving and Investing**
Saving and investment principles and strategies; Investment options.

- **Financial Future**
Retirement planning; Estate planning.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of financial planning processes and techniques supported by hypothetical and their own examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of importance of personal financial planning.

Tutorials will provide students with opportunities to develop skills to prepare their own financial plans and evaluate the financial alternatives discussed in lectures. Activities in tutorials will normally include student presentations, discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Kapoor, J., Dlabay, L. and Hughes, R. J. (2012) *Personal Finance*, 10th Ed., McGraw-Hill/Irwin.

References

Bajtelsmit, V. L. and Rastelli, L. G. (2008) *Personal Finance*, Wiley Pathways.

Cheng, L., Leung, T. Y. and Wong, Y. H. (2009) *Financial Planning & Wealth Management. An International Perspective*, McGraw Hill.

Gitman, L. J. and Joenk, M. D. (2011) *Personal Financial Planning*, 12th Ed., Thomson South-Western.
Ernst & Young, Nissenbaum, M., Raasch, B. J. and Ratner, C. L. (2004) *Ernst & Young's Personal Financial Planning Guide*, 5th Ed., John Wiley & Sons.

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Exclusion	CCN1020 Leadership and Intra-personal Development CCN2037 Self Understanding and Communication Skills
Assessment	100% coursework

Aims

This subject aims to increase students' self-understanding, to enhance their self-awareness, and to expand their capacity of self-management and development. It facilitates their understanding of personal characteristics and of themselves in relation to the social systems they have been brought up in. It also equips them with a positive mind set and a humanistic attitude to human actions.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- articulate and reflect from a systemic perspective upon their personal abilities, values, attitudes and life goals in order to enhance self-awareness
- identify their personal characteristics in relation to the social systems
- identify and expand their capacity of development
- acquire the essential tools of self-management
- develop a positive mind set and a humanistic attitude to human actions

Indicative Contents

- **Self-understanding**
Students' growth in relation to their significant others and important events in life; Personal strengths and weaknesses; Self-acceptance.
- **Self-awareness**
Awareness of oneself, of others and of reality; Awareness of prejudice and stereotyping; Perceiving life in a humanistic way.
- **Values Clarification**
Formation of values; Values dilemma and their resolution; Impact of social system on life script.
- **Self-management**
Emotional Quotient (EQ); Adversary Quotient (AQ); Capacity of coping with life crisis.
- **Self-development**
Understanding the present personal actions and the direction that should be taken; Identifying target

areas and setting realistic goals for personal development; Internal locus of control: a sense of inner direction for personal development.

- **Planning and action**

Identifying specific ways to fulfill personal needs and goals; Life-long learning; Life career perspective: formulating realistic study and career action plans.

Teaching/Learning Approach

Students will be expected to take an active part in the learning process. Lectures will cover the conceptual parts of the subject. Class exercises will be built in as means to help students to integrate and apply the concepts gained.

In tutorials and skills workshops, students will be grouped into small teams. Small group teaching facilitates students' participation and interaction. Various teaching and learning methods such as role play, problem-based learning, simulation, and guest talks will be used. Through experiential learning, students will be able to share their life experience in order to enhance their personal development.

Assessment Approach

Continuous assessment will be adopted in this subject in order to give maximum space for students to put their idea into practice. Students will be invited to hand in their portfolio regularly to show their reflection and/or development throughout the learning in the subject.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Corey, G. and Corey, M. S. *I Never Knew I Had a Choice: Explorations in Personal Growth*, 9th Ed., Thomson.

References

Ford, L. (1997) *Game Plan: A Guide for Improving Human Relations and Personal Adjustment*, Prentice Hall.

Johnson, D. W. (2009) *Reaching Out: Interpersonal Effectiveness and Self-actualization*, Allyn and Bacon.

Leary, S. (1994) *Activities for Personal Growth: A Comprehensive Handbook of Activities for Therapists*, MacLennan & Petty.

Schiraldi, G. R. (2001) *The Self-esteem Workbook*, New Harbinger Pub.

Stein, S. J. (2006) *The EQ Edge: Emotional Intelligence and Your Success*, Kogan Page.

Weiss, D. H. (1999) *The Self-management Workshop: Helping People Take Control of Their Lives and Their Work: A Trainer's Guide*, New York American Management Association.

乙武洋匡著，劉子倩譯：《五體不滿足》，圓神，1999 年版。

莊安祺譯：《逆境商數》，時報文化，1997 年版。

區祥江著：《生命軌迹：助人成長的十大關鍵》，突破，2000 年版。

楊小雲著：《欣賞別人、肯定自己》，健行文化，1994 年版。

程度	1
學分	3
教學語言	普通話
修讀的必備條件	無
評估方法	60% 課堂習作 40% 期終考試

科目目標

本科目旨在教授學生普通話的語音系統及漢語拼音體系知識，鞏固他們對普通話語音的認識，並在此基礎上增強學生對普通話和粵語詞彙、語法區別的比較認識，從而使他們能夠恰當、準確、流利地在日常生活中運用規範普通話進行交際。

科目統籌小組在籌備講授及評核本課程時，須參照相關的「課程內容藍圖」，了解本科目的角色定位，如何在課程層面上協助學生達到預期的學習成果。

學習成果

學生成功完成本科目，應能：

- 掌握整套漢語拼音系統，如認讀聲母、韻母、聲調等，同時加強對普通話語音特點如輕聲、兒化、變調的認識，從而能夠恰當、準確、有效地運用普通話；
- 看拼音讀、寫漢語辭彙和句子；
- 瞭解及分辨普通話和粵語在語音、詞彙和語法上的差別，並有能力把日常粵語常用辭彙和句子翻譯成規範普通話書面語和口語；
- 掌握普通話表達和溝通技巧。通過小組合作和互相觀摩來培養自我學習的能力和團隊合作精神，同時增強使用普通話的自信心。

課程內容

- **普通話語音訓練**
普通話聆聽及辨音練習、多音字練習、輕聲、兒化、變調的發音訓練、普通話說話、朗讀訓練。
- **漢語拼音系統**
教授整套漢語拼音系統、漢語拼音聲母、韻母、聲調、漢語拼音拼寫規則。
- **普粵對比及翻譯**
普粵詞彙比較和對譯、普粵語法對比及句子翻譯、普通話名詞量詞的搭配。
- **會話訓練**
有關日常生活的會話訓練，掌握如自我介紹、購物、旅行、用膳等情境的普通話表達技巧。

教學方法

主講課主要由講師為學生講解課文中的語音、辭彙和語法現象，學生依次朗讀及做書面練習，講師會使用多媒體教材作領讀及聆聽訓練。

導修課由講師準備課外練習，包括書面練習和口語訓練，學生可分小組或個人進行；口語訓練會以角色扮演、專題討論、小組報告等形式進行。

評核方法

本科目兼用持續評估及綜合評估方法。持續評估方面，學生須完成個人口語評估、會話評估及期中測驗，具體的評估方式如下：

(i)	個人口語評估：以個人短講的方式評估。
(ii)	會話評估：學員分為三至四人一組，自選題目，編寫並表演一段情景會話。
(iii)	期中測驗：內容包括漢語拼音辨音；看漢語拼音拼寫漢語詞語及句子；粵語方言詞語、短句與普通話的對譯；普通話多音字；聽力測驗。

另有期末考試，評估方式包括口試和筆試，綜合檢測學生掌握本科目的水平。

每班的教學計劃 (Teaching Plan) 詳述個別習作佔整體評核的實際比重。學生收到習作或持續評核成績時，均會獲告知習作所評核的是那些預期學習成果。

學生所需的努力

除了 42 小時的課堂講授外，學生還須要練習短講、會話，完成課程佈置的各種習作、報告，與同學進行小組工作，協作完成會話評估，並準備測驗及考試。預期學生在課堂外所花的時間約為 84 小時。

指定課本

袁振華、曾迎、周文駿編著：《活用普通話》，中華書局，2011 年版。

自編大專普通話輔助教材。

參考書

中國社會科學院語言研究所詞典編輯室編：《現代漢語詞典》第五版，商務印書館，2005 年版。

國家語言文字工作委員會普通話培訓測試中心：《普通話水平測試實施綱要》，商務印書館，2004 年版。

曾子凡編著：《香港人學說普通話》，三聯書店(香港)有限公司，2009 年版。

曾子凡編著：《廣州話普通話口語詞對譯手冊》，三聯書店，2002 年版。

普通話研習社編：《普通話》第一冊，普通話研習社，2001 年版。

李明、石佩文編著：《漢語普通話語音辨正》，北京語言文化大學出版社，1998 年版。

王國安主編，張少雲、彭增安著：《普通話發音基本功》，商務印書館，1999 年版。

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Exclusions	CCN2036 Hong Kong Society
Assessment	50% coursework 50% examination

Aims

This subject aims at introducing students to the history and culture of Hong Kong. It also helps students to develop their analytical and critical thinking skills for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the development of Hong Kong from the 19th to the 21st century from a historical perspective
- trace the political, socio-economic and cultural change of Hong Kong in relations to China and the world
- apply relevant knowledge and concepts to the analysis of issues and problems in Hong Kong
- demonstrate the ability of independent judgment on present-day Hong Kong social values and cultural practices
- develop a lifelong interest in reading and studying Hong Kong

Indicative Contents

- **Introduction**
The geographical conditions of Hong Kong; The historical development of Hong Kong before the coming of the British.
- **Beginning of Colonial Hong Kong, 1842-1911**
The cession of Hong Kong; The Taiping Rebellion; The 1911 Revolution.
- **Emergence of the Hong Kong Problem, 1911 - 1945**
Boycotts and strikes in the 1910s and the 1920s; The Second World War.
- **Crown Colony for Ever, 1946 - 1979**
Interaction between the new PRC government and Hong Kong; The riots in the 1960s; The administration of MacLehose.
- **Towards the Joint Declaration, 1979 - 1984**

Sino-British negotiations on the future of Hong Kong; Reactions in Hong Kong regarding the negotiations.

- **Hong Kong in Transition, 1985 - 1991**

Crisis of confidence; Democratic debates; The Tian'anmen Massacre.

- **End of Cooperation and a new era, 1992 – post-1997**

The interplay between Britain, China and Hong Kong before the handover; The HKSAR government.

- **Case studies of cultural topics**

The roles of women in Hong Kong; Gender issues in Hong Kong; popular culture; Film culture.

Teaching/Learning Approach

An interactive approach will be adopted: students will be required to actively participate in discussions and presentations. Audio and visual materials will also be used to enhance students' understanding of the teaching contents. Students will be divided into groups to present a topic on the history and/or culture of Hong Kong.

Assessment Approach

A variety of assessment tools will be used, such as case studies, written reports, individual assignments, presentations, tests and an examination designed to assess students' critical thinking as well as analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Carroll, J. M. (2007) *A Concise History of Hong Kong*, Rowman & Littlefield Publishers, Inc.

Tsang, Steve. (2004) *A Modern History of Hong Kong: 1841-1998*, London: I. B. Tauris.
References

Chan, L. K. C. (1990) *China, Britain, and Hong Kong: 1895-1945*, The Chinese University Press.

Faure, D. (Ed.). (2003) *Hong Kong: A Reader in Social History*, Oxford University Press.

Smith, C. T. (1995) *A Sense of History. Studies in the Social and Urban History of Hong Kong*, Hong Kong Educational Publishing Co.

王賡武主編：《香港史新編》上、下冊，三聯書店(香港)有限公司，1997 年版。

蔡榮芳：《香港人之香港史》，牛津大學出版社，2001 年版。

Level	1
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject equips learners with proper and relevant analytical tools and cultural knowledge for interpreting, analysing and appreciating artworks with critical and cultural awareness of their creative metamorphosis structured in themes pertinent to the development of western and eastern art genres.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- interpret artworks with critical and cultural awareness
- understand the creative process of major artworks
- appreciate, analyse and criticise artworks & performances
- apply relevant concepts, principles and terminology to artworks

Indicative Contents

- **Art Analysis**
Color; Form; Shape; Materials; perspective; Spatial orientation and theme adopted in the creative process of an art piece and the foundation of art stream.
- **Art Genres**
Painting; Sculpture; Pastiche; Collage; Installation; Public Art; Photography; Propaganda Art; Multimedia and digital art; Performing Art.
- **Art Themes**
Religion; Humanity; Gender; Social Class; Reality; Society; Representation; Symbolism and allegory; individuality and collectivity.
- **Art Streams and Art Schools**
Modernity and Modernism; Anti-realism and Dehumanisation; Impressionism and Postimpressionism; Expressionism and Avant-Gardism; Kitsch and Consumerism; Pop Art; Anti-aesthetics; Postmodernism; Postcolonialism.

Teaching/Learning Approach

Lectures will be grounded in the explication of art concepts and theories and their relevant cultural knowledge contextualised by selected art works. Museum and gallery visits, if appropriate, will be arranged to supplement school teaching.

Tutorials will provide students with the opportunity to learn and apply analytic concepts and interpretive tools for the discussion, understanding and appreciation of artworks and case studies.

Assessment Approach

A variety of assessment tools, including written reports, test and examination, will be adopted to develop and assess students' achievement of the subject's intended learning outcomes as well as the depth of art analysis and art appreciation.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Aumont, J. et. al. (1992) *Aesthetics of Film*, Texas University Press.

Barnet, S. (2010) *A Short Guide to Writing about Art*, 10th Ed., Prentice Hall.

Berger, J. (1996) *Ways of Seeing*, Penguin.

Eldridge, R. (2003) *An Introduction to the Philosophy of Art*, Cambridge University Press.

Gombrich, E. H. (1996) *The Essential Gombrich: Selected Writings on Art & Culture*, Phaidon.

Lucie-Smith, E. (1992) *Art & Civilisation*, Lawrence King.

Margolis, J. (Ed.). (1987) *Philosophy Looks at the Arts: Contemporary Readings in Aesthetics*, Temple University Press.

Schapiro, M. (1999) *Worldview in Painting - Art & Society*, Braziller.

李澤厚：《華夏美學》，商務印書館(香港)有限公司，2010 年版。

孔智光：《中西古典美學研究》，中華書局，2009 年版。

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusions	CCN2101 Financial Accounting
Assessment	50% coursework 50% examination

Aims

This subject introduces the role of accounting in business and management. It enables students to understand the basic accounting concepts and to apply these concepts to the recording, preparation and interpretation of basic financial statements.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the nature and meaning of accounting
- understand the principles of bookkeeping and the work involved in the preparation of financial accounts for traders and corporations
- apply relevant accounting concepts and principles in the preparation and interpretation of financial statements
- understand the meaning of financial reporting and how accounting data is being applied in business

Indicative Contents

- **Introduction to Accounting**
Principles and scope of financial accounting and management accounting; Users of financial accounts and statements; Accounting cycle; Accounting standards; Ethical consideration in financial reporting.
- **Financial Accounting Framework**
Double-entry bookkeeping and accounting systems; Accounting treatment of fixed assets, current assets, liabilities, provisions and reserves, and capital; Preparation of journal, ledger accounts, year-end adjustments, closing entries and trial balance.
- **Interpretation of Financial Statements**
Need for interpretation of financial statements; Calculation and interpretation of basic financial ratios.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key concepts and applications of the accounting principles.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the accounting techniques to the analysis of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including individual assignments, in-class exercises, tests and an examination designed to develop and assess students' analytical and quantitative skills in solving accounting problems.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Curran, M. G. (2006) *Accounting Fundamentals*, 7th Ed., McGraw Hill.

References

Ainsworth, P., Deines, D. (2011) *Introduction to Accounting: An Integrated Approach*, 6th Ed., McGraw-Hill.

Black, G. (2009) *Introduction to Accounting and Finance*, Prentice Hall.

Bendrey, M., Hussey, R. and West, C. (2004) *Essentials of Financial Accounting in Business*, McGraw-Hill.

Dyson, J. R. (2010) *Accounting for Non Accounting Students*, 8th Ed., Prentice Hall.

Wild, J. J., Shaw, K., Chiappetta, B., (2009) *Fundamental Accounting Principles*, McGraw-Hill.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusion	CCN2002 Introduction to Economics
Assessment	50% coursework 50% examination

Aims

This subject aims to provide students the basic concepts and theories of economics issues from both micro and macro perspectives. It provides the conceptual framework for students to conduct simple analysis of economic issues and understand how economics can help an individual to know more about human behaviour, society, the economy and the world.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the basic economic concepts and theories from both micro and macro perspectives
- use basic economic theories to comment on the effectiveness of social and government policies to the society
- conduct simple analysis on the issues related to economics and social problems
- present ideas clearly with the use of simple economic diagrams and examples

Indicative Contents

- **The Scope of Economic Analysis**
Concept of scarcity, choice and opportunity cost; Nature of economics as a science for understanding human behaviour; the difference between microeconomics and macroeconomics.
- **Demand, Supply and the Price Mechanism**
The law of demand; Elasticity of demand; The law of supply; Elasticity of supply; The functions of price and the market system.
- **Market Structure**
Definition of market; general features of perfect competition and imperfect competition (monopoly, monopolistic competition, oligopoly); Arguments against and for legislation to enhance 'competition' and regulation of monopoly; Production process.
- **Government Intervention**
Role of government; Definition of 'market failure' and examples; Tools of the government intervention and the impact on human behaviour and resource allocation.

- **Macroeconomics and National Income**

Major macroeconomic issues; Concepts and approaches to national income accounting; Relationship between national income and social welfare.

- **Fiscal Policy and Monetary Policy**

Definition of money supply in Hong Kong; Banking system and the money creation process; Roles of central bank, government spending and taxation; Demand for money; Determination of interest rate; Monetary policy; Theories of unemployment, inflation and deflation.

- **The International Economy**

International exchange and gains from trade; Trade restrictions; The foreign exchange market and alternative exchange rate regimes; Debate between protectionism and free trade.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of some concepts.

Tutorials will provide students with opportunities to deepen their understanding and to explore further the applications of theories taught. Activities in tutorials normally include student presentations and discussions of problem sets.

Assessment Approach

A variety of assessment tools will be used, including presentations, written reports, test(s) or other forms of assessments where appropriate to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills. An examination will also be held for the subject primarily as a summative assessment.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

McEachern, W. A. (2012) *Economics: A Contemporary Introduction*, 9th Ed., South-Western Cengage Learning.

References

Bade, R., Parkin, M. (2010) *Essential Foundations of Economics*, 5th Ed., Addison Wesley.

Brue, S., McConnell, C. and Flynn, S. (2009) *Essentials of Economics*, 2nd Ed., McGraw Hill/Irwin.

Mankiw, N. G. (2011) *Principles of Economics*, 6th Ed., South Western.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject is to provide students with the basic skills of calculus, which is the core of many mathematical disciplines such as optimisation, financial mathematics, statistics, simulation etc. The subject introduces students to the fundamental concepts and skills of calculus. The emphasis is on the basic understanding of the concepts, techniques and applications.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- discuss the concepts of limit of a function and continuity
- develop the understanding of derivatives of a function and the ability to compute derivatives using various rules of differentiation
- apply differential calculus to calculate rates of change, locate maxima, minima and points of inflexion, and to sketch the graph of a given function
- master the concepts of indefinite integrals as anti-derivatives and definite integrals as limit of sums and the fundamental theorem of calculus
- using various methods to evaluate indefinite integrals
- solve simple differential equations of first and second order
- develop and extrapolate mathematical concepts in solving practical problems

Indicative Contents

- **Preliminaries**
Review of trigonometry; Functions and their inverses; Limit and continuity.
- **Differentiation**
Derivatives; Mean Value Theorem; L'Hopital's Rule; Maxima and Minima; Differentials; Linear approximations; Increasing/decreasing function; Curve sketching.
- **Integration**
Definite and indefinite integrals; Methods of integration; Fundamental Theorem of Calculus; Applications.
- **Ordinary Differential Equations**
Simple first order differential equations; Second order linear differential equations with constant coefficients; Applications.

Teaching/Learning Approach

The lectures will aim to provide students with an integrated knowledge required for the understanding of the basic mathematical concepts and techniques. To develop students' ability for logical thinking, effective communication and ability to apply the theory they learn in lectures, tutorials and presentation sessions will be held.

Assessment Approach

The continuous assessment will be comprised of homework assignments, in-class quizzes and tests. The assignments will be used to assist students to reflect on and review their progress. The end-of-semester examination will be used to assess the knowledge acquired by students and their ability to apply and extend such knowledge.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Reading

Recommended Textbook

Briggs, W.L. & Cochran, L. (2011) *Single Variable Calculus*, Pearson Education.

References

Hung, K.F., Kwan, W.C.K. and Pong, G.T.Y. (2011) *Foundation Mathematics & Statistics*, McGraw Hill.

Thomas, G.B., Weir, M.D. and Hass, J. (2010) *Thomas' Calculus*, 12th Ed., Pearson Education.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	CCN1002 Practical English for College Students <i>or</i> Level 3 or above in HKDSE English Language; <i>or</i> its equivalents
Assessment	100% coursework

Aims

This subject aims to help students acquire English language competence required to study effectively in a post-secondary, English-medium learning environment. Attention is given to developing students' competence in English and to helping students adjust to studying in a post-secondary, English-medium learning environment. Where possible and appropriate, science and technology-related teaching materials are to be used.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- deliver effective oral presentations for academic purposes
- summarise and paraphrase ideas
- write short, structured academic essays
- apply reading and listening skills to improve comprehension of academic materials
- research for information, integrate ideas, and document sources properly for academic purposes
- perform critical reflection on their learning experiences and processes

Indicative Contents

- **Speaking Skills**
Oral presentations (on science and technology-related topics): planning, preparation, delivery, question-handling.
- **Writing Skills**
Summarising and paraphrasing skills; Introduction to essay writing; Process approach for writing a short, structured academic essay on a science and technology-related topic, e.g. description or exposition; Skills for writing effective sentences; Skills for proofreading and revising written text.
- **Reading and Listening Skills**
Reading skills and strategies for different purposes; Rapid reading; Skills for improving listening comprehension; Reading graphics (e.g. tables, charts and diagrams).
- **Secondary Research Skills**
Library research, online research and other forms of research; Awareness of plagiarism; Documentation of sources of information, e.g. APA style.

- **Study Skills**

Use of dictionaries and thesauruses (printed and online); English learning on the Internet.

Teaching/Learning Approach

Students will be required to participate actively in the learning process. During seminars, students will take part in a wide range of interesting and challenging language learning activities such as role-plays, discussions, individual and group activities, which help with students' studies in science subjects. In particular, students will be required to plan and collaborate with peers in a major team project/assignment which will give them an opportunity to experience learning from peers as well.

In language laboratory sessions, audio-visual materials will be used to improve students' listening and speaking skills, and the online learning platform will be used as a tool to promote extended learning after class. Students will also be encouraged to engage in constant reflection on learning processes and to evaluate their own as well as their peers' performance and team work skills in the learning tasks. Through extensive interactive practices, the course will help students gain mastery of the academic language skills needed for effective academic communication.

Assessment Approach

The assessment of this subject will be based on 100% continuous assessment. Students' spoken and written academic English skills will be assessed through a combination of individual and group assessment tasks related to the learning outcomes of the subject. Tasks may include individual written tasks, group oral tasks, group written project, quizzes and tests, etc. Students will be assessed on accuracy as well as the appropriateness of the language used in fulfilling the assessment tasks.

In addition, to encourage a spirit of enquiry and sharing and to help students explore the creativity and enjoyment of the process of learning and researching knowledge, part of students' grade will be based on their class participation throughout the course of the semester.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Langan, J. (2011) *English for Academic Studies*, New York: McGraw-Hill.*

*An abridged version of:

Langan, J. (2007) *Reading and Study Skills*, 8th Ed., New York: McGraw-Hill.

Langan, J. (2008) *College Writing Skills with Readings*, 7th Ed., New York: McGraw-Hill.

Roen, D., Glau, G.R., & Maid, B.M. (2011) *The McGraw-Hill Guide: Writing for College, Writing for Life*, New York: McGraw-Hill.

References

- Bailey, S. (2011) *Academic Writing: A Handbook for International Students*, 3rd Ed., Routledge.
- Langan, J. (2010) *Exploring Writing: Paragraphs and Essays*, 2nd Ed., McGraw-Hill.
- Langan, J. and **Goldstein, J.**(2011) *English Brushup*, 5thEd., McGraw-Hill.
- Reinhart, S. (2002) *Giving Academic Presentations*, University of Michigan Press.
- Steer, J. and Schmid, D. (1998) *The Advanced Grammar Book (Workbook)*, 2ndEd., Heinle&Heinle.
- Collins COBUILD Advanced Learner's Dictionary* (2006), 5th Ed. Harper Collins.
- Collins Thesaurus A-Z* (2006), 2nd Ed., HarperCollins.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	CCN1046 English for Academic Studies (Science and Technology) I
Assessment	100% coursework

Aims

This subject is a continuation of CCN1046 English for Academic Studies (Science and Technology) I. It aims to further enhance students' English language abilities to function effectively in a post-secondary, English-medium learning environment. Attention is given to reinforcing students' confidence in pursuing further studies in science subjects. Where possible and appropriate, science and technology-related teaching materials are to be used.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- conduct effective seminar discussions for academic purposes
- write small-scale, fully fledged research essays to present arguments
- analyse issues significant in science and technology sectors
- conduct basic research to gather primary data and information for research essays
- perform critical reflection on their learning experiences and processes

Indicative Contents

- **Speaking Skills**
Seminar discussions(on science and technology-related issues): presenting analysis and opinion, agreeing and disagreeing, asking for clarification and summarising.
- **Writing Skills**
Structure of a research essay; Writing and revising a small-scale, fully fledged research essay on a science and technology-related topic to present an argument; Incorporating data and information from different sources to support a thesis.
- **Reading Skills**
Reading and analysing science and technology-related issues; Further science vocabulary development.
- **Primary Research Skills**
Designing and conducting research interviews, surveys and questionnaires.
- **Study Skills**
Reflection on English language learning; Learning in class and working in groups.

Teaching/Learning Approach

Students will be required to participate actively in the learning process. During seminars, students will take part in a wide range of interesting and challenging language learning activities such as role-plays, discussions, individual and group activities, which help with students' studies in science subjects. In particular, students will be required to plan and collaborate with peers in a major team project/assignment which will give them an opportunity to experience learning from peers as well.

In language laboratory sessions, audio-visual materials will be used to improve students' listening and speaking skills, and the online learning platform will be used as a tool to promote extended learning after class. Students are also encouraged to engage in constant reflection on learning processes and to evaluate their own as well as their peers' performance and team work skills in the learning tasks. Through extensive interactive practices, the course helps students gain mastery of the academic language skills needed for effective academic communication.

Assessment Approach

The assessment of this subject will be based on 100% continuous assessment. Students' spoken and written academic English skills will be assessed through a combination of individual and group assessment tasks related to the learning outcomes of the subject. Tasks may include individual written tasks, group oral tasks, group written project, quizzes and tests, etc. Students will be assessed on accuracy as well as the appropriateness of the language used in fulfilling the assessment tasks.

In addition, to encourage a spirit of enquiry and sharing and to help students explore the creativity and enjoyment of the process of learning and researching knowledge, part of students' grade will be based on their class participation throughout the course of the semester.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Langan, J. (2011) *English for Academic Studies*, New York: McGraw-Hill.*

*An abridged version of:

Langan, J. (2007) *Reading and Study Skills*, 8th Ed., New York: McGraw-Hill.

Langan, J. (2008) *College Writing Skills with Readings*, 7th Ed., New York: McGraw-Hill.

Roen, D., Glau, G.R., & Maid, B.M. (2011) *The McGraw-Hill Guide: Writing for College, Writing for Life*, New York: McGraw-Hill.

References

Bailey, S. (2011) *Academic Writing: A Handbook for International Students*, 3rd Ed., Routledge.

Langan, J. (2010) *Exploring Writing: Paragraphs and Essays*, 2nd Ed., McGraw-Hill.

Madden, C. and Rohlck, T. (1997) *Discussion and Interaction in the Academic Community*, University of Michigan Press.

Oshima, A. and Hogue, A. (2006) *Writing Academic English*, 4th Ed., Addison Wesley Longman.

Spencer, C. and Arbon, B. (1996) *Foundations of Writing: Developing Research and Academic Writing Skills*, NTC.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject equips students with basics of linear algebra which are applicable in diverse disciplines. Emphasis is on introduction of fundamental methods and techniques of linear algebra as well as applications of which to practical problems.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- perform basic operations of matrix algebra and determinants
- implement techniques of solving systems of linear equations
- manipulate expressions and solve geometric problems involving vectors
- evaluate mathematical quantities associated with eigenvalues and matrix diagonalisation
- apply methods of linear algebra to solve problems in science and engineering

Indicative Contents

- **Matrix Algebra**
Matrix arithmetic; Determinants; Matrix inverses.
- **Systems of Linear Equations**
Elementary row operations; Row echelon forms; Gaussian elimination; Gauss-Jordan reduction; Cramer's rule.
- **Vector Algebra**
Basic properties and arithmetic; Scalar products; Cross products; Linearly independence.
- **Eigenvalues**
Eigenvalues and eigenvectors; Diagonalisation of matrices.

Teaching/Learning Approach

Lectures will focus on introduction and explanation of mathematical concepts and methods in linear algebra as well as on demonstration of how they can be applied to solve practical problems in science and engineering.

Tutorials will provide students with the opportunity to reinforce their understanding of methods taught in lectures and implement appropriate techniques to solve applied problems. These sessions will develop effective problem-solving and presentation skills of students.

Assessment Approach

A variety of assessment tools will be used, including assignments, tests and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including analytical skills and problem-solving skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Anton, H. (2010) *Elementary Linear Algebra*, 10th Ed., Wiley.

References

Lay, D. C. (2012) *Linear Algebra and Its Applications*, 4th Ed., Pearson/Addison-Wesley.

Leon, S. J. (2010) *Linear Algebra with Applications*, 8th Ed., Pearson/Prentice Hall.

Strang, G. (2009) *Introduction to Linear Algebra*, 4th Ed., Wellesley-Cambridge Press.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject provides a broad foundation in mechanics and thermal physics to those students who are going to study science, engineering, or related programmes. Throughout the subject, students can have a general understanding of physics theories, and real-life phenomena, examples and applications.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- solve simple problems in mechanics using calculus and vectors
- define simple harmonic motion and solve simple problems in oscillations
- explain the formation of acoustical standing waves
- explain changes in frequency received in terms of Doppler's effect
- explain ideal gas laws in terms of kinetic theory
- apply the first and second laws of thermodynamics to simple processes

Indicative Contents

- **Mechanics**
Calculus-based kinematics, dynamics and Newton's laws of motion; Calculus-based mechanics involving application of impulse, momentum, work and energy, etc.; Conservation laws; Gravitation field; Systems of particles; Collisions; Rigid body rotation; Angular momentum.
- **Oscillations**
Oscillatory motion; Simple harmonic motion; Pendulum.
- **Mechanical waves**
Longitudinal and transverse waves; Travelling and standing waves; Doppler effect; Acoustics.
- **Thermal physics**
Conduction, convection and radiation; Black body radiation and energy quantisation; Ideal gas and kinetic theory; Work, heat and internal energy; The first law of thermodynamics; Entropy and the second law of thermodynamics; Carnot cycle; Heat engine and refrigerators.

Teaching/Learning Approach

The subject will be composed of lectures, tutorials and laboratory sessions. Lectures will provide theory-based teaching on the fundamentals in mechanics and thermal physics. Examples will be used to illustrate the concepts and ideas whenever appropriate. Tutorials will provide students with the opportunity to reinforce their understanding of the concepts taught in lectures. Laboratory sessions will be used to illustrate and assimilate certain principles of physics in relation to daily life phenomena or experience.

Assessment Approach

A variety of assessment tools, including assignments, laboratory report(s), test(s) and an examination, will be used to assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Serway, R.A. and Jewett, J.W. (2010) *Physics for Scientists and Engineers with Modern Physics*, 8th Ed., Cengage Learning.

References

Bauer, W. and Westfall, G.D. (2011) *University Physics with Modern Physics*, 1st Ed., McGraw Hill.

Halliday, D, Resnick, R and Walker, J. (2011) *Fundamentals of Physics*, 9th Ed., John Wiley & Sons.

Young, H.D. and Freedman, R.A. (2011) *University Physics*, 13th Ed., Pearson/Addison-Wesley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject aims to introduce students to some fundamental principles and knowledge of statistics. Studying the subject also helps develop students' ability to compile statistical data, carry out simple statistical calculation and understand the elements of probability and probability distributions. Applications of statistical techniques are emphasised to solve practical problems in science and engineering.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand common practices in data collection
- acquire techniques to describe/present the dataset
- apply probabilistic and statistical reasoning to describe and analyse essential features of data sets and problems in real-life situations
- use and extend knowledge of statistical inference techniques and their application in real-life situations

Indicative Contents

- **Descriptive Statistics**
Introduction to statistics; Displaying numerical data through the use of tables and charts; Measures of central tendency; Measures of variation.
- **Probability**
Experiment; Events; Sample space and probability; Probability rules; Conditional probability; Bayes' Theorem.
- **Random Variables and Expectation**
Types of random variables; Jointly distributed random variables; Expectation; Variance.
- **Discrete Probability Distributions**
Discrete random variables and probability distributions; Bernoulli Distribution; Binomial Distribution; Poisson Distribution; Hypergeometric Distribution.
- **Continuous Probability Distributions**
Continuous random variables and probability distributions; Uniform Distribution; Normal Distribution; Exponential Distribution; Gamma Distribution; Chi-Squared Distribution.
- **Distributions of Sampling Statistics**

Sampling distribution of sample mean; Sampling distribution of sample variance; Central Limit Theorem.

- **Inferential Statistics**

Point estimation; Interval estimation; Determination of sample size required.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of probabilistic and statistical concepts, theories and terminologies supported by real examples wherever appropriate.

Tutorials will provide students with the opportunity to practice their newly learnt concepts on data examples. Activities will include numerical exercises and peer discussions of data analysis results.

Assessment Approach

Effective assessment tools will be adopted, including end-of-chapter type problems, written assignments, tests and an examination, all designed to develop and assess the analytical skills and problem solving skills of students.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Ross, S.M. (2009) *Introduction to Probability and Statistics for Engineers and Scientists*, 4th Ed., Elsevier Academic Press.

References

Devore, J.L. (2012) *Probability & Statistics for Engineering and the Sciences*, 8th Ed., Cengage Learning.

Walpole, R.E., Myers, R.H., Myers, S.L. and Ye, K.Y. (2012) *Probability and Statistics for Engineers and Scientist*, 9th Ed., Prentice Hall.

Weiss, N.A. (2012) *Introductory Statistics*, 9th Ed., Addison Wesley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject provides students with fundamental knowledge in physics focusing on the topics of waves and electromagnetism. It prepares students to study science, engineering or related programmes. Throughout the subject, students can have a general understanding of physics theories, and real-life phenomena, examples and applications.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- apply simple physics laws to explain image formation and phenomena related to the wave character of light
- define electrostatic field and potential
- use physical principles to solve problems in electrostatic and on interaction between current and magnetic field
- apply electromagnetic induction to various phenomena
- solve simple problems in AC circuits

Indicative Contents

- **Light and optics**
Nature of light, reflection and refraction; Image formation by mirrors and lenses; Compound lens; Microscope and telescope.
- **Waves**
Superposition of waves; Huygen's principle; Interference and diffraction; Interferometers and diffraction grating; Polarisation.
- **Electricity**
Charge and field; Coulomb's law and Gauss' Law; Electrostatic field and potential difference; Capacitors and dielectric; Current and resistance; Ohm's law; Electromotive force; Potential difference and RC circuits.
- **Electromagnetism**
Magnetic force on moving charges and current; Hall effect; Biot-Savart law and Ampere's law; Faraday's law of induction and Lenz's law; Self-inductance and mutual inductance; Transformers;

AC circuits and applications.

Teaching/Learning Approach

The subject will be composed of lectures, tutorials and laboratory sessions. Lectures will provide theory-based teaching on the fundamentals in optics and electromagnetism. Examples will be used to illustrate the concepts and ideas whenever appropriate. Tutorials will let students apply and reinforce the knowledge gained from lectures, and develop a deeper understanding of the subject in relation to daily life phenomena or experience. Laboratory sessions will allow students to understand, verify, and apply knowledge developed from lectures.

Assessment Approach

A variety of assessment tools, such as assignments, laboratory report(s), test(s) and an examination, will be used to assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Serway, R.A. and Jewett, J.W. (2010) *Physics for Scientists and Engineers with Modern Physics*, 8th Ed., Cengage Learning.

References

Bauer, W. and Westfall, G.D. (2011) *University Physics with Modern Physics*, 1st Ed., McGraw Hill.

Halliday, D., Resnick, R. and Walker, J. (2011) *Fundamentals of Physics*, 9th Ed., John Wiley & Sons.

Young, H.D. and Freedman, R.A. (2011) *University Physics*, 13th Ed., Pearson/Addison-Wesley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to introduce students from various backgrounds to the fundamental knowledge of biology which is essential for higher level of study in a variety of biology-related disciplines.

After successful completion of this subject, students should be able to appreciate the basic features and integrative nature of different biological components such as cellular structure and function, genetics and inheritance, microbiology, zoology, botany and ecology for further study of biology at the university entry level.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the basic structure and functions of the cell
- understand the fundamental of genetic and inheritance
- comprehend the structure and relation of microbes with man and environment
- have a basic understanding of the structure and function of animals and plants
- appreciate the importance of evolution and biological diversity
- aware the impact of human in environment and pollution

Indicative Contents

- **Structure and Function of the Cell**
Molecules of life: atoms and elements, proteins, carbohydrates, nucleic acids and lipids; Heredity and genetics, basic changes during cell cycle; Transcription of DNA and translation to protein; Enzymes, hormones and antibodies; Cytology and histology.
- **Microbiology**
Prokaryotes and eukaryotes; Types of micro-organisms: Gross structure and classification; Mode of nutrition; Infectious diseases and prevention; Ecological role of microbes.
- **Human Biology**
Gross human anatomy; Physiology of basic processes: Support and movement; Control and coordination; Circulation and respiration; Digestion, metabolism and excretion; Regulation and homeostasis; Reproduction and inheritance.
- **Animal and Plant Biology**

Biology of basic and diversity of life-forms; Darwinian theory of evolution of species; Introduction to taxonomy system; Mode of nutrition; Food chain; Concept of biosphere.

▪ **Environment and Ecology**

Population ecology: impact of human population on environment and other biological species; Sustainable resources; Environmental pollution and remedies; Greenhouse effect and global warming; Ozone protection against irradiation on Earth.

Teaching/Learning Approach

Students will be introduced various basic topics in biology to broaden and explore their area of interest. Students are free to choose essays and presentations on one or more of these topics, so that they can specialise in the topics that arouse their interest most. Tutorials provide a venue for revision and reinforcement of the lecture material. The tutorial activities include discussions of tutorial questions and appreciation of the controversial topics such as global warming, relation of micro-organisms with man, evolution and extinction of species, and the relation of science to environment and ecology.

Assessment Approach

A variety of assessment tools will be used, including written essays, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking and analytical skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Eldon E., Frederick C. and David B. (2005) *Concepts in Biology*, 11th Ed., McGraw Hill.

Campbell, N.A., Reece, J.B., Taylor, M.R., Simon, E.J. and Dickey, J.L. (2009) *Biology: Concepts and Connections*, 6th Ed., Pearson/Benjamin Cummings.

References

Freeman S. (2005) *Biological Science*, 2nd Ed., Pearson Prentice Hall.

Losos, J.B., Mason, K.A. and Singer, S.R., *Biology*, McGraw-Hill Higher Education (latest ed.).

Cain, M.L. and Bowman, W.D and Hacker, S.D. (2011) *Ecology*, 2nd Ed., Sinauer Associates.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces the fundamental concepts in chemistry for understanding structure and properties of the material universe. Throughout the course, students will visualise the physical and chemical changes through the understanding of molecular behaviour. It provides sufficient information for students to apply the chemical principles to daily life. This one-semester introductory course for chemistry is particularly useful for students whom have not studied NSS chemistry.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the core concepts of chemistry
- describe the fundamental concepts of atomic structure and molecular bonding
- describe chemical events using standard representations
- apply and incorporate the chemical principles and knowledge learned to solve chemical problems

Indicative Contents

- **Foundation**
Atoms; Molecules and ionic compounds; Masses of atoms; Stoichiometry; Naming of chemical compounds; Chemical reactions and balanced equations; Physical properties of compounds; Periodic table.
- **Chemical Reactions:**
Chemical reactions and balanced equations; Major reaction types; Enthalpy of chemical processes.
- **Atoms**
Atomic theory; Subatomic particles; Many-electron atoms; Electronic configuration; General periodic trends in properties among elements; Isotopes.
- **Chemical Bonding**
Nature of chemical bonding: ionic bond, covalent bond, metallic bond; Intermolecular forces; Bond polarity; Molecular shape by VSEPR method.
- **Principle of Chemical Equilibria**
Reversible reactions; Equilibrium constant; Acids and bases.

Teaching/Learning Approach

The course is composed of three parts: lectures, tutorials and laboratory sessions. Lectures provide theory based teaching on physical and organic chemistry. Examples and references will be given to students whenever appropriate. Tutorials provide students with opportunities to broaden, enlighten and reinforce the general knowledge obtained in the lectures. Students will be involved in problem based activities, classroom feedback, case studies, presentations, and discussions in the tutorial. Laboratory sessions allow students to understand, verify, and apply knowledge developed from lectures.

Assessment Approach

A variety of assessment tools will be used, including presentations, group discussion, written laboratory reports, classroom feedback, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Laird, B.B. (2009) *University Chemistry*, New York: McGraw-Hill.

References

Brady, J.E. (2009) *Chemistry: Matter and its Changes*, 5th Ed., Hoboken, N.J.: Wiley.

Bauer, R. C. (2009) *A Conceptual Introduction to Chemistry*, 2nd Ed., New York: McGraw-Hill.

Chang, R. (2010) *Chemistry*, 10th Ed., New York: McGraw Hill.

Chang, R. (2011) *General Chemistry: The Essential Concepts*, 6th Ed., New York: McGraw Hill.

Malone, L.J., Dolter, T.O. (2010) *Basic Concepts of Chemistry*, 8th Ed., Hoboken, N.J.: Wiley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject is designed for students with no background in physics studies. It provides students with fundamental concepts in major topics of physics such as mechanics, heat, wave and electromagnetism. Moreover, it helps students understand the methodologies in physics, the relationships between physics and technological applications, and prepare their further study in the fields of science and technology. Furthermore, it develops students' analytical and problem solving skills.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- solve simple problems in kinematics and Newton's laws
- solve problems in heat capacity and latent heat
- explain phenomena related to the waves' characteristics
- define electrostatic field and potential
- solve problems on the interaction between current and magnetic field
- describe the basic principle of electromagnetic induction

Indicative Contents

- **Mechanics**
Scalars and vectors; Kinematics and dynamics; Newton's laws of motion; Circular motion; Momentum, impulse, work and energy; Conservation of momentum and conservation of energy.
- **Thermal physics**
Heat and internal energy; Heat capacity; Latent heat; Conduction, Convection and radiation; Ideal gas law.
- **Waves**
Nature of waves; Waves motion and propagation; Superposition of waves; Standing waves; Sound waves Reflection and refraction.
- **Electromagnetism**
Charges; Coulomb's law; Electric field and potential; Current and resistance; Ohm's law; Electric circuit fundamentals; Magnetic field; Magnetic force on moving charges and current-carrying conductors; Electromagnetic induction.

Teaching/Learning Approach

The subject will be composed of lectures and tutorials. Lectures will provide theory-based teaching on the fundamentals in mechanics, waves and electromagnetism. Examples will be used to illustrate the concepts and ideas in the lecture whenever appropriate. Tutorials will provide students with the opportunity to practice and apply their knowledge gained from lectures.

Assessment Approach

A variety of assessment tools, including assignments, test(s) and an examination, will be used to assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Wilson, J.D., Buffa, A.J. and Lou B. (2009) *College Physics*, 7th Ed., Addison-Wesley.

References

Hewitt, P.G., Suchocki, J.A. and Hewitt, L.A. (2009) *Conceptual Physics*, 11th Ed., Addison-Wesley.

Griffith, W. T. and Brosing, J. (2011) *Physics of Everyday Phenomena*, 7th Ed., McGraw-Hill.

Young, H.D. and Freedman, R.A. (2011) *University Physics*, 13th Ed., Addison-Wesley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject serves as an introduction to students on the basic knowledge and concepts in various areas of biology at the university entry level. It provides the main framework to biology which includes fundamentals of cellular structure and function, genetics and inheritance, zoology, botany and ecology.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the basic structure and functions of the cell
- understand the principle of genetics and inheritance
- comprehend the structure and function of animals
- have a basic understanding of the structure and function of plants
- appreciate the importance of evolution and biological diversity

Indicative Contents

- **Science of Biology**
Characteristics of living things; Level of biological organisation; Three major domains: Bacteria, Archaea, and Eukarya; Six kingdoms of life.
- **Structure and Function of the Cell**
Structure and functions of the cellular components; Energy harvest and trap with chemical bonding; Photosynthesis.
- **Genetics and Inheritance**
Reproduction and inheritance; Molecular biology of gene; Control of gene expression at the cellular level; DNA structure and DNA technology.
- **Evolution and Biological Diversity**
Darwin's theory of evolution; Origin and evolution of life; Diversity of life.
- **Animal Form and Function**
Animal structure and functions; Homeostasis conferred by various systems: digestion and metabolism, gaseous exchange and circulation, immune, osmoregulation, hormone and endocrine, nervous systems and sensation, and locomotion.

- **Plant Form and Function**

Plant structure; Reproduction and development; Nutrition and transport; Control and growth.

- **Ecology**

The Biosphere; Behaviour adaptations to environment; Population ecology; Communities and ecosystems.

Teaching/Learning Approach

Lectures will present the fundamentals of various aspects of biology followed by elaboration of the key concepts and the underlying principles to ensure students to have the basis for further science education. Tutorials will be arranged to stimulate students' interests and reinforce their knowledge and concepts. The activities in tutorials normally include discussions of tutorial questions and problems.

Assessment Approach

A variety of assessment tools will be used, including written essays, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including critical thinking and analytical skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Campbell, N.A., Reece, J.B., Taylor, M.R., Simon, E.J. and Dickey, J.L. (2009) *Biology: Concepts and connections*, 6th Ed., Pearson.

Hoefnagels, M. (2012) *Biology: Concepts and investigations.*, 2nd Ed., McGraw Hill.

Johnson, G.B. (2012) *The Living World*, 7th Ed., McGraw Hill.

References

Hickman, C.P. Jr. (2004) *Integrated principles of zoology*, 12th Ed., McGraw Hill.

Mader, S.S. (2011) *Inquiry into life*, 13th Ed., McGraw Hill.

Mauseth, J.D. (2009) *Botany: An introduction to plant biology*, 4th Ed., Jones and Bartlett.

Presson, J.C. (2008) *Biology: Dimensions of life*, McGraw Hill.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces a molecular perspective for understanding the natural world and helps students to identify the fundamental concepts on physical and chemical changes of matters. Throughout the course, students will visualise the physical and chemical changes through the understanding of molecular behavior. It provides sufficient information for students to continue chemistry instruction at college level. Studying the subject also helps develop students' analytical thinking for their life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the macroscopic properties of the states of matters
- understand the basic principles of chemical energetics and equilibria
- apply and incorporate the chemical principles and knowledge learned to solve chemical problems and to appreciate modern applications in real life
- demonstrate the abilities in communication as well as skills in problem-solving and analytical thinking

Indicative Contents

- **Measurement in Chemistry**
Significant figures; SI units; Substances and mixtures; Solution and concentration; Mole and Avogadro's number; Chemical reactions and balanced equations; Temperature scales.
- **Thermochemistry**
Heat and work; The First Law of Thermodynamics; Heat of Reactions (ΔU and ΔH); Hess's law.
- **Chemical Kinetics**
Reaction rates and measurements; The rate law and rate constant; Molecularity and mechanism of a reaction; Collision theory; Activated complexes; Transition state theory; Chain reaction; Catalysis; Enzymatic reactions.
- **Physical Properties of Solutions**
Solution concentration; Intermolecular forces and the solution process; Solubilities of gases; Vapor pressures of solutions; Osmotic pressure; Freezing point depression and boiling point elevation; Solutions of electrolytes; Colloidal properties.

- **Principle of Chemical Equilibria**
Law of chemical equilibrium and equilibrium constant; Le Chatelier's Principle.
- **Acid-base Equilibria in Aqueous Solutions**
Ionisation of water; pH, pOH and pK_w ; Acids and bases; Polyprotic acids; Buffers; Solubility equilibria.
- **Solubility and Complex-Ion Equilibria**
Solubility constants and solubility; common ion effects; precipitation; equilibria involving complex ions.
- **Structures and Reactions of Organic Compounds**
Isomerisms; Functional groups of organic compounds; Nucleophilic substitution reactions; Elimination reactions; Addition reactions of alkenes; Electrophilic aromatic substitution; Reactions of alkanes; Polymers and polymerization reactions.

Teaching/Learning Approach

The course will be composed of three parts: lectures, tutorials and laboratory sessions. Lectures will provide theory-based teaching on physical and organic chemistry. Examples and references will be given to students whenever appropriate. Tutorials will provide students with opportunities to broaden, enlighten and reinforce the general knowledge obtained in the lectures. Students will be involved in problem-based activities, classroom feedback, case studies, presentations, and discussions in the tutorials. Laboratory sessions will allow students to understand, verify, and apply knowledge developed from lectures.

Assessment Approach

A variety of assessment tools will be used, including presentations, group discussion, written laboratory reports, classroom feedback, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Petrucchi, R.H., Herring, F.G., Madura, J.D. and Bissonnette, C. (2011) *General chemistry: Principle and modern applications*, 10th Ed., Pearson.

References

Brady, J.E. (2009) *Chemistry: Matter and its changes.*, 5th Ed., Wiley.

Bauer, R. C. (2009) *A conceptual introduction to chemistry*, 2nd Ed., McGraw-Hill.

Chang, R. (2011) *General chemistry: The essential concepts*, 6th Ed., McGraw-Hill.

Malone, L.J. and Dolter, T.O. (2010) *Basic concepts of chemistry*, 8th Ed., Wiley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	CCN1110 General Chemistry I
Assessment	50% coursework 50% examination

Aims

This subject introduces a molecular perspective for understanding the natural world and helps students to identify the fundamental concepts on physical and chemical changes of matters. Throughout the course, students visualise the physical and chemical changes through the understanding of molecular behavior. It provides sufficient information for students to continue chemistry instruction at college level. Studying the subject also helps develop students' analytical thinking for their life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- demonstrate the microscopic concepts of atomic structure and molecular bonding as well as their relationships with the general property trends of elements and compounds
- understand the macroscopic properties and basic principles of liquids and solutions
- apply and incorporate the chemical principles and knowledge learned to solve chemical problems and to appreciate modern applications in real life
- demonstrate the abilities in communication as well as skills in problem-solving and analytical thinking

Indicative Contents

- **Properties of Gases**
The simple gas laws; Ideal Gas Equation and its application; Non-ideal gases.
- **Electrons in Atoms**
Electromagnetic radiation; Atomic spectra; Quantum theory; The Bohr's atom; Wave mechanics; Uncertainty principle; Quantum numbers and electron orbitals; Hydrogen atom and many electron atoms; Electronic configurations.
- **Periodic Table and Atomic Properties**
Classification of chemical elements; Sizes of atoms and ions; Ionisation energy; Electronic affinity; Magnetic properties; Periodic properties of the elements.
- **Chemical Bonding – Localized Electron Pair Approach**
Lewis theory and octet rule; Limitation of the Lewis theory; Bond energies and bond distances; Polar covalent bonds; Valence bond theory, Molecular shape by VSEPR method and its physical properties.

- **Molecular Orbital Theory of Chemical Bonding**

Principles of MO theory for homonuclear and heteronuclear diatomic molecules; Bonding and anti-bonding molecular orbitals; MO energy-level diagrams; Construction of MO electron configurations; Bond order; Diamagnetic and paramagnetic properties of molecules; Frontier orbitals; Delocalized π -bonding in polyatomic molecules; Band theory of solids.

- **Intermolecular Forces in Liquids and Solids**

Dipole-dipole interaction; Ion-dipole interaction; Van der Waals forces; hydrogen bonding; Physical Properties of liquid (e.g. viscosity, surface tension), Phase diagram and energetics.

- **Chemistry of Transition Metals**

Electronic configurations and general properties of transition metals; Co-ordination compounds; Ligands and co-ordination numbers; Formation constant for complex in equilibria; Chelating agents; Naming, structure and isomerism of co-ordination compounds; Crystal field splitting in complexes; Colour and magnetic properties of complexes; Applications of co-ordination compounds.

Teaching/Learning Approach

The course will be composed of three parts: lectures, tutorials and laboratory sessions. Lectures supplemented with guided reading will be used to introduce the key concepts of the topics. Lectures will provide theory-based teaching on physical, organic and inorganic chemistry. Examples and references will be given to students whenever appropriate. Tutorials will provide students with opportunities to broaden, enlighten and reinforce the general knowledge obtained in the lectures. Students will be involved in problem-based activities, classroom feedback, case studies, presentations, and discussions in the tutorials. Laboratory sessions will allow students to understand, verify, and apply knowledge developed from lectures.

Assessment Approach

A variety of assessment tools will be used, including presentations, group discussion, written laboratory reports, classroom feedback, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Petrucci, R.H., Herring, F.G., Madura, J.D. and Bissonnette, C. (2011) *General chemistry: Principle and modern applications*, 10th Ed., Pearson.

References

- Brady, J.E. (2009) *Chemistry: Matter and its changes*, 5th Ed., Wiley.
- Bauer, R. C. (2009) *A conceptual introduction to chemistry*, 2nd Ed., McGraw-Hill.
- Chang, R. (2011) *General chemistry: The essential concepts*, 6th Ed., McGraw-Hill.
- Malone, L.J. and Dolter, T.O. (2010) *Basic concepts of chemistry*, 8th Ed., Wiley.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject is an introduction of the basic techniques commonly used in biological and chemical experimental studies, as well as safety issues and practices in biological and chemical laboratories.

Learning Outcomes

On successfully completing this subject, students will be able to:

- practise the basic and common techniques used in biological and chemical laboratories
- comply to the general laboratory safety, the biological safety and the chemical safety practices
- handle and use laboratory equipment and apparatus correctly, and prepare reagents and solutions accordingly
- prepare laboratory records and make accurate observations in laboratory practices
- analyse and interpret data obtained from laboratory work and report the laboratory work in a properly written form

Indicative Contents

- **Laboratory Safety**
General laboratory safety practices;
Hazards and risk assessment;
General principles of biosafety;
Basic laboratories – Biosafety Levels 1 and 2;
Equipment designed to reduce biological hazards;
Safe laboratory techniques; disinfection and sterilization;
Hazards associated with chemicals and chemical waste;
General knowledge on the handling, storage and disposal of chemicals and chemical wastes;
Personal protection and protective clothing for handling of potentially hazardous chemicals, chemical wastes and spillages;
Laws pertaining to the handling and storage of chemicals: dangerous goods, controlled chemicals, dangerous substances used in industry, disposal of chemical waste and others.
- **Basic Laboratory Measurement**
Measurement of weight, volume, temperature, pH; uncertainty in measurements and statistics; basic mathematical techniques, proportional relationships, relationships and graphs.
- **Basic Solution Techniques**
Use of analytical balances, graduated glassware; water for laboratory use; concentrations and calculation; preparation of laboratory solutions, reagents and standard solutions; dilutions and serial dilutions; biological / physiological solutions, sterilization of solutions.

▪ **General Laboratory Techniques**

Microscopy: principles of light microscopy and electron microscopy; proper use and care of light microscopes. Staining of chromosomes; staining of bacteria; preparation of slides for microscopy.

Centrifugation: principle of centrifugation, different modes of centrifugation, use of centrifugation in separation of cells or subcellular particles.

Measurements involving light: transmission, reflection, scattering, absorption, principle of spectrophotometry, use of spectrophotometer; standard curves and calibration.

Bacterial culture medium and culture plates, culture transfer and cultivation, plate streaking/spreading; growth curve; identification of bacteria.

Qualitative techniques for inorganic analysis, solvent extraction, gravimetric analysis, acid-base titration, complexometric titration, redox titration, precipitation titration

Proper record keeping and documentation; proper data analysis and report writing.

Teaching/Learning Approach

The basic principles and concepts of the basic laboratory techniques and laboratory safety will be delivered in the form of lectures. In the tutorials/laboratory practice, students will work individually or in teams in the laboratory sessions, and each session will be supplemented with in-lab briefing and demonstration. Students will be required to keep the laboratory records and analyse the results for lab report writing.

Assessment Approach

A variety of assessment tools including presentations, case studies, writing of laboratory reports, tests and examination will be used to assess the process of learning as well as analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the teaching plan. The subject intended learning outcome(s) assessed in each coursework component will be explained to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Fleming & Hunt (Editors) (2006) *Biological Safety Principles and Practices*, 4th Ed., ASM Press.

World Health Organization, Geneva (2003) *Laboratory Biosafety Manual*, 2nd Ed., World Health Organization, Geneva.

Brown J. K. Biotechnology (2011) *A Laboratory Skills Course*, 1st Ed., Hercules BioRad Laboratories.

U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention and National Institutes of Health (1999) *Biosafety in Microbiological and Biomedical Laboratories*, 4th Ed., U.S. Department of Health and Human Services Washington.

Hall, Stephen K (1994) *Chemical Safety in the Laboratory*, Boca Raton, Fla.: Lewis Publishers.

United Nations Environment Programme, The International Labour Organisation, and the World Health Organization (1994) *Assessing human health risks of chemicals: derivation of guidance values for health-based exposure limits*, World Health Organization, Geneva.

Seidman & Moore (2000) *Basic Laboratory Methods for Biotechnology: Textbook and Laboratory Reference* Prentice-Hall.

Norrell & Messley (2003) *Microbiology Laboratory Manual*, 2nd Ed., Pearson.

Vogel, A. I.; Barnes, J. D.; Denney, R. C.; Mendham, J.; Thomas, M. J. K. Vogel's (2000) *Quantitative Chemical Analysis*, 6th Ed., Harlow: Prentice Hall.

Svehla, G. Vogel's (1996) *Qualitative Inorganic Analysis*, 7th Ed., Harlow: Longman.

Level	1
Credits	3
Nature	Science
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject provides students an understanding and appreciation of sustainable development. Students can review the planning, development and control system in Hong Kong on land uses issues. It also examines the underlying forces governing the development of urban form in modern cities. Studying the subject will also help develop student's critical thinking for their life-long learning.

Learning Outcomes

On successfully completing this subject, students will be able to

- have an overview of current land use, environmental protection and sustainable issues in the environment
- appreciate the basic principles of urban planning and sustainable development
- understand the local and regional practices of achieving environmental conservation and sustainability
- communicate and work effectively with various professionals involved in the land development process

Indicative Contents

- **Principles of land use and land management**
Definition and classification of land use, change of land use, management of land use, land tenure, ownership and public administration, land value, economics and strategic development.
- **Monitoring and manipulating land information**
Maps, aerial photos and satellite imagery, animation techniques for depicting natural and urban planning.
- **Urban Planning**
The principles and impact of urban planning, town planning process in Hong Kong, interaction between urban and environmental planning.
- **Principles of environmental sustainability**
Principles and definition of sustainability, long-term approaches to environmental problems, stakeholders of sustainable development, government, civil society and business, measurement of sustainability.

- **Sustainability issues**

Sources of pollutants, effects on human health and environment, indoor air quality, the problem of waste and effects on land use, limitation and effects of water pollution, food chain and importance of wetland and marine ecology, environmental conservation, evidence and effects of climate change.

Teaching/Learning Approach

Relevant theories, concepts and regulations related to urban planning and sustainable development will be introduced in lectures, supplemented with applications and discussion during tutorials/seminars. Students are required to conduct case studies on urban planning, environmental conservation, and environmental impact assessment, and present their findings in tutorial class.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, tests and examination designed to develop and assess critical thinking as well as analytical and communication skills.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Levy, John M. (2012), *Contemporary Urban Planning*, 10th Ed., Pearson/Prentice Hall.

Bailey, R. (1997), *An Introduction to Sustainable Development*, the Chartered Institution of Water and Environmental Management, UK.

References

Ratcliffe, J., Stubbs, M. and Keeping, M. (2009), *Urban Planning and Real Estate development*, 3rd Ed., Routledge.

Hong Kong Planning Standards and Guidelines, Planning Department, Hong Kong Government.

Nissim, R. (2012), *Land Administration and Practice in Hong Kong*, 3rd Ed., Hong Kong University Press.

O’Riordan, T. (1995), *Environmental Science for Environmental Management*, Longman Scientific & Technical, London.

Level	1
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

As the construction industry and its management have profound impacts on the community and the economy, this subject is intended to enable students to acquire a holistic view and understanding of the construction industry in Hong Kong and China, its relation to urban development and the principles of management.

Learning Outcomes

On successfully completing this subject, students will be able to:

- outline the fundamental characteristics of the construction industry and built environment in Hong Kong and China
- describe the social, ecological and environmental impacts of construction development on communities
- explain the economic contribution of the construction industry to national and world economy
- apply the fundamental management principles in the built environment
- communicate and work effectively in the process of project management through workshops

Indicative Contents

- **Overview of the built environment and the construction and property sector in Hong Kong and China**
Structure and stakeholders; Significance and functions in urban development; Contribution to national and world economy.
- **Impacts of constructions and asset management**
Social, economic, ecological, and environmental aspects.
- **Fundamentals of construction industry from the perspectives of different stakeholders**
Types and functions of built assets, and their planning, construction, health and safety; Use and management of built assets, and their relation to standard of living and business environment.
- **Construction process**
Inception to completion stages and the management of the constructed facilities.
- **Constructions in Hong Kong and China**
Cases and examples of prestigious and mega projects.

- **Management principles**

What managers do; Managers' roles taking into account the impacts of the project environment and business environment; Basic techniques for scheduling, progress, cost and quality control.

- **Project and project management**

Characteristics of project; Project management as a profession: principles of planning, organizing, controlling, and the application to project management; The process of project management.

Teaching/Learning Approach

Lectures will be used to convey an overview of characteristics of the construction and property sector and apply the principles of management to the built environment. Problem-based case studies will be employed for illustrating the prestigious and mega building construction projects in Hong Kong and China.

Students will develop managerial skills in problem solving, effective communication, and teamwork through management workshops. Seminars and tutorials will be used to discuss project management topics in depth through case studies, role play, assignments, and student presentation.

Assessment Approach

A variety of assessment tools will be used, including project(s), presentation(s), case studies, written report(s), test(s) and examination designed to develop and assess fundamental knowledge and communication skills.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Lee, C.F. et al. (2008), *Reinventing the Hong Kong Construction Industry for its Sustainable Development: Summary Report of the CII-HK Research Project No.13*, Construction Industry Institute.

Lu, Y.J., Fox, P.W. (2001), *The Construction Industry in China: its Image, Employment Prospects and Skill Requirements*, Geneva: International Labor Office.

References

Liebing, R. (2001), *The Construction Industry: Processes, Players and Practices*, Prentice Hall.

Myers, D. (2004), *Construction Economics a New Approach*, Spon Press.

Klein, H. (2008), *Basics Project Planning*, Birkhäuser.

Nicholas, John M. (2008), *Project Management for Business, Engineering, and Technology: Principles and Practice*, 3rd Ed., Elsevier/Butterworth Heinemann.

Lock, D. (1996), *The Essentials of Project Management*, Gower.

Turner, J.R. (2007), *Gower Handbook of Project Management*, 4th Ed., Gower.

Kerzner, H. (2003), *Project Management: Case Studies*, Wiley.

Level	2
Credits	3
Medium of Instruction	English, supplemented with Chinese
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject equips students with analytical skills that are necessary for the understanding of developments and characteristics of China's political and legal system from the Chinese perspective and the Western perspective. It provides the fundamental conceptual framework for analysing selected issues and challenges to business decision involving the Chinese government. This subject also helps students develop critical thinking skills for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the developments of various political ideologies and its impact to contemporary China
- understand the current political structure and leadership
- appreciate the complexity of the Chinese policy making and judicial process
- apply relevant knowledge to enhance understanding of the business scenarios in China

Indicative Contents

Part 1: The Chinese Political System

- **Chinese Political Ideology**
Confucianism; Marxism-Leninism; Mao Zedong Thought; and Deng Xiaoping Theory.
- **Political Leadership**
Generations of political leaders, succession and recruitment.
- **Party and Government**
Party and government structure; Central and regions.
- **Chinese political culture**
Human right; Freedom of speech; Democracy.

Part 2: The Chinese Legal System

- **Legal Principles**
Rule of law against rule by law and rule by man.
- **Party and Judicial System**
Court system; Trial system; Judge and prosecution system.
- **Legal Environment of Business**
Advertising laws, Patent law; Labour law; Anti-monopoly law.

Teaching/Learning Approach

Lectures will focus on the concepts, basic facts and updates on latest developments of the marketing environment and marketing mix practices. Activities such as video clips, guest speakers and company visits may be arranged to stimulate students' interests or their awareness of practical implications of some issues.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. Activities in tutorials will normally include group discussion, debates and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

This is a wide and dynamic topic involving mainly current issues which are volatile, so a specific textbook – which can easily get outdated – is not recommended.

References

Kuhn, R. L. (2009) *How China's Leaders Think: The Inside Story of China's Reform and What This Means for the Future*, John Wiley Sons.

McGregor, R. (2010) *The Party: The Secret World of China's Communist Rulers*, Harper Collins.

Wasserstrom, J. (2010) *China in the 21st Century: What Everyone Needs to Know*, Oxford University Press.

許知遠:《未成熟的國家：變革中的百年中國》，八旗文化，2010 年版。

趙紫陽：《國家的囚徒：趙紫陽的祕密錄音》，時報出版，2009 年版。

李曉蓉、張祖樺：《零八憲章》，開放雜誌社，2009 年版。

E references

[China Internet Information Centre](#). 2011. "[China's Judiciary](#)."

[China Internet Information Centre](#). 2011. "[The National People's Congress](#)."

On-line Resources

[South China Morning Post](#), a Hong Kong newspaper.

[People's Daily](#), the official newspaper of the CCP.

[China Internet Information Centre](#)

[Sina](#)

[China News Digest](#)

[Asia Wall Street Journal](#)

[Financial Times](#)

[The Economist](#)

[Google News on China](#)

[Asia Source](#)

[China Radio International](#)

[CNN Asia](#)

[BBC Asia-Pacific](#)

[New York Times - Asia Pacific news](#)

[China Top News](#)

[Carter Centre -China Village Elections Project](#)

[Embassy of the People's Republic of China](#), in Washington D.C.

[Embassy of the United States of America](#), in Beijing.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusion	CCN1042 Economics and Society (for Non-Business Students)
Assessment	50% coursework 50% examination

Aims

This subject enables students to do simple analysis of business situations by applying conceptual frameworks drawn from Economics, and identify and analyze the means by which value is created in goods and services and delivered to the end-users. It also identifies and analyzes those aspects of the local and global business environment that affect the business decisions made by the business organisations. The subject also helps students develop critical thinking skills which are useful for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the issues involved in the allocation of scarce resources for individual economic agents and the economy as a whole
- apply relevant economic knowledge to conduct economic analysis of the behaviour of firms and markets, and the effectiveness of government economic policy
- evaluate the issues relating to macroeconomics and analyze their impacts on an economy
- apply relevant economic knowledge to enhance their understanding of other business subjects

Indicative Contents

- **Scope of Microeconomic Analysis**
Scarcity, choice and opportunity cost; Nature of economic science; Relation with other subject disciplines; Cost and benefit analysis.
- **Demand, Supply and the Price Mechanism**
The law of demand; Elasticity of demand; The law of supply; Functions of price and the market system; Market Intervention, including price control and taxation.
- **Production and Costs**
Definition of short run and long run; Law of diminishing marginal returns; Cost of production; Economies and diseconomies of scale.

- **Market Structure**
Perfect competition and imperfect competition (monopolistic competition, oligopoly and monopoly); Definition of market; General features of different market structure; Profit maximisation; Sources of monopoly power.
- **National Income Accounting**
Major macroeconomic issues; Concepts and approaches to national income accounting.
- **National Income Determination and Price Level**
Explanation of the concepts of the aggregate demand curves and aggregate supply curve; Determination of the equilibrium level of output and price level in the AS-AD model.
- **Unemployment, Inflation and deflation**
Meaning, types, and measurement of unemployment; Concepts of inflation and deflation; General price level as measured by Consumer Price Index and implicit price deflator of GDP.
- **Money and Banking**
Nature, definition and functions of money; Definitions of money supply in Hong Kong; Credit creation and the simple banking multiplier.
- **Fiscal Policy and Monetary Policy**
Roles of government spending and taxation; Central banking and monetary policy.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key economic concepts, with specific reference to current economic issues wherever appropriate. Occasional group discussions will be conducted.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of real-life economic issues. Activities in tutorials will include student presentations and discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including critical thinking, analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Mankiw, N. G. (2011) *Essentials of Economics*, 6th Ed., Thomson South-Western.

References

Frank, R. H. and Bernanke, B. S. (2009) *Principles of Economics*, 4th Ed., McGraw-Hill.

Parkin, M. (2010) *Economics*, 9th Ed., Pearson Addison Wesley.

Mankiw, N. G. (2009) *Principles of Economics*, 5th Ed., Thomson South-Western.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

The subject introduces the basic principles and concepts of marketing. It provides students with marketing knowledge and skills to analyse diverse marketing situations and apply relevant concepts to real business situations. The subject also develops students' oral and written communication skills, critical and creative thinking, and ability to work in a collaborative environment.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- analyse various marketing environments and identify opportunities, threats and other factors or issues affecting marketing planning and decisions
- describe the principles of various areas in marketing such as customer value, consumer behaviour, marketing research, international marketing and ethical issues
- identify marketing problems and issues, and suggest marketing strategies providing solutions to the marketing problems and issues identified
- Apply relevant marketing concepts, knowledge and theories to practical marketing situations

Indicative Contents

- **Fundamentals of Marketing**
Role of marketing in modern organisations; Evolution of marketing; Customer value; Strategic marketing process.
- **Marketing Environment**
Economic, technological, regulatory, political, competition and social factors.
- **Segmentation and Positioning**
Importance of segmentation and Positioning; Different segmentation bases and types of positioning strategies.
- **Consumer Behaviour and Organisational Buying**
Consumer purchase decision process; Sociocultural and situational influences; Organisational buying process and criteria.

- **Marketing Research**
Introduction to methodologies and applications of basic marketing research.
- **Marketing Mix**
The foundation concepts and strategies of marketing mix: Products, Price, Place and Promotion.
- **International Marketing Issues and Applications of IT**
Concepts, examples and issues related to international marketing; Applications of IT such as online marketing.
- **Ethical issues**
Marketing impact on individuals and society; Social responsibility and marketing ethics.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key marketing concepts and theories, with reference to current marketing issues or examples wherever appropriate.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts and theories taught in lectures and to apply them to the analysis of real-life marketing situations. Activities in tutorials will normally include group work, student presentations and discussions of problems sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including group presentations and written reports, class discussions, individual assignment(s), test(s) and an examination designed to assess the expected outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Kerin, R., Hartley, S., Rudelius, W. and Lau, G. T. (2009) *Marketing in Asia*, McGraw Hill/Irwin.

Kotler, P., Armstrong, G. (2010) *Principles of Marketing*, 13th Ed., Prentice Hall.

References

Grewal, D., Levy, M. (2010) *Marketing*, 2nd Ed., McGraw Hill/Irwin.

Lamb, C., Hair, J. and McDaniel, C. (2011) *Marketing*, Thomson, South-Western.

Armstrong, G., Kotler, P. (2011) *Marketing: An Introduction*, 10th Ed., Prentice Hall

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusion	CCN3107 Management in Human Services
Assessment	50% coursework 50% examination

Aims

This subject introduces the key concepts of management and their practical implications relating to both business and non-business organisations. It provides a fundamental framework in the understanding of management applicable to different subject disciplines and daily life scenarios. This subject also helps students develop critical thinking beneficial to life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- explain the key concepts and theories in management
- analyse the functions and roles played by managers in various organisations
- articulate key issues involved in managing organisations
- apply concepts and theories of human behaviour relating to decision, teamwork and leadership in response to different organisational situations
- identify common issues related to ethical behaviour and social responsibility in organisations

Indicative Contents

- **Management and Management Theory**
Nature of management, Level of managers and the role of managers in an organisation; Evolution of management theories and their implications for managing organisations.
- **Business Environment**
Factors affecting the performance of an organisation in a fast changing environment; General and specific environmental factors; Implications of globalisation to organisations; the Relevance of corporate culture to management, Social responsibility and ethical behaviour in organisations.
- **Planning**
Principles of planning; Role and method of strategic planning in organisations; Decision making in organisations.

- **Organising**
Key elements of organisational structure and design; Functions of the key units in an organisation; Identification of various forms of organisational structure and their advantages and disadvantages.
- **Leading Function of Managers**
Basic theories in motivation; Application of motivation theories in organisations; Leadership theories, styles and their implications to management.
- **Control Function in Organisations**
Importance of control in organisations; Types of control and their application to organisation; Importance of performance assessments.
- **Managing different functional units in Organisations**
Human Resources; Marketing; Production and Finance.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key concepts and theories of the syllabus topics. Occasional discussions on hypothetical and real examples will be conducted.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts and theories taught in lectures and to apply them to the analysis of real-life business issues. Activities in tutorials will normally include student presentations, discussions of problems sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, group project, tests and an examination designed to assess students' achievement of the subject intended learning outcomes and to develop critical thinking as well as analytical and communication skills. In addition, the group project will also offer an opportunity to broaden and assess students' exposure in fields like entrepreneurship and community services.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Robbins, S. and Coulter, M. (2009) *Management*, 10th Ed., Prentice-Hall International Editions.

References

Bateman, T. and Snell, A. (2009) *Management – Leading & collaborating in a competitive world*, 8th Ed., McGraw-Hill/Irwin.

Jones, G. and George J. (2009) *Contemporary management*, 6th Ed., McGraw-Hill/Irwin.

Kinicki, A. and Williams, B. (2009) *Management – A Practical Introduction*, 4th Ed., McGraw-Hill.

Schermerhorn, J. (2010) *Management*, 10th Ed., John Wiley & Sons.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces the basic concepts and theories of human behaviour, and highlights their significant impact on managing workforce behaviour in organisations. It prepares students to further develop their knowledge in the field of management through either continuous professional development or academic studies.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- appreciate different workplace behaviour relevant to the management of organisations
- understand the basic organisational behaviour concepts and theories for managing workplace behaviour
- apply organisational behaviour concepts and theories to address relevant management issues

Indicative Contents

- **Introduction to Organisational Behaviour**
Nature of the study of organisational behaviour; Variables in organisational behaviour.
- **Individual Behaviours**
Values; Cross-cultural values; Attitudes; Personality; Perception; Decision making; Motivation.
- **Group Behaviours**
Group behaviour; Teams; Leadership; Power; Politics; Conflict.
- **Organisational Systems**
Organisational culture; Organisational change; Resistance to organisational change; Approaches to managing organisational change.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key concepts and theories. Hypothetical and real examples will be presented wherever appropriate to help student grasp the essence of the concepts and theories.

Activities in tutorials may include group discussions and student presentations of problem sets and case studies to deepen students' understanding and to stimulate their awareness of practical implications of some theories. They will provide opportunities for students to explore further the applications of the concepts and theories taught.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Robbins, S. P. and Judge, T. A. (2011) *Organisational Behaviour*, 14th Ed., Prentice Hall.

References

Colquitt, J. A., LePine, J. A. and Wesson, M. J. (2011) *Organisational Behaviour: Improving Performance and Commitment in the Workplace*, 2nd Ed., McGraw-Hill/Irwin.

Griffin, R. W. and Moorhead, G. (2012) *Organisational Behaviour: Managing People and Organisations*, 10th Ed., South-Western/Cengage Learning.

Kinicki, A. and Kreitner, R. (2009) *Organisational Behaviour: Key Concepts, Skills and Best Practices*, 4th Ed., McGraw-Hill/Irwin.

McShane, S. L. and Von Glinow, M. A. (2009) *Organisational Behaviour*, 2nd Ed., McGraw-Hill/Irwin.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusion	CCN3118 Globalisation and Development
Assessment	50% coursework 50% examination

Aims

This subject aims to provide students with a global perspective and sound understanding of current practices of globalisation. Students will be guided to analyse different globalisation concepts based on real-life situations. This subject also helps students develop critical thinking and practical skills in globalisation for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- define globalisation and trace its history and development issues
- investigate the role of the global institutions and their effect on local and international economies
- identify the relationship between globalisation and trade/ cultural flows
- study the effect of the spread of global media
- deal with, resist and discuss the future of globalisation

Indicative Contents

- **Foundation of Globalisation**
Origins and history of Globalisation; Some basic issues and debates on Globalisation.
- **Globalisation and Related Processes**
Imperialism; Development; Americanisation/Anti-Americanism as a global process; Basic ideas of Neo-Liberalism.
- **Global Political Structures, Global Institutions and Regional Organisations**
United Nations; European Union; North American Free Trade Agreement; Association of South East Asian Nations; World Trade Organisation; International Monetary Fund; World Bank; Other important economic organisations such as The Group of Eight, The Group of Twenty, Organisation of Petroleum Exporting Countries, World Economic Forum, Organisation for Economic Cooperation and Development.

- **Global Economic Flows**
Global trade; Trade surpluses and deficits; Developed and less developed world.
- **Global Culture and Cultural Flows**
World culture; Religion; Cultural imperialism; Cultural convergence.
- **High-Tech Global Flows and Structures**
Technology; Media, thinking about the new global media; The internet in China.
- **Dealing with, Resisting, and the Futures of Globalisation**
Dealing with the global economy, protectionism, fair trade, free trade; Resisting globalisation, local resistance; The Futures of globalisation.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key concepts on globalisation, with specific reference to current international business issues wherever appropriate. Guest talks and activities will be arranged to stimulate students' interests or their awareness of practical implications of some concepts.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of real-life globalisation issues. Activities in tutorials will normally include student presentations, discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including group projects and presentations, case studies, written reports, tests and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical, problem-solving and communication skills in a global context.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Ritzer, G. (2010) *Globalisation: A basic text*, Wiley-Blackwell.

References

Ritzer, G. (2011) *Globalisation: The essentials*, Wiley-Blackwell.

Rowntree, L., Lewis, M., Price, M. and Wyckoff, W. (2011) *Globalisation and diversity: Geography of a changing world*, 3rd Ed., Pearson Prentice Hall.

Scholte, J. A. (2005) *Globalisation: A Critical Introduction*, 2nd Ed., Palgrave Macmillan.

Spence, M. and Leipziger, D. (2010) *Globalisation and growth: Implications for a post-crisis world. Commission on Growth and Development*, The World Bank.

程度	2
學分	3
教學語言	普通話
修讀的必備條件	[CCN1024 大專普通話] 或 相關普通話課程（須出示證書正本）
評估方法	60%課堂習作 40%期終考試

科目目標

根據學生在 [CCN1024 大專普通話] 課程中所建立的普通話和漢語拼音知識基礎，進一步提升他們的普通話水平，強化運用漢語拼音的能力，並廣泛應用商務情景語彙及會話，期望學生的普通話表達能力達到較高水準，使他們在將來工作的環境中更好地應用所學的普通話說話技巧，同時也有助他們達成終身學習的目標。

科目統籌小組在籌備講授及評核本課程時，須參照相關的「課程內容藍圖」，了解本科目的角色定位，如何在課程層面上協助學生達到預期的學習成果。

學習成果

學生成功完成本科目，應能：

- 強化漢語拼音練習及普通話正音訓練，了解普通話與廣州話的對比，能說較純正的普通話，並擁有自學普通話的能力；
- 應用商務情景語彙及會話，熟悉將來工作的語言環境，並能以普通話與上司、客戶、商業夥伴、代理等各方溝通；
- 學習商務演講、談判和投訴的技巧，從而掌握有關技巧，以應付將來工作及學習所需，也能增強說普通話的自信。

課程內容

- **普通話和漢語拼音強化練習**
漢語拼音強化練習及辨音訓練、普通話正音訓練、職場普通話與廣州話對比及翻譯。
- **商務情景語彙及會話**
商業普通話辭彙、語法的規範表達、產品介紹及推銷、定價、訂貨、傭金、包裝、付款方式、保險、合同的會話。
- **商務演講、談判和投訴的技巧**
商務文章朗讀、產品推銷及介紹、工作環境介紹及工作經驗分享、面試技巧、商務演講、商務談判、商務投訴。

教學方法

主講課集中教授商務情景語彙及會話，以及講解面試、商務演講、商務談判和商務投訴的技巧，亦會討論普通話辭彙、語法的規範表達。教學模式以課本教授、錄音聆聽、角色扮演、小組討論為主。

導修課集中訓練廣州話與普通話對譯、說話練習、漢語拼音強化練習及普通話正音訓練，亦會介紹一般工作環境及分享工作經驗。教學模式將以課堂練習、商務文章朗讀、角色扮演、小組討論和辯論為主。

評核方法

本科目兼用持續評估及綜合評估方法。

持續評估包括：

(i)	個人口語評估：將以個人演講的方式，進行一次不少於 5 分鐘的商務演講。內容方面，可自行選擇產品介紹、市場投資分析或市場營銷分析等。
(ii)	小組口語評估：學員將分為四人一組，自選題目，進行不少於 10 分鐘的商務談判情景會話。
(iii)	課堂測驗：內容包括漢語拼音辨音；漢語拼音與詞語及句子的互相譯寫；語方言詞語、短句與普通話的對譯等形式。

期末考試分口試和筆試兩次進行。

每班的教學計劃 (Teaching Plan) 詳述個別習作佔整體評核的實際比重。學生收到習作時，均會獲告知習作所評核的是那些預期學習成果。

學生所需的努力

學生預期要花共約一百三十小時在課堂、導修、習作、備課、溫習、測驗及考試上。

指定課本

香港理工大學中國語文教學中心編：《商貿普通話（上冊）》（附多媒體光碟），中華書局，2007 年版。

參考書

中國社會科學院語言研究所詞典編輯室編：《現代漢語詞典》（第五版）簡體字修訂本，商務印書館，2005 年。

林崗：《職場普通話特訓班》，萬里機構，2010 年版。

香港理工大學中國語文教學中心編：《商貿普通話（下冊）》，中華書局，2008 年版。

國家語言文字工作委員會普通話培訓測試中心：《普通話水平測試實施綱要》，商務印書館，2005 年版。

曾子凡編著：《廣州話普通話口語詞對譯手冊》電腦光碟版，三聯書店(香港)有限公司，2002 年版。

李明、石佩文：《漢語普通話語音辨正》，北京語言文化大學出版社，1998 年版。

施仲謀編著：《廣州話普通話語音對照手冊》，華風書局有限公司，1986 年版。

曾子凡編著：《香港人學說普通話》，三聯書店(香港)有限公司，1991 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject equips students with analytical skills through the understanding of fundamental chemical concepts. It helps students to develop and use chemical concepts and skills, so that students can understand the chemistry behind some issues and problems that may arise within our society. The subject will also help students develop critical thinking skills for life-long learning through appreciating the benefits and shortfalls of technology.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the importance of chemical science and technology that are closely related to our everyday life
- conduct analysis of chemical properties for modern technology, including issues in environment, renewable energy and new materials, etc.
- appraise the issues relating to the benefits of technology and criticise the shortfalls of technology

Indicative Contents

- **The Nature of Matter**
Elements; Compounds and mixtures; Atoms and molecules; Periodicity.
- **Traditional Materials**
Metals; Alloy; Glass; Porcelain; Their properties.
- **Modern Materials**
Semi-conductor: doping of silicon to produce p-type and n-type semiconductors; Plastics and its structures: polymers, addition vs condensation; Nano-materials: distinguish between physical and chemical techniques to form molecules, structures and properties of carbon nanotubes; Implication of nanotechnology; The advantages and disadvantages of using these materials.
- **Issues in Environment**
Measuring pH of rain; Acid rain; Ozone depletion; Greenhouse effect; Global warming; Air pollutants, e.g. sulfur dioxide and combustion of coal, nitrogen oxides, particulates and volatile organic compounds (VOCs) and its acidification.

- **Renewable Energy**
Energy; Work and heat; Conservation of energy; Several kinds of energy sources; Chemistry and society.
- **Water Treatment and Recycling**
Primary pollutants found in wastewater; Hardness; Outline the primary, secondary and tertiary stages of wastewater treatment: distillation, filtration, disinfection.
- **Food**
Major and minor components of food; Degree of crystallisation (solidification) and melting point of fats and oils from their structure; Occurrence of colour in naturally occurring pigments; Changes of food properties upon cooking, e.g. acidity, colour of food, and texture.
- **Waste Treatment and Recycling**
Methods for waste disposal; Recycling of metal, glass and plastics; Landfill.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Examples and references will be given to students whenever appropriate. Worksheets may be used to guide students through the reasoning behind more complex theories, and to conduct analysis of chemical properties.

Tutorials will provide students with the opportunity to broaden, enlighten and reinforce their understanding. Problem based activities, group discussions and case studies will be arranged to stimulate student's interests or their awareness of practical implications of some concepts, and to develop student's critical thinking. The tutorials will enable students to understand, verify, and apply knowledge developed from lectures. Literature survey techniques will also be introduced to let students identify information, conduct analysis and find discrepancy when compared with their experimental data.

Assessment Approach

A variety of assessment tools will be used, including presentations, group discussion, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills including critical thinking, analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Eubanks, L. P., Middlecamp, C., Pienta, N. J., Heltzel, C. E., Weaver, G. C. (2009) *Chemistry in Context: Applying Chemistry to Society*, 5th Ed., McGraw Hill.

References

Beard, J. M. (2009) *Environmental Chemistry in Society*, CRC Press.

McGee, H. (2004) *On Food and Cooking: The Science and Lore of the Kitchen*, 1st Scribner rev. Ed., Scribner.

Sarai, D. S. (2002) *Basic Chemistry for Water and Wastewater Operators*, American Water Works Association.

Seager, S. L., Slabaugh, M. R. (2011) *Chemistry for Today: General, Organic and Biochemistry*, 7th Ed., Cengage.

程度	2
學分	3
教學語言	中文〔粵語或普通話講授〕
修讀條件	無
評估方法	100%課堂習作

科目目標

本科目透過課堂講授、課堂練習、分組習作等方式，培養同學中文閱讀、概括、分析、評論及撰寫中文學術論文的綜合能力。本科目注重訓練同學閱讀欣賞的能力、教導同學檢索重要的中文學術資料、辨析評論文章的優劣、掌握學術論文寫作的要領等。此外，本科目亦注重知識的應用，希望協助學生把學會的技能應用到各課程學術論文的撰寫上。

科目統籌小組在籌備講授及評核本課程時，須參照相關的「課程內容藍圖」，了解本科目的角色定位，如何在課程層面上協助學生達到預期的學習成果。

學習成果

學生成功完成本科目，應能：

- 瞭解學術文章的論點、論據及論證；
- 運用熟練的中文，寫作一般的評論文章，例如社會問題評論、影評、書評、樂評等；
- 掌握撰寫學術論文的基礎知識及寫作學術文章的基本能力，例如恰當歸納背景材料，靈活運用注釋、分論、總結等各項寫作要點，從而具備良好的文章表達力、組織力和論辯力等。

課程內容

- **評論文章寫作策略概說**
文類理論，介紹什麼是評論，如何作評論；把握評論文章中的論點、論據、論證方法；介紹立論、駁論、演繹法、歸納法等論證方法；介紹評論文章的篇章建構、銜接和邏輯聯繫等；介紹基本的研究方法。
- **一般評論文章寫作訓練**
介紹時事評論、人物評論、影視評論、書評等的各自特色及寫作要訣。
- **學術性文章寫作訓練課程**
介紹一般論文（學術回顧、研究要點、結論、注釋等）、畢業論文（標題、目錄、內容提要、正文—學術回顧、文章結構、章節安排、結論、注釋及參考書目等）的寫作。

教學方法

課堂講授主要介紹評論文章及學術論文的寫作策略及寫作規範。導修課旨在通過學生報告及小組討論，讓學生應用及深化在課堂上學會的知識及理論。

評核方法

本科目採用持續評估方法，學生須撰寫評論文章、完成閱讀報告及主題研究論文，也須完成期中測驗，以檢測學生的評論及書寫能力。

每班的教學計劃 (Teaching Plan) 詳述個別習作佔整體評核的實際比重。學生收到習作時，均會獲告知習作所評核的是那些預期學習成果。

學生所需的努力

學生預期要花共約一百三十小時在課堂、導修、習作、備課、溫習、測驗及考試上。

指定課本

本科目涉及的參考材料較廣泛，無指定課本。

參考書

王乾任：《替你讀經典：讀書心得報告與寫作範例篇》，弘智文化，2002年版。

林慶彰：《學術論文寫作指引：文科適用》，萬卷樓發行，1996 年版。

吳和堂：《教育論文寫作與實用技巧》，高等教育，2009 年版。

吳宜澄、盧佩綺：《論文寫作格式手冊》，桂冠圖書出版股份有限公司，2004 年版。

高小和編：《學術論文寫作》，南京大學出版社，2002年版。

路德慶主編：《寫作教程》，華東師範大學出版社，1984年版。

張慶勳：《論文寫作手冊》，心理出版社，2002年版。

張志忠：《中國當代文學作品導讀》，北京大學出版社，2005年版。

鄭文貞：《篇章修辭學》，廈門大學出版社，1991 年版。

畢恆達：《教授為什麼沒告訴我：論文寫作的枕邊書》，學富文化，2005 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusions	CCN2182 Professional English I
Assessment	100% coursework

Aims

This subject is designed to equip students with the essential English language skills and business communication knowledge required in their future professional careers. The main focus is to develop in students the competence to select the appropriate language and strategies for effective communication in daily workplace contexts.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- acquire the basic knowledge of workplace communication
- apply appropriate strategies for writing business messages with different natures such as positive, negative and persuasive messages
- write business correspondence such as letters, memos and e-mails with appropriate format, style and tone
- interact effectively in various oral communication tasks such as presentations, business telephoning, and job interviews

Indicative Contents

- **Principles of Workplace Communication**
Communication process; Analysis of purpose, audience, information and context; Strategies for verbal and nonverbal communication; Selection of communication channels.
- **Writing Strategies**
Writing process; Patterns of organisation for messages with different natures (e.g. direct and indirect pattern); Reader-oriented approach (e.g. “you” view and impersonal statements); Emphasising and deemphasising ideas.
- **Workplace Correspondence**
Business letters, memos and e-mail (e.g. format, structure and layout); Routine and goodwill messages; Persuasive and negative messages; Résumé and job application letters; Tone (e.g. informal and professional tones); Style (e.g. positive, inclusive, familiar and concise styles); Grammar and vocabulary for workplace writing.

- **Oral Communication in the Workplace**

Business presentations; Business telephone skills; Job interviews.

Teaching/Learning Approach

Seminars will focus on the study of different communication strategies and language skills with practical examples relevant to students' potential career fields. Different learning activities such as writing practices, role-plays, case studies and group discussions will be used.

In language laboratory sessions, audio-visual and on-line materials will be used to reinforce students' learning.

Assessment Approach

A variety of assessment tools will be used, including presentations, written tasks (e.g. writing a business letter, memo or e-mail), quizzes and test(s) designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including teamwork, critical thinking and analytical skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Guffey, M. E. and Almonte, R. (2010) *Essentials of Business Communication*, 6th Canadian Ed., Thomson-Nelson.

References

Baugh, L. S., Fryar M., & Thomas, D. A. (1999) *How to Write First-class Business Correspondence*, NTC Publishing Group.

Billow, G. T. (2004) *Business Writing for Hong Kong*, 3rd Ed., Longman.

Bovée, C. L. and Thill, J. V. (2010) *Business Communication Essentials*, 5th Ed., Pearson.

Krizan, A. C., Merrier, P. and Jones, C. L. (2008) *Business Communication*, 7th Ed., Cengage Learning.

Locker, K. O. and Kaczmarek, S. K. (2011) *Business Communication – Building Critical Skills*, McGraw-Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject aims to introduce students some basic ecological concepts and to comprehend the interrelationships between natural and human-made world. It equips students with how ecosystems work and the causes of deterioration of environment. It enables students to understand the analysis and assessment of the thermal and acoustic performance characteristics of buildings. The concept of maintaining the built environment of buildings and integrating the buildings with the macro-environment are emphasised. This subject also promotes students' awareness and understanding on environmental issues.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing of the subject, students will be able to:

- understand the Earth is one interconnected system
- explain interactions between species and their environments
- analyse and assess the thermal and acoustic performance characteristics of buildings
- use the performance requirements to maintain a stable built environment for human comfort
- integrate buildings into the macro-environment: geographical factor and the consequent social, economic and ecological impact of the buildings
- identify the impacts of human on the environment
- apply background concepts and knowledge to review and investigate possible solutions of environmental problems

Indicative Contents

- **The Earth's Life-Support System**
Four major components: Atmosphere, Hydrosphere, Geosphere, Biosphere; Structure and composition of atmosphere; Effects and impacts of meteorology and climatology on the micro-climate and human comfort of buildings; Application in the design of buildings with consideration of weather and climate.
- **Fundamental Ecological Principles**
Ecological terms and concepts; The structure of ecosystems; Abiotic and biotic factors in an ecosystem.
- **Energy Flow**

One way flow of energy; The law of thermodynamics; Basic physics of light and electromagnetic radiation; Food chains, food webs and trophic levels; Ecological pyramids.

- **Matter Cycles**

Cycling of matter or nutrients; Carbon biogeochemical cycle; The hydrologic cycle.

- **Heat**

Nature of heat and heat transfer with heat gains or losses in buildings; Use of insulating materials, thermal insulation and comfort with design of buildings; Energy efficiency and conservation.

- **Water**

Water supplies; Treatment of water before discharge; Water pollution.

- **Degradation of Environment**

Types of pollution; Noise pollution; Nature of sound and its levels; Control of noise with building acoustics; Green buildings; Global agreements and conventions on environmental issues.

Teaching/Learning Approach

To create an environment that encourages active learning a wide range of methods will be adopted, and they may include lectures, small group discussions, student presentations, project based and problem-solving tasks and case study work. Where appropriate, the use of computer assisted learning techniques will be employed.

Students will be encouraged to reflect on their learning activities to review what they have learned and to plan further action and activity.

Assessment Approach

Assessment such as individual assignments, reports, tests and examination(s) will be used to assess the application of the knowledge assimilated in lectures and reinforced in tutorials. Students are trained to search for information, comprehend, criticise and summarise in own words in the project reports and problem-solving tasks. Students are required to present findings from projects and case studies.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Cunningham, W. P. and Saigo, B. W. (2010) *Environmental Science: A Global Concern*, 11th Ed., McGraw-Hill.

McMullan, R. (2007) *Environmental Science in Building*, 6th Ed., Palgrave Macmillan.

References

Baker-Laporte, P. (2001) *Prescriptions for A Healthy House : A Practical Guide for Architects, Builders, & Homeowners*, 2nd Ed., New Society Publishers.

Burberry, P. (1997) *Environment and Services*, 8th Ed., Pearson Education.

Heerwagen, D. (2004) *Passive and Active Environmental Controls: Informing the Schematic Designing of Buildings*, 1st Ed., McGraw-Hill.

Miller, G. T. and Spoolman, S. (2008) *Environmental Science: Problems, Concepts, and Solutions*, 12th Ed., Thomson learning.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject aims to arouse students' awareness and interest in architecture, from feeling architecture, experiencing architecture to thinking architecture. The subject provides students a general understanding of architecture and introduces them to the various means with which architecture fulfills the varied and conflicting demands for beauty, stability, function, environmental considerations and socio-economy. Examples of Hong Kong architecture will be used as case studies to assist students in understanding the subject through first hand experience. Studying the subject will broaden students' cultural perspective and help them develop critical and analytical thinking skills for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- recognise basic architectural aesthetic concepts
- appreciate architectural works with relevant principles
- recognise how architecture is shaped by – and at the same time reflects – cultural and social values

Indicative Contents

- **Man and Architecture**
Meaning and significance of architecture; Body, shelter and house; Terrain, community and city.
- **Order of Architecture**
Size, dimension, anthropometrics and proxemics; Form and geometry; Scale and proportion; Symmetry, axes, hierarchy, repetition, sequence, rhythm, texture, ornament; Light and space.
- **Understanding Architecture**
Beauty, stability and utility; Climate and environment; Programme and building typologies; Architectural components: walls, floors, stairs & openings; Zoning and circulation; Solid and void; Mass and envelop; Public and private; Enclosed and open; Materials, structure and construction; Architectural details.

- **Appreciation of Architectural Works**

Introduction to traditional Western Architecture; Introduction to traditional Chinese Architecture Vernacular Architecture; Introduction to Modern and Contemporary Architecture; Introduction to key architects; Architecture in Hong Kong; field trips and case studies.

- **Contemporary Architectural Issues**

Urbanisation and urban redevelopment; Heritage and conservation; Green architecture and sustainability; City form and public space; Collective housing; World fair and Expo; Museum and Bilbao Effect; Architecture and power.

Teaching/Learning Approach

Lectures will introduce students to the social, cultural and historical contexts in which architecture is generated and experienced. Tutorials and assignments (including short essays, written reports and presentations) will provide students with the opportunity to develop their understanding of the concepts taught in lectures. Field trips will provide students with the opportunity to contextualise their learning and appreciate architecture with first hand experience.

Assessment Approach

Students will be required to actively participate in lectures, tutorial and seminars, read articles, work on projects and conduct self-study. A variety of tools including class presentations, case studies, tests, essays, and written reports will be used to assess students' critical and analytical understanding of the subject.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Ching, F. D. K. (2007) *Architecture: Form, Space, and Order*, 3rd Ed., Wiley.

Conway, H. and Roenisch, R. (2005) *Understanding Architecture—An Introduction to Architecture and Architectural Theory*, 2nd Ed., Routledge.

Girouard, M. (1985) *Cities and People: A Social and Architectural History*, 1st Ed., Yale University Press.

Koolhaas, R. and Mau, B. (1998) *Small, Medium, Large, Extra-large: Office for Metropolitan Architecture*, 2nd Ed., Monacelli Press.

Rasmussen, S. E. (1962) *Experiencing Architecture*, 2nd Ed., M. I. T. Press.

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject equips students with the analytical skills for the understanding of different theories of human nature. Such understanding enables students to be aware of the intellectual environment, in which they are embedded, where the holding of different sets of assumptions might often lead to the adoption of very different approaches of studies, hence might drastically change one's beliefs and the course of one's action. It also enhances students' critical thinking for inter-disciplinary studies and life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the survey of major thinkers and their theories of human nature
- identify reasons and paradigms underlying each theory
- examine how these theories would lead to different approaches of studies, and the beliefs underlying one's actions
- recognise the strengths, weaknesses and unique contribution of different theories in examining human nature

Indicative Contents

- **Ancient and Medieval Theories**
Plato: forms or ideas, divided line, theory of knowledge, nature of soul, justice; Aristotle: causation and theology, hierarchy of souls, sensation and perception, ethics and politics, concept of Good Life; Augustine: evil and free will, doctrine of love and ethics; Biblical view: sinful nature, God as Creator and Redeemer, Salvation.
- **Eastern Tradition**
Confucianism: social discord, jen, self-discipline; Hinduism: Atman is Brahman, reincarnation; Buddhism: suffering in ignorance, Anatman self is illusory, nirvana.
- **Modern Theories**
Hobbes: The State of Nature; Rousseau: The Social Contract, Schopenhauer: The World as Idea, The will to live; Kant: Categorical Imperative, Transcendental Apperception; Marx: Historical Materialist Determinism, Alienation; Freud: Id, Ego, Superego, Unconscious; Existentialism: Kierkegaard, Nietzsche, Sartre, existence precedes essence, Radical Freedom, Meaning of Life; Darwinian Evolution and Sociobiology; Skinner and Behaviourism.
- **Themes and Debates in Theories of Human Nature**

Determinism vs. Libertarianism; Debates of Free Will; Consciousness; the Mind-Brain Relationship; Knowledge: a priori, a posteriori; Monism, Dualism, Materialism; Telos and Destiny, Transcendent reality; Subjectivity; Intentionality; Artificial Intelligence.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of different concepts and theories of human nature. Group discussions and activities may be arranged to stimulate students' interests or their awareness of the practical implications of some concepts. Worksheets may also be used to guide students through the reasoning behind more complex theories.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. Activities in tutorials will normally include student presentations and discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and essays designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Pojman, L. P. (2006) *Who Are We? : Theories of Human Nature*, Oxford University Press.

Stevenson, L. F. (2004) *Ten Theories of Human Nature*, 4th Ed., Oxford University Press. (萊斯列·斯蒂芬森，大衛·哈貝曼著，施忠連譯：《世界十大人性哲學》，上海市：復旦大學出版社，2007。)

References

Gross, R. (2009) *Themes, Issues and Debates in Psychology*, 3rd Ed., Hodder & Stoughton.
Hergenhahn, B. R. (2009) *An Introduction to The History of Psychology*, 6th Ed., Wadsworth.

Matthews, E. (2005) *Mind (Key Concepts in Philosophy)*, Continuum.

Searle, J. R. (2004) *Mind: A Brief Introduction*, Oxford University Press.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces the basic science of nutrients and the general principles of food safety and hygiene. The goal is to equip students with the framework of the background knowledge, so as to enable them to appreciate the relation between diet and health, and progressively to create an awareness of the current issues of nutrition, food safety and hygiene. After studying the subject, students will be able to assess the validity of nutritional information, and in the long term, sharpen their critical thinking for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

Upon completion of the subject, students will be able to:

- understand the role and function of nutrients in health and diseases, and the inter-relation between diet and fitness
- appreciate the current issues of nutritional claims on health from a critical point of view
- plan a balanced diet for different stages during the life cycle
- plan a balanced and sanitary diet to maintain health, fitness and vitality
- adopt the principles in food preservation, and follow the guidelines of preventive measures against food-borne diseases
- appreciate the current issues of food safety and hygiene on health

Indicative Contents

- **Overview of Nutrients and Nutrition**
Important nutrients to human health, carbohydrates, lipids, proteins, vitamins, minerals and water; Dietary reference intakes and nutritional assessment; Food labelling law in Hong Kong.
- **Metabolism**
Digestion, absorption, transportation, and storage or utilisation of nutrients in the human body.
- **Planning of Diet in Health and for Prevention of Some Common Degenerative Diseases**
Principles and guidelines in planning balanced diet to maintain health and prevent certain diseases such as heart disease, stroke, cancer and diabetes.
- **Weight Management**
Energy balance between intake and expenditure; Definition of normal, over- and under- weight using body mass index; Maintenance of body weight within a healthy range.

- **Nutrition and Fitness**

Energy requirement for various physical activities, occupational needs and ages.

- **Nutrition in Life Cycle**

Dietary consideration during various stages in the life cycle: childhood, adolescence, adulthood, elderly, pregnancy and lactation.

- **Food Safety**

Changes of foods during storage; Principles of food storage; Examples of maintaining freshness in foods; Current and local issues of food contamination and adulteration.

- **Food Hygiene**

Common microbial contamination and spoilage of food; Risk factors for foodborne illness; Food preservation, prevention measures against microbial foodborne illness.

Teaching/Learning Approach

Lectures will emphasise on the understanding and explanation of the basic information and relevant concepts of nutrition and food hygiene. Local issues will serve as illustrated examples.

Tutorials will provide a channel for discussion and illustration of the background knowledge in nutritional assessment, design of a healthy diet for health and for some common degenerative diseases. Tutorial questions and activities will be arranged to stimulate students' interests or their awareness of the practical implications of some concepts.

Assessment Approach

Assessment such as individual and group assignments, tests and an examination will be used to assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and application of the theoretical knowledge. Written assignments and tutorial participation are for training written and oral communication skills respectively.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Wardlaw, G. M. and Smith, A. M. (2012) *Contemporary Nutrition: A Functional Approach*, 2nd Ed., McGraw-Hill.

Whitney, E., DeBruyne, L. K., Pinna, K. and Rolfes, S. R. (2011) *Nutrition for Health and Health Care*, 4th Ed., Wadsworth, Cengage Learning.

References

Geissler, C. A. and Powers, H. J. (Eds.) (2009) *Fundamentals of Human Nutrition: For Students and Practitioners in the Health Sciences*, Elsevier/Churchill Livingstone.

McSwane, D., Rue, N. R. and Linton, R. (2005) *Essentials of Food Safety and Sanitation*, 4th Ed., Pearson/Prentice Hall.

Heredia, N., Wesley, I. and Garcia, S. (Eds.) (2009) *Microbiologically Safe Foods*, John Wiley & Sons.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject aims at enhancing students' awareness of gender stereotypes and gender inequality in society from both the personal perspective and the sociological perspective. It equips them with a critical and gender-sensitive mind to observe and interpret social interaction and phenomena. Social construction of gender issues is discussed to enable students to appreciate the importance of gender balance and equality in the changing human world.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- identify a framework of study in gender issues
- analyse the current issues of gender inequality from a sociological perspective
- apply relevant perspectives in analysing gender issues
- demonstrate gender sensitivity toward social issues

Indicative Contents

- **Thinking about Gender**
Sociological imagination and the sociological framework for thinking about women and men.
- **Gender Difference and Gender Inequality**
Natural differences between the sexes; Discrimination in everyday life; Gender inequality in sociological perspectives.
- **The Social Construction of Gender**
Femininity, masculinity and the concept of androgyny; Gender-related language and knowledge; Social construction of gender in cultural contexts and in Chinese societies.
- **Sex Segregation and Work**
The male/female earnings gap; Sex segregation in the workplace; Consequences of occupational sex segregation.

- **Family, Economy and the Institutionalisation of Gender Inequality**
Historical perspectives on modern families; Feminist perspective on families; Diversity of contemporary households.
- **Gender, Social Stratification and Social Policy**
Current social policy related to gender issues; Concept of a gender-balanced society.

Teaching/Learning Approach

To facilitate students' learning in this subject, lectures, seminars and group presentations will be offered. Students will be encouraged to actively participate in the learning process. During lectures, theories and concepts on sociology and gender issues will be delivered. In seminars, students will take part in group presentations and discussion to consolidate and enrich their understanding and critical analysis of the subject matter.

Assessment Approach

In addition to a test that assesses students' understanding and application of gender concepts and theories, presentations, case studies and group projects as well as written reflection papers will be used to enhance students' analytical ability and sensitivity in conducting personal and sociological analysis of gender issues.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Andersen, M. L. (2006) *Thinking About Women: Sociological Perspectives on Sex and Gender*, Allyn and Bacon.

Lindsey, L. L. (2011) *Gender Roles: A Sociological Perspective*, Pearson Prentice Hall.

References

Francis, B. and Skelton, C. (2001) *Investigating Gender Contemporary Perspectives in Education*, Open University Press.

Lee, E. W. Y. (2003) *Gender and Change in Hong Kong: Globalisation, Postcolonialism and Chinese Patriarchy*, Hong Kong University Press.

Lips, H. M. (2005) *Sex & Gender : An Introduction*, McGraw-Hill.

Thorne, B. (1993) *Gender Play: Girls and Boys in School*, Open University Press.

Pamela Abbott & Claire Wallace 著、俞智敏等譯：《女性主義觀點的社會學》，巨流圖書公司，1996 年版。

顧燕翎、林芳玫等：《女性主義理論與流派：本土撰寫最完整女性主義入門讀本》，女書文化事業有限公司，2000 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This course provides a platform for students to acquire, consolidate, and improve their knowledge in English grammar in different contexts that involve extensive use of the English language, such as news reporting, business writing, oral communication, and literary writings. Through these contexts, students will understand the underlying English grammatical principles, with a major focus on the formation and functions of various sentence patterns for different purposes of writing.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- apply relevant grammatical concepts learnt to facilitate the communication process for various purposes
- analyse, explain and correct grammatical inconsistencies, ambiguities and other stylistic aberrations to achieve communicative success in different contexts
- identify the use of different sentence patterns in different text types (e.g. news, commercial advertisements, business correspondences, fictions, films, etc)
- produce grammatical and context-specific texts with reference to the nature and purpose of communication

Indicative Contents

- **Grammar in Newspaper**
Simple sentence; Compound and complex sentence; Sentence part; Word class; Phrase; Clause; Variation in sentence structure.
- **Grammar in Business**
Subjunctive; Imperative; Narrative; Interrogative; You-attitude; Sentence reduction for brevity; Sentence expansion for clarity.
- **Grammar of the Spoken Language**
Contraction; Minor sentence; Word stress; Sentence stress; Intonation; Connected speech; Coarticulation; Assimilation.

- **Grammar and Literary Language**
Artistic license; Stylistic aberrations; Grammar of artistic language.

Teaching/Learning Approach

Lectures will be reserved for discussing and analysing the inner workings of English grammar in different contexts.

Tutorials will be practice sessions for ensuring students' thorough comprehension of the rules of English grammar by applying them to the analysis and production of grammatical and context-specific sentences. Students are thus expected to be specially disciplined and committed to the subject which entails a rather systematic and largely logical approach to the study of English grammar.

Assessment Approach

Assessment tools will include take-home assignments that help students to revise materials taught and discussed in the classes, quizzes and a final examination that evaluate the depth of internalisation of the newly-learnt concepts through students' demonstration of applying these concepts to their analysis and creation of texts for different contexts.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Steer, J. M., Carlisi, K. A. (1998) *The Advanced Grammar Book*, 2nd Ed., Heinle & Heinle-Thomson.

References

Casagrande, J. (2006) *Grammar Snobs Are Great Big Meanies*, Penguin.

Crystal, D. (2004) *Making Sense of Grammar*, Pearson Longman.

Hughes, R. (2005) *Exploring Grammar in Writing*, Cambridge University Press.

Koch, R. S. (2000) *Focus on Grammar: An Advanced Course for Reference and Practice Workbook*, 2nd Ed., Addison Wesley.

Nettle, M. and Hopkins, D. (2003) *Developing Grammar in Context: Grammar Reference and Practice (Intermediate)*, Cambridge University Press.

程度	2
學分	3
教學語言	中文〔粵語講授〕
修讀條件	無
評估方法	50%課堂習作 50%期終考試

科目目標

本科目主要介紹中國文化的基本精神及特質，簡論中西文化在價值系統及哲學觀念的差異。本科目分別從傳統政治、社會、倫理、法律、哲學、宗教、藝術、美學等多方面，講解中國文化基本概念和知識。本科目尤重引導學生運用所學的中國文化知識，反思傳統思想和價值對今日生活的影響。同學須就不同的文化議題，擬定研究課題，撰寫報告及書面習作，體會中國文化的特質，中國文化與現代社會的命運。

科目統籌小組在籌備講授及評核本課程時，須參照相關的「課程內容藍圖」，了解本科目的角色定位，如何在課程層面上協助學生達到預期的學習成果。

學習成果

學生成功完成本科目，應能：

- 了解中西方文化的基本不同；
- 體會中國文化的意義；
- 學習從上層及下層的不同角度欣賞中國文化；
- 從多元的視野中，分析中國文化的要義及特點；
- 培養從宏觀及微觀的角度，探討中國文化；
- 從日常生活中，應用中國哲學及文化的知識。

課程內容

- **中國文化的要義**
何謂中國文化？研究文化的方法，介紹當代中外學者對中國文化的看法。
- **家國同構的倫理觀**
長幼有序，內外有別。同心圓的逐層放大，家庭倫理如何拓展為國家秩序，成為中國社會的普遍共識。
- **家國的秩序：中國禮法觀念**
傳統社會的刑法、禮法。從「禮」到「法」，國家秩序的需要如何在社會共識上，依靠國家權力而建立。
- **中國宗教觀**

從儒、道、釋三家人生觀和生死觀，民眾信仰的基本觀念，闡明中國上層和下層的兩個信仰世界。

- **中國美學思想**
中國人的傳統審美觀念，與中國文化思想價值的關係。
- **中國藝術**
傳統藝術的基本特點及欣賞。
- **中國地理觀**
中國地理觀從古代的「天下」到近代的「萬國」。
- **中國飲食文化**
中國南北飲食文化的異同，飲食文化的器具。

教學方法

本科目理論與思考並重，除了於課堂上講解傳統文化的特質，也要求學生運用所學知識，反思傳統文化對現代生活的影響。學生須參與討論及小組報告，進一步活用傳統文化知識。

評核方法

本科目採用持續評估方法，學生須撰寫學期論文，也須完成導修課堂小組報告，另有期中測驗及期末考試，綜合檢測學生掌握本科目的水平。

每班的教學計劃 (Teaching Plan) 詳述個別習作佔整體評核的實際比重。學生收到習作時，均會獲告知習作所評核的是那些預期學習成果。

學生所需的努力

學生預期要花共約一百三十小時在課堂、導修、習作、備課、溫習、測驗及考試上。

指定課本

葛兆光：《古代中國文化講義》，臺北：三民書局，2005 年版。

參考書

Craig, A. M. (2001) *The Heritage of Chinese Civilisation*, Prentice Hall.

De Bary, W. T. (Eds.). (2000) *Sources of Chinese Tradition*, Columbia University Press.

Ebrey, P. B. (Eds.). (1993) *Chinese Civilisation: A Sourcebook*, The Free Press.

Fairbank, J. K., Goldman, M. (Eds.). (1998) *China: A New History*, Harvard University.

王力編：《中國古代文化史講座》，北京大學出版社，1989 年版。

余英時：《歷史人物與文化危機》，上海人民出版社，1987 年版。

李澤厚：《美學論集》，台北：三民書局，1996年版。

周育德：《中國戲曲文化》，中國友誼出版社，1995 年版。

香港城市大學中國文化中心編：《中國文化導讀》，香港城市大學，2001 年版。

唐君毅：《中國文化之精神價值》，廣西師範大學出版社，2005 年版。

黃嫣梨：《文史十五講》，北京大學出版社，2001 年版。

錢穆：《民族與文化》，東大圖書股份有限公司，1989 年版。

龔鵬程：《中國傳統文化十五講》，北京：北京大學出版社，2006 年版。

程度	2
學分	3
教學語言	中文〔粵語或普通話講授〕
修讀條件	無
評估方法	60%課堂習作 40%期終考試

科目目標

本科目透過課堂講授、導修練習及分組習作的方式，訓練同學對中國文學的閱讀及鑑賞能力。透過掌握中國文學的特質，同學可明瞭文學與社會、生活的關係，以及提升自身的文化素養。

科目統籌小組在籌備講授及評核本課程時，須參照相關的「課程內容藍圖」，了解本科目的角色定位，如何在課程層面上協助學生達到預期的學習成果。

學習成果

學生成功完成本科目，應能：

- 認識中國文學各種文體的特點；
- 掌握中國文學的流變，了解中國文學的特質；
- 有效運用各種閱讀文本的方法，提高對文學作品的鑑賞能力；
- 加強對中文的運用，培養中國文化修養；
- 提升批判思考及創造性思維的能力。

課程內容

- **閱讀中國文學的方法**
概述中國文學的特質，並介紹閱讀中國文學文本的方法。
- **詩言志**
探討文本與作者的關係，文學作品的創造及作者的感發問題。可選用文本：詩，如杜甫《登高》、李商隱《無題·八歲偷照鏡》等。
- **中國文學的情**
探究中國文學的重要特質——情，如何在作品表現的問題。可選用文本：詩、詞、書信、小說，如元好問《雁丘詞·問世間情是何物》、林覺民《與妻訣別書》、張愛玲《傾城之戀》等。
- **文以載道**
探討文學與社會的關係。講解文學作品如何承載社會課題。可選用文本：詩、文，如杜甫《新婚別》、梁啟超《論小說與群治的關係》等。
- **中國文學與生活**
講解中國文學作品如何體現文人的生活趣味，如茶、酒、藥、旅遊與文學作品。可選用文本：詩、文、小說，如陶淵明《飲酒》、劉鶚《老殘遊記》、沈從文《湘行散記》等。

■ 中國文學的雅與俗

剖析雅俗這對概念與中國文學的關係，及審美標準的變遷等問題。可選用文本：詞、小說、戲曲，如羅貫中《三國演義》、王實甫《西廂記》、金庸《射雕英雄傳》等。

教學方法

本科目理論與實踐並重。主講課集中講解與課題相關的概念和理論，導修課為學生提供相關的課堂練習，如口頭報告、小組討論及小習作等，以鞏固所學。本科目採用材料廣泛，體裁眾多，古今兼備。

評核方法

本科目採用持續評估方法，分別從學生的口頭報告、書面報告、課堂參與，加上測驗和考試，檢測學生掌握本科目的水平。

每班的教學計劃 (Teaching Plan) 詳述個別習作佔整體評核的實際比重。學生收到習作時，均會獲告知習作所評核的是那些預期學習成果。

學生所需的努力

學生預期要花共約一百三十小時在課堂、導修、習作、備課、溫習、測驗及考試上。

指定課本

本科目涉及的參考材料較廣泛，無指定課本。

參考書

朱自清：《朱自清古典文學論文集》，上海古籍出版社，1981 年版。

青木正兒：《中國文學概說》，莊嚴文化，1981 年版。

徐復觀：《中國文學精神》，上海書店出版社，2004 年版。

葉維廉：《中國詩學》，人民文學出版社，2006 年版。

劉大杰：《中國文學發展史》，百花文藝出版社，2007 年版。

鄭振鐸：《中國俗文學史》，上海人民出版社，2006 年版。

魯迅：《中國小說史略》，三聯書店，1996 年版。

龔鵬程：《文學散步》，漢光文化事業股份有限公司，2003 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This course provides various communication models and theories for students to understand the human communication process. It develops their abilities and interests in evaluating the effectiveness of communication in different kinds of contexts ranging from self-concept to communication in mass media. It also helps students develop their creativity and problem-solving skills and prepares them to take more focused courses in communication such as media design and production.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- identify and explain models and theories that are relevant to the nature of human communication process
- apply communication models and theories, creativity and problem-solving skills to evaluate the effectiveness of self-communication, communication in personal relationships, communication in groups and communication in organisations
- suggest improvements on ineffective communications
- explain the role and impact of mass media on human communication
- apply the concept of equality and respect in modern communication

Indicative Contents

- **Fundamentals of Communication**
Importance of communication; Key elements of communication; Models of communication; Historical development of communication; Communication research; Equality and respect.
- **Communication Theories**
Perceiving and understanding; Verbal and nonverbal communication; Listening and responding; Creating supportive communication climates; Adapting communication to cultures and social communities.

▪ **Communication in Different Contexts**

• **Communication and self-concept**

Personal identity; Particular others and generalised others; Influence from family, peers and society; Ways to build up self-esteem.

• **Communication in Personal Relationships**

Passion and commitment; Relationship dialectics.

• **Communication in Groups and Teams**

Definitions of groups and teams; Limitations and strengths of groups; Four kinds of communication in groups (Task, procedural, climate and egocentric); Conflict management.

• **Communication in Organisations**

Definition of an organisation; Different elements of organisational culture; Functions of organisational communication.

• **Mass Communication**

Nature of mass communication; Historical development of mass media; Different theories of mass communication (Hypodermic Needle Model, Uses and Gratification, Agenda Setting, Cultivation); Media literacy.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of communication theories with specific reference to examples from local daily life. Students will have the chance to discuss and reflect on communication dialogues.

Seminars will deepen students' understanding of the theories by engaging them in more active learning tasks. Students will be provided the opportunity to watch videos of simulated communication contexts and to discuss the effectiveness of communication in those particular contexts. They will also have the chance to share their analyses and suggestions with classmates.

Assessment Approach

A variety of assessment tools will be used, including group projects and presentations, written reports, case studies, test(s) and examination(s) designed to develop and assess students' achievement of the subject's expected learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Wood, L.T. (2011) *Communication Mosaics: an Introduction to the Field of Communication*, 6th Ed., Wadsworth.

References

Baran, S. (2010) *Introduction to Mass Communication: Media Literacy and Culture*, 6th Ed., McGraw-Hill.

Devito, J. A. (2012) *Human Communication: the Basic Course*, 12th Ed., Pearson-Education.

Folkerts, J., Lacy, S. (2007) *The Media in Your Life: An Introduction to Mass Communication*, 4th Ed., Pearson-Education.

Gamble, T. K., M. Gamble. (2010) *Communication Works*, 10th Ed., McGraw-Hill.

Hybels, S., Richard L. W. (2012) *Communicating Effectively*, 10th Ed., McGraw-Hill.

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject provides a solid foundation of knowledge for Eastern and Western philosophy and further equips students with a basic understanding of the scope and the meaning of philosophy. The course aims to demonstrate the importance of philosophical reflection on things that matter in life, such as knowledge, the nature of mind, rationality, god, moral values, art, human identity and the meaning of life.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the scope and meaning of philosophy
- grasp the basic characteristics of both western and eastern philosophy, and also their main differences
- understand the basic methods and problems in philosophy, and appreciate the works of philosophers
- apply the philosophical theories in analysing students' own situation and develop their plausible worldview

Indicative Contents

- **The Nature of Philosophy**
The different branches of philosophy; The meaning of philosophy; The significance of philosophical reflection.
- **Metaphysics**
The existence of God; Personal identity; Mind and body; Free will and determinism.
- **Epistemology**
Skepticism; The nature of knowledge; Theories of truth; Theories of meaning.
- **Ethics**
Ethical absolutism and relativism; Different types of normative theories; The meaning of life.
- **Eastern philosophy**
Confucius; Mencius; Taoism; Buddhism.
- **Western philosophy**
Rationalism, Empiricism; Pragmatism; Existentialism.

- **The Differences between Eastern and Western philosophy**

An elementary outline on the differences between Eastern and Western philosophy.

Teaching/Learning Approach

Learning philosophy is a matter of acquiring not so much a body of information but skills to reflect on concepts and their relations in a critical manner. The lectures will provide students with a basic understanding of some of the major philosophical fields, figures and topics. Students will be encouraged to criticise those ideas, develop their own views and defend them with rigorous reasoning. Discussions and debates will be conducted in tutorial lessons to sharpen the students' philosophising ability. Moreover, a number of films will be used as examples for discussing philosophical ideas.

Assessment Approach

A variety of assessment tools will be used, including presentations, group projects, book reading reports, tests and an examination designed to develop and assess critical thinking as well as analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Reading

Recommended Textbooks

Nagel, T. (2004) *What Does It All Mean? A Very Short Introduction to Philosophy*, Oxford University Press.

Pojman, L. (2007) *Introduction to Philosophy: Classical and Contemporary Readings*, 4th Ed., Oxford University Press.

References

Blackburn, S. (2001) *Think: A Compelling Introduction to Philosophy*, Oxford University Press.

Hospers, J. (1996) *An Introduction to Philosophical Analysis*, 4th Ed., Prentice Hall.

Warburton, N. (2004) *Philosophy: The Basics*, 4th Ed., Routledge Press.

Rahula, W. (1974) *What the Buddha Taught*, Grove Press.

勞思光：《新編中國哲學史》，三民書局，1999 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject aims to develop students' knowledge and understanding of the basic concepts of politics and political science with reference to current issues. It gives students a broader outlook on the world through an appreciation of different political systems and the relationship between individuals and the state. It equips students with analytical skills to apply the concepts learnt into examining the politics of Hong Kong, the greater China and the rest of the world. The interplay between government institutions and the informal actors are also introduced. This subject also aims to nurture in students attitudes that are conducive to their participation in political and social affairs as active and responsible citizens.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand and discuss the multi-faceted concepts in political science
- acquire the knowledge of the underlining operation of political dynamics
- analyse current affairs with reference to conceptual frameworks of political science
- outline the political development of Hong Kong, the Greater China and Western democracies

Indicative Contents

- **Basic Concepts**
Politics; Political sciences; Political power; Authority; Legitimacy; Nation; State; Sovereignty; Ideology; Democracy; Liberty; Political culture; Bureaucracy.
- **Government Structure**
Constitution; Legislature; Executive and civil services; Judiciary.
- **Informal Actors**
Political parties; Interest groups; Mass media; Public opinion; Social movement.
- **Political Issues**
Democratisation; Political development, Hong Kong political reform; the Basic Law; election.
- **International Relations**
Cold War; Post-Cold War; Globalisation; International political economy and international institutions.

Teaching/Learning Approach

Lectures will expound the concepts and applications of theories and approaches illustrated by current issues. Audio-visual materials will be used during lectures whenever necessary to facilitate learning and to consolidate students' understanding of topics.

Tutorials will be conducted with small group presentations and issue-based learning.

Off campus observation and interview will be used as one of the methods to enhance students' interest of the subject matters and to consolidate the knowledge learnt.

Assessment Approach

A variety of assessment tools, such as presentations, a field research project, a term paper, tests, and an examination, will be applied to assess the knowledge assimilated, and the analytical and critical thinking ability.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Roskin, M. G. et al. (2010) *Political Science: An Introduction*, 11th Ed., Pearson Education Inc.

Heywood, A. (2007) *Politics*, 3rd Ed., Basingstoke: Palgrave Macmillan.

References

Sing, M. (Ed.). (2003) *Hong Kong Government and Politics*, Oxford University Press.

Lam, W. M. et al. (2007) *Contemporary Hong Kong Politics: Governance in the Post-1997 Era*, Hong Kong University Press.

Ma, N. (2007) *Political Development in Hong Kong: State, Political Society, and Civil Society*, Hong Kong University Press.

Level	2
Credits	3
Medium of Instruction	Japanese, supplemented with English and/or Cantonese
Prerequisites	CCN1019 Japanese I, or a minimum 42 hours training in Japanese and/or an equivalent level of proficiency in Japanese, which must be supported by an official document
Assessment	60% coursework 40% examination

Aims

This foundation course is basically a continuation of CCN1019 Japanese I. It aims to further develop and reinforce students' competence in correct pronunciations, different writing systems, vocabulary, sentence structures and grammar, as well as daily conversations through more reading, writing, speaking and listening practices of the Japanese language.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- pronounce, read and write *Katakana*, and other new sounds
- develop a cumulative vocabulary pool of about 1,000 words (including *Kanji*, commonly used expressions and phrases)
- acquire a fundamental knowledge of Japanese grammar and sentence patterns at the elementary level
- speak simple Japanese phrases and sentences to initiate and respond in situational conversations at the elementary level
- read and understand short passages by mastering all Japanese characters, namely *Hiragana*, *Katakana*, and *Kanji*
- cultivate a preliminary understanding of Japanese culture

Indicative Contents

- **Phonetic and Writing Systems**
All vowels and consonants in their *Katakana* forms; More new sounds and their corresponding *Katakana* practices.
- **Vocabulary/ Reading/ Writing**
Essential daily vocabulary (e.g. location and position, different counters and counting methods); read short dialogues and passages; Writing basic sentences in correct word order.
- **Grammar**
More verbs (e.g. transitive, give, receive), state verbs (e.g. understand, like); Present/past tense form, affirmative/negative form and verb conjugations; Expressions of existence; Adjectives and conjugations; Comparative and superlative structure; more particles.

- **Speaking/ Listening**

Substitution, transformation and expansion drills; Situational conversations (e.g. pay a visit to someone, invitation and decline, shopping, sightseeing, ordering); Simple listening comprehension practice.

- **Culture/ Society**

Selected topics on Japanese culture and society.

Teaching/Learning Approach

This course will reinforce students' acquisition of correct Japanese sounds and to master the *Katakana* writing system. Through direct drills, practices and activities in classes, students will participate actively in the learning process. A multimedia approach will be adopted whereby students will be exposed to audio and visual materials to enhance their understanding of the Japanese language and culture.

Assessment Approach

A variety of assessment tools will be used, including written assignments, group projects, written reports, quizzes, tests and examination(s) designed to develop and assess students' achievement of the subject intended learning outcomes as well as communication skills in the Japanese language.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

大新書局出版社編輯部：《大家的日本語—初級 I》（《みんなの日本語》），大新書局，2011 年版。

References

向日葵出版社編：《日語假名習字簿》，向日葵出版社，2010 年版。

大新書局出版社編輯部：《大家的日本語—初級（讀本篇）》，大新書局，2010 年版。

大新書局出版社編輯部：《大家的日本語—初級 I, II (句型練習冊)》，大新書局，2011 年版。

大新書局出版社編輯部：《大家的日本語—初級 I, II (練習 C、会話 イラストシート)》，大新書局，2007 年版。

向日葵出版社編：《日本語 90 日 1》(*90 Days of Japanese Language 1*)，向日葵出版社，2010 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject equips students with basic knowledge on the importance of light to our living and work, and on the parameters affecting human's perception on the natural and built environment. It provides students with analytical skills to appraise the natural and built environment based on human biological, psychological and physiological needs. With a better understanding of the interrelationship between light, human and the environment, students will be able to develop their ability in suggesting ways of improvement for the benefits of human and the environment.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the nature of light and compare the properties of natural and artificial light sources
- give an account of the parameters used to describe the natural and built environment
- identify the interrelationship between light, human and the environment
- explain the requirements of environmental parameters to satisfy human biological, psychological and physiological needs

Indicative Contents

- **Lighting Quantities and Terminologies**
Quantities for measurement of light and colour; Terminologies used to describe human vision.
- **Overview of Natural and Artificial Light Sources**
Daylight availability; Working principles and photometric characteristics of artificial light sources.
- **Human Senses**
Sensation, perception and environmental stimuli; Non-linearity and power law; Subjective sensory perception; Visual sense and the eyes; Aural sense and the ears; Skin senses of heat and cold.
- **Natural Environment**
Climate classification; Meteorological data: wind, temperature, precipitation, humidity, solar angles, direct and diffuse solar radiation, sun-path diagrams, etc; Interaction with the built environment.
- **Built Environment**
Human requirements; Thermal comfort issues; Sound and noise control; Indoor air quality; Natural ventilation.

Teaching/Learning Approach

Lectures and tutorials will constitute the delivery of this subject. Lectures will aim at delivering the basic knowledge of theories and facts which will lead to the achievement of all intended learning outcomes. Tutorials will provide students with the opportunity to deepen their understanding and to enhance their problem-solving ability. Activities in tutorials will normally include problem-solving exercises, case studies, and presentations, which will facilitate learning to achieve all intended learning outcomes.

Assessment Approach

A variety of assessment tools will be used, including assignments, presentations, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills including critical thinking, analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Chadderton, D. V. (2007) *Building Services Engineering*, 5th Ed., Taylor & Francis.

References

HK-BEAM Society (2005) *Enhancing Hong Kong's Built Environment*, HK-BEAM Society.

Goldstein, E. B. (2010) *Sensation and Perception*, 8th Ed., Wadsworth Cengage Learning.

Phillips, D. (2000) *Lighting Modern Buildings*, Architectural Press.

Valberg, A. (2005) *Light, Vision, Color*, John Wiley & Sons.

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	CCN1004 Creative and Critical Thinking or CCN1035 The Art of Reasoning or CCN1036 Creative and Design Thinking or equivalent
Assessment	50% coursework 50% examination

Aims

This subject introduces students to the vocabulary and grammar of logic, and enables them to master the basic techniques to determine the validity of arguments. It equips students with the ability of logical reasoning and makes them critically aware of fallacies in everyday reasoning. It also cultivates students' appreciation of logic and reasoning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- recognise arguments presented in natural language
- apply logical techniques in assessing reasoning both in everyday life and in academic pursuits
- become more critically aware of fallacies in everyday reasoning

Indicative Contents

- **Logic and Reasoning**
The nature and uses of logic; Logic and arguments; Arguments and reasoning; Distinction between deductive logic and inductive logic.
- **Propositional Logic**
The concept of proposition; Logical connectives and truth functions; Analysis of arguments by means of logical symbols; Rules of natural deduction; The truth-table method and the short-cut method.
- **Predicate Logic**
Predicates and quantifiers; Translating a sentence into predicate symbols; The use of natural deduction to prove the validity of an argument.
- **Applications of Logic and Reasoning**
Analysis and evaluation of logical reasoning in western philosophy; Analysis and evaluation of logical reasoning in Chinese philosophy; Analysis and evaluation of logical reasoning in advertisements.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and rules of logic and reasoning illustrated with examples. Students will be required to do exercises after the lectures, so as to ensure that they can apply the concepts and the rules.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of logical techniques. Activities in tutorials will normally include student presentations, discussions of problems, and doing exercises.

Assessment Approach

A variety of assessment tools will be used, including assignments, group projects, presentations, case studies, written reports, tests and an examination designed to develop and assess students' grip of logical concepts and techniques and their ability of applying these concepts and techniques to everyday reasoning.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Hurley, P. (2011) *A Concise Introduction to Logic*, 11th Ed., Thomson Wadsworth.

References

Copi, I., Cohen, C. & McMahon, Kenneth. (2011) *Introduction to Logic*, 14th Ed., Pearson Education.

Fisher, A. (2004) *The Logic of Real Arguments*, Cambridge University Press.

Thomas, S. N. (1997) *Practical Reasoning in Natural Language*, 4th Ed., Prentice Hall.

馮耀明：《公孫龍子》，東大，2000 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject aims to introduce the theoretical frameworks and research findings on love and intimacy, as well as examining their roles in identity formation of individuals. Students are expected to understand the issues concerned with reference to the significant evolutions over time and drastic changes in social structures. This subject also provides a general orientation of personal growth, so that students can develop healthy and positive social relationships with others.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- elaborate different approaches to defining and measuring love
- analyse the nature of intimacy on various levels of social relationships
- explain the formation of self-identity from the perspectives of personality, life-span development, feminism, law, and media
- reflect on various practical concerns and social phenomena based on the dynamic interaction of love, intimacy and self-identities of different individuals

Indicative Contents

- **Basic Dynamics of Interpersonal Attraction**
Development of relationship science; Varieties of relationships; Proximity, physical attractiveness, similarity and reciprocity; Research findings on cultural and gender differences on mate selection.
- **Conceptualisation of Love**
Sternberg's Triangular Theory of Love; Lee's six styles of love; Scientific measurements of love; Attachment styles in love relationships; Love and marriage over the history and under different social structures; Problematic aspects of love (including obsession and mismatched love styles).
- **Nature of Intimacy**
Building blocks of closeness (verbal and non-verbal communication); Exchange versus communal relationships; Effective strategies to enhance relationships; Constructive coping styles in relationship loss; Intimate relationship issues and related research findings (including jealousy, conflict, and loneliness).
- **Formation of Identity**

Different aspects of self-identity; Bio-psycho-social processes of identity development; Theoretical views on gender and sexual identities; The Feminist Revolution; Media, gender stereotypes and identity; Psychological adjustments on identity transformations.

▪ **Current Issues and Social Problems**

Marriage laws and related social welfare or resources planning; Sexual harassment and gender politics; Sexual Liberation Movement and moral implications concerned (e.g., sexual orientations and cyber-sex practices); Complexities in conceptualising “disorders” related to relationship difficulties or identity maladjustments; Ethical principles in sex education.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Group discussions on various case studies, newspapers, films and TV commercials may be arranged to stimulate students’ interest or their awareness of practical implications of some concepts.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. The Experiential learning approach will be adopted in debate sessions, simulation exercises, role-plays and so on to let students reflect on their personal values and real life experiences.

Assessment Approach

In order to develop and assess students’ achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical abilities and communication skills, a variety of assessment tools will be used, including case studies, self-reflection paper, journal review or critique, test(s) and a final examination.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Miller, R. S. and Perlman, D. (2012) *Intimate Relationships*, 6th Ed., McGraw-Hill Higher Education.

References

Berscheid, E. and Regan, P. (2005) *The Psychology of Interpersonal Relationships*, Pearson Education.

Firestone, R. W., Firestone, L. A. and Catlett, J. (2006) *Sex and Love in Intimate Relationships*, American Psychological Association.

Gauntlett, D. (2008) *Media, Gender and Identity: An Introduction*, 2nd Ed., Routledge.

Level	2
Credits	3
Medium of Instruction	English, supplemented with Chinese
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject provides an introductory survey of mass media and its effects on culture, in particular in Hong Kong society. It enables students to understand and apply relevant concepts in cultural and media theory, and identify the relationship between media and cultural production across various mass media including television, newspaper, and the Internet, especially within the context of Hong Kong.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- apply concepts in cultural and media theories
- compare and contrast the nature of various types of mass media and their potential effects on the individual and society
- identify the relationship between media and cultural production, especially within the context of Hong Kong

Indicative Contents

- **The Process and Functions of Mass Communication**
The SMCR model; Mass communication and its characteristics; Five social functions of mass media.
- **Newspapers**
The case of Apple Daily; Multiple definitions of news; Gatekeeping; Framing; Agenda-setting; Implications of the study of news production.
- **Television**
History and significance of television; Regulation of television; The idea of public service broadcasting; Principles and crisis facing public service broadcasting.
- **Internet and the Era of New Media**
Significance of Internet; Internet as new media; Study of the impact of Internet; Global village; Double-edged sword.
- **Media Influences**
Media's tremendous and limited effects; Micro- and macro- level media's impacts; Social learning theory; Observational learning.

Teaching/Learning Approach

Lectures will provide students the opportunity to learn concepts through a variety of media, including books, lecture PowerPoint's, videos, newspaper cuttings, and the Internet. By exposing students to the mass media as they are used and consumed in modern societies, the subject will help students draw connections between theoretical concepts and real world applications.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. Activities in tutorials will normally include student presentations and discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, projects, case studies, class exercises, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Chan, A. (2010) *Understanding Media and Culture*, 2nd Ed., McGraw Hill.

References

Baran, S. J. (2012) *Introduction to Mass Communication: Media Literacy and Culture*, 7th Ed., McGraw Hill.

Dominick, J. R. (2011) *The Dynamics of Mass Communication: Media in Transition*, 11th Ed., McGraw Hill.

Wilson, J. R. and Wilson, S. L. (1998) *Mass Media/Mass Culture: An Introduction*, 4th Ed., McGraw Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% coursework

Aims

The main purpose of this subject is to help students develop their oral skills in English. It aims at enhancing their English pronunciation, eloquence and communication skills. It also helps students increase their confidence in spoken English and raise their awareness of their own language learning strategies.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- use the International Phonetic Alphabet (IPA) and pronunciation rules to improve their accuracy in spoken English
- apply skills and strategies to communicate fluently in interpersonal, group, and public situations
- analyse the effectiveness of communication in interpersonal, group, and public situations
- increase their awareness and confidence in their ability to communicate orally in English

Indicative Contents

- **English Pronunciation**
International Phonetic Alphabet (the IPA system); Features of English consonant and vowel sounds; Pronunciation patterns; Syllables; Stress; Intonation; Linking.
- **Interpersonal Communication**
Communication and relationship development; Interpersonal communication in school life, social life, and business life.
- **Group Communication**
Problem-solving process; Teamwork skills.
- **Public Communication**
Organising presentation content; Improving delivery techniques; Types of delivery; Overcoming presentation fear.

Teaching/Learning Approach

The emphasis of lectures will be placed on acquiring knowledge and strategies to enhance students' communication skills in English. Through in-class activities and out-of-class assignments, students will build fluency and confidence in their oral English production. They will also be exposed to audio-visual recordings of interpersonal, group, and public communication, thus developing the ability to critique examples which will serve as another means for them to internalise the knowledge and techniques of the subject.

Some tutorials will be conducted in the language laboratory, where students will make use of audio-visual materials and the Internet to reinforce the accuracy of their spoken English.

Assessment Approach

Assessment tools will mostly be speaking tasks, including mini-presentations, quizzes, role plays, speeches and reflections to assess students' achievement of the subject intended learning outcomes as well as generic skills, including verbal and non-verbal communication skills in English.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Grant, L. (2010) *Well Said: Pronunciation for Clear Communication*, 3rd Ed., Heinle – Cengage Learning.

References

Anderson, K., Maclean, J. and Lynch, T. (2004) *Study Speaking: A Course in Spoken English for Academic Purposes*, 2nd Ed., Cambridge University Press.

Hancock, M. (2003) *English Pronunciation in Use*, Cambridge University Press.

Hybels, S. and Weaver II, R. L. (2011) *Communicating Effectively*, 10th Ed., McGraw-Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to introduce students the availability of various engineering materials and their characteristics. It gives students an understanding of the applications and selections of engineering materials based on the consideration of product design, properties, cost, and their in-service performance.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the fundamentals of materials science and engineering
- conduct simple engineering analysis of the relationships between material properties and their possible applications
- appraise the applications of advanced materials technology in their daily life
- apply relevant scientific and engineering knowledge to enhance their understanding of the impact of materials technology on society

Indicative Contents

- **Materials Availability and Selection**
Evolution of engineering materials; Materials in design; Engineering materials and their properties; Price and availability; Materials selection criteria.
- **Fundamentals of Materials**
Structure and phase diagrams; Methods of strengthening; Mechanical properties of engineering materials; Mechanical properties testing; Structure and properties relationship.
- **Design against Fracture and Degradation**
Ductile and brittle fracture; Stress intensity factor approach; Fatigue, creep, corrosion, and wear; Design against fracture and degradation; Examples of component failure in engineering.
- **Applications and Selection of Engineering Materials**
Ferrous and non-ferrous alloys; Commodity and engineering plastics; Engineering ceramics and composites; Sources of material property data; Performance indices (based on Ashby's analysis); Materials selection charts; Performance maximising criteria.
- **Advanced Materials and High Technology Products**

Composite materials; Nanotechnology; Biomaterials; Smart materials; Technological impacts of advanced materials on society.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of some concepts. Worksheets may also be used to guide students through the reasoning behind more complex theories.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. Activities in tutorials will normally include student presentations and discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and examination(s) designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills including critical thinking, analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Callister, W. D. and Rethwisch, D. G. (2010) *Materials Science and Engineering: An Introduction*, 8th Ed., John Wiley & Sons.

References

Ashby, M. and Johnson, K. (2010) *Materials and Design: The Art and Science of Material Selection in Product Design*, 2nd Ed., Butterworth-Heinemann.

Cresswell, L., Attwood, J., Goodier, A. and Lambert, B. (2004) *Product Design: Graphics with Materials Technology*, 2nd Ed., Heinemann.

Pradeep, T. (2008) *Nano: The Essentials: Understanding Nanoscience and Nanotechnology*, McGraw-Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject enables students to learn about the roles of professionals in real-life situations and their responsibilities towards the profession, colleagues, employers, clients and the public. It facilitates students to appreciate the historical context of modern technology and the nature of the process whereby technology develops. It also enables students to describe the social, political, and economic impact of technology on society. It helps students appreciate the effects of the development of technology relating to economy, legislation, people's livelihood, safety, health and environment and the implied social costs and benefits. In addition, it provides students information about professional conduct and the legal and moral constraints relating to professions.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe different types of intellectual property protection and to evaluate the impacts of modern technology on development in education, business, profession and the society
- identify the importance of professional conduct and responsibilities in various professional activities
- identify the effects on the development of technology relating to economy, legislation, people's livelihood, safety and health, environment and welfare of the public in real life cases
- interpret the academic, training and professional requirements of local and overseas professional institutions
- work responsibly, effectively and appropriately as an individual and as part of a group

Indicative Contents

- **Technology and Profession**
Impacts of technology on Society innovation and creativity; The history and trend of technology on the development of society and profession.
- **Industries**
The outlook of Hong Kong's industries; Its supporting organisations and impact on development from the China Market; Intellectual property rights, protection and the enforcement organisations; Basic Contract law for professionals.
- **Occupational Safety and Health**
Occupational safety and health including the work of the Labour Department and the Occupational Health and Safety Council; Legislation on occupational safety and health.

- **Environment**
Environmental protection and related issues; Roles of professionals in energy conservation, ecological balance and sustainable development.
- **Professionalism**
Local and overseas professional institutions and education systems; Qualification and criteria of professionals.
- **Legislation and Codes of Ethics**
Professional ethics and legislation; Bribery and corruption including the work of the Independent Commission Against Corruption (ICAC); Social responsibilities of professionals.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of essential knowledge and information on the relationship between society and professionals. Current issues and relevant topics may be used to stimulate students' interest or their awareness of the relationship in real-life cases. Some lectures may be delivered by guest speakers.

Tutorials will provide students with the opportunity to deepen their understanding on the relationship. Activities will normally include case studies, discussions, group projects, report writing, presentations or other activities for students to synthesise and apply the acquired knowledge, some of which may be acquired from relevant newspapers, magazines and journals.

Assessment Approach

A variety of assessment tools will be used, such as case studies, presentations, written reports, test(s) and an examination, to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Hjorth, L. S., Eichler, B. A., Khan, A. S. and Morello, J. A. (2003) *Technology and Society: A Bridge to the 21st Century*, 2nd Ed., Prentice Hall.

References

Harris, C. E., Pritchard, M. S. and Rabins, M. J. (2008) *Engineering Ethics: Concepts and Cases*, 4th Ed., Wadsworth Cengage Learning.

Herkert, J. R. (1999) *Social, Ethical and Policy Implications of Engineering: Selected Readings*, Wiley-IEEE Press.

Martin, M. W. and Schinzinger, R. (2005) *Ethics in Engineering*, 4th Ed., McGraw-Hill.

Winston, M. E. and Edelbach, R. D. (2012) *Society, Ethics and Technology*, 4th Ed., Wadsworth.

Parkin, M. (2012) *Economics*, 10th Ed., Pearson Education.

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject provides students with an overview of the general social development in China after 1949, and a basic understanding of the important issues involved. It guides students to consider some basic theories relevant to explaining social development in China and certain commonly-held views concerning China's development experience. It also guides students to begin examining the dilemmas and controversies in social development in China.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- outline an overview of the general social development in China after 1949
- identify important issues in the course of social development in China
- describe some basic theories to explain China's development experience
- analyse selected issues of social development in China
- identify the dilemmas and controversies in the contemporary social development of China

Indicative Contents

- **Development and Environment**
Modernisation; Economic reform; Rural industrialisation; Environment and sustainable development.
- **Employment and State Enterprise Reform**
Danwei; Privatisation; State enterprise reform; Changing employment structure; Unemployment; Social security.
- **Growing Social Inequality**
Social classes in transformation; Globalisation; Dualistic development; Rural poverty and rural unrest.
- **Population and Social Issues**
Population policy; Rural-urban population flow; Aging, Changing family structure; Gender equality; Democratisation.

Teaching/Learning Approach

Lectures will focus on explaining concepts and theories as well as outlining the key issues of social development in China. They will be delivered, whenever necessary, with the aid of audio-visual materials and actual research reports. In tutorials, students will be divided into small groups to conduct presentations of their seminar presentation projects on selected issues. Case studies will also be used in tutorial to discuss on dilemma and controversies faced by China in her course of social development.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports and term essays—all designed to develop and assess students' critical thinking as well as analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Reading

Recommended Textbooks

Mok, K. H. (2000) *Social and Political Development in Post-Reform China*, Macmillan Press.

林貢欽：《衝突 vs. 和諧：中國社會發展的困惑》，天地圖書有限公司，2009 年版。

References

Bray, D. (2005) *Social Space and Governance in Urban China: The Danwei System from Origins to Reform*, Stanford University Press.

MacPherson, S. and Wong, H. K. (Eds). (1998) *Social Development and Societies in Transition*, Ashgate.

Meisner, M. J. (1999) *Mao's China and After: A History of the People's Republic*, Free Press.

郭繼嚴主編：《中國社會發展藍皮書》，雲南人民出版社，1996 年版。

張德勝：《思入風雲：現代中國的思想發展與社會變遷》，巨流圖書公司，1997 年版。

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This is an interdisciplinary subject designed to introduce students to the history and culture of East Asia, in particular China, Korea and Japan. This subject also explores the similarities and differences between China, Korea and Japan in the contexts of their historical and cultural developments.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the historical and cultural divergences of different countries in East Asia
- appreciate the multiple perspectives with which people view East Asian historical and cultural developments
- analyse the complex interplay between the culture, society and history of an East Asian country
- demonstrate an ability of independent judgment on present-day East Asian cultural practices and social institutions
- apply different concepts and theories to the analysis of modern social and cultural issues in East Asia
- develop a lifelong interest in reading and studying East Asia

Indicative Contents

- **The Concept of East Asia**
The geographical and cultural definitions of East Asia; The needs for historical and cultural understandings; The Sinoshpere; A brief introduction of present-day China, Korea and Japan.
- **The Historical Development**
The relationship of China, Korea and Japan from the seventh to the tenth century A.D.; The kentōshi diplomatic envoys sent to China from Japan; Cultural exchanges between China, Korea and Japan prior to the nineteenth century A.D.; Reforms and wars in East Asia after the nineteenth century; The Second World War (1939-1945) in East Asia.
- **The Division of North and South Korea**
Colonisation of the Korean peninsula by the Japanese in the twentieth century; The Korean War (1950-1953); The politics and society of South and North Korea after the Korean War.
- **The Economic Development in Historical and Cultural Contexts**
The economic miracle in Japan; The “bubble burst” in Japan; The economic reform in China; The economic development in South Korea after the Korean War.

- **Women in East Asia**
The roles of women in ancient and modern East Asia; Gender in East Asia.
- **Traditional Culture in East Asia**
Traditional performing arts; Cultural heritage; Ancient philosophical ideas and religions; Historical architecture; Languages and culture.
- **Popular Culture in East Asia**
East Asian cinemas; Pop industries in Japan and Korea; The soft power of Japan, Korea and China; East Asian fashion.

Teaching/Learning Approach

An interactive approach will be adopted. Students will be required to actively participate in discussions and presentations. Audio and visual materials will also be used to enhance students' understanding of the teaching contents. Students will be divided into groups, and each group will present a topic on the history and/or culture of East Asia.

Assessment Approach

A variety of assessment tools will be used, including case studies, written reports, individual assignments, presentations, tests and an examination designed to assess critical thinking as well as analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

- Barnes, G. L. (1993) *China, Korea and Japan: The Rise of Civilisation in East Asia*, Thames & Hudson.
- Bowman, J. S. (2000) *Columbia Chronologies of Asian History and Culture*, Columbia University Press.
- Brødsgaard, K. (Ed.). (2001) *State Capacity in East Asia: China, Taiwan, Vietnam, and Japan*, An edition of the 1st Ed., Oxford University Press.
- Chang, S. J. (2006) *Financial Crisis and Transformation of Korean Business Groups: The Rise and Fall of the Chaebols*, Cambridge University Press.
- Chun, A., Rossiter N. and Shoesmith, B. (Eds.). (2004) *Refashioning Pop Music In Asia: Cosmopolitan Flows, Political Tempos, And Aesthetic Industries*, RoutledgeCurzon.

Clyde, P. H. and Beers, B. F. (1991) *The Far East: A History of Western Impacts and Eastern Responses, 1830-1975*, 6th Ed., Prentice-Hall.

Cummings, B. (2005) *Korea's Place in the Sun: A Modern History*, Updated Edition, Norton.

Fairbank, J. K., Reischauer, E. O. and Craig, A. M. (1989) *East Asia: Tradition and Transformation*, Revised Edition, Houghton Mifflin.

Hall, J. W. (1995) *Japan: From Prehistory To Modern Times*, Charles E. Tuttle Company.

Hsü, I. C. Y. (1999) *The Rise of Modern China*, 6th Ed., Oxford University Press.

Jackson, A., Gibb, M. and White, D. (Eds). (2006) *How East Asian Films Are Reshaping National Identities: Essays On The Cinemas Of China, Japan, South Korea, And Hong Kong*, Edwin Mellen Press.

Jansen, M. B. (2000) *The Making Of Modern Japan*, Belknap Press of Harvard University Press.

Murphey, R. (2009) *East Asia: A New History*, 5th Ed., Pearson Longman.

Penkala, M. (1970) *Correlated History of the Far East*, C. E. Tuttle.

Shin, D. M. (2003) *Social And Economic Policies In Korea: Ideas, Networks And Linkages*, RoutledgeCurzon.

Steinhardt, N. S. (1999) *Chinese Imperial City Planning*, University of Hawaii Press.

Steven, C. S. (2008) *Japanese Popular Music*, Routledge.

von Verschuer, C. "Japan's foreign relations 600-1200 A.D. A translation from *Zenrin Kokuhōki*." *Monumenta Nipponica* Vol. 54 No. 1:1-39.

董向榮：《南韓：創造奇蹟》，香港城市大學出版社，2009 年版。

梁英明：《近現代東亞文化》，北京大學出版社，1995 年版。

余定邦，喻常心編：《近現代中國與東亞關係史》，中山大學出版社，1999 年版。

張慧智、李敦球合著：《北韓：神秘的東方晨曦之國》，香港城市大學出版社，2008 年版。

張望：《軍國主義復活了嗎？》，星克爾出版有限公司，2006 年版。

Audio-visual materials

Discovery Channel (produced) (2008) *China Rises: A Documentary in Four Parts*, Discovery Channel.

National Geographic Channel (produced) (2007) *Inside North Korea*, National Geographic Video.

Television Broadcasts Limited (produced) (27 March, 1995) *Japanese Women*, Television Broadcasts Limited.

Williams, S. (dir.). (2007) *China: A century of revolution*, Zeitgeist Films Ltd.

電視廣播有限公司制作：《財經透視：日本經濟之從傳統走出來》，電視廣播有限公司，2004 年 10 月 24 日版。

香港電台制作：《鏗鏘集：韓國製造》，電視廣播有限公司，2002 年 9 月 30 日版。

香港電台制作：《鏗鏘集：戰後六十年一警號》，電視廣播有限公司，2005 年 8 月 8 日版。

唐健垣主講：《香港城市大學中國文化中心藝術講座一七弦古琴之美》，香港城市大學中國文化中心，1999 年 8 月 12 日版。

(<http://encore.lib.cityu.edu.hk/iii/encore/record/C%7CRb1865362%7CS%7COrightresult%7CX3?lang=eng&suite=pearl> 七 弦 古 琴)

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces students to the historical knowledge and analytical skills essential to understanding the evolvement of modern China. It familiarises students with key events and issues in China's history from the early 19th century to the present. It also provides students with a contextual framework for understanding major scholarly interpretations and debates. The subject also enhances students' generic skills such as critical thinking and effective presentation of ideas.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand key events and issues in the history of modern China
- cultivate a sensitivity to the complexity of historical narratives concerning modern China
- develop competence in presenting ideas in coherent and well-structured form
- apply relevant concepts and interpretations of history to modern Chinese society
- foster a lifelong interest in learning about China after the completion of the course

Indicative Contents

- **Introduction: Approaches to Understanding Chinese History**
Basic geographical and ethnic facts of China; Variety of historical perspectives.
- **The Coming of the West, Rebellions, and Reforms**
The tribute system and the treaty system; Cultural and economic clashes between China and the West; Reasons and impacts of the Opium War; The Taiping Rebellion; The Self-Strengthening Movement and its failure.
- **The Republican Revolution and the Warlord Era**
Late Qing reform; Sun Yat-sen and the 1911 Revolution; Limited success of the 1911 Revolution; Warlordism.
- **The May Fourth Movement and the Rise of the Chinese Communist Party**
Impact of Western cultures on Chinese intellectuals; Rise of modern Chinese nationalism; The early Chinese Communist Party and the rise of Mao Zedong.
- **The Sino-Japanese War and the Civil War**

Japanese aggression; The War of Resistance; Growth of the Communist Party during the war; The American interlude.

- **The People's Republic of China**

Establishment of a new order; The Great Leap Forward; The Cultural Revolution; Economic reform and its problems; the protests of 1989.

Teaching/Learning Approach

Lectures will introduce general historical background, important issues and major scholarly interpretations, supported by audio and video materials when appropriate. Discussions and activities may be arranged to stimulate students' interest in historical issues and the variety of historical narratives.

Tutorials will adopt an interactive approach to help students deepen their understanding and explore further the issues and concepts taught in lectures. Activities in tutorials will normally include discussions and student presentations.

Assessment Approach

A variety of assessment tools could be used, including assignments, presentations, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and delivery skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Hsü, I. C. Y. (2000) *The Rise of Modern China*, 6th Ed., Oxford University Press.
(徐中約：《中國近代史》上下冊，香港中文大學出版社，2001 年版。)

Vohra, R. (2000) *China's Path to Modernisation: A Historical Review From 1800 to the Present*, 3rd Ed., Prentice Hall.

References

Fairbank, J. K. and Goldman, M. (2006) *China: A New History*, 2nd Ed., Belknap Press.

Spence, J. (1999) *The Search for Modern China*, 2nd Ed., W.W. Norton.

陳永發：《中國共產革命七十年》，臺北：聯經出版事業公司，2001 年(修訂版)。

郭廷以：《近代中國史綱》，香港：香港中文大學出版社，1986 年(第 3 版)。

張玉法：《中國現代史》，東華書局，2001 年(增訂 9 版)。

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject is designed to familiarise students with a primary and systematic understanding of the basic differences and similarities between Chinese and Western cultures through the comparative study of selected themes such as religious, philosophical and ethical thinking. The study of cultural interaction is intended to help students acquire a broad range of cultural knowledge through which a deeper bicultural consciousness can be cultivated.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- identify the differences and similarities of Eastern and Western ways of thinking
- become more sensitive to different cultural novelties and distinctiveness
- analyse critically the strengths and weaknesses of the Eastern and Western thoughts
- adapt the interaction between the Chinese and Western cultures in society nowadays

Indicative Contents

- **The Conceptions and Definitions of Eastern and Western Cultures**
Concepts and definition of culture in Eastern and Western perspectives; Representations of the East and the West.
- **Language and Communication**
Language and the society; Accent and class; Tone and gender; Greetings and manners; The difference between verbal and body languages in the East and West.
- **Religious Belief**
The conception of heaven and hells in the different religions; The life and thoughts of Jesus and Buddha; The rise of different religions; The impact of religion in Hong Kong and the world.
- **Human Relationship**
The conception on relationship in the East and West; The difference between Eastern and Western conceptions on family relationship; The secret of having good and happy relationship in Eastern and Western cultures.
- **Gender and Sexuality**

The rise of feminism in modern western society; Ancient Chinese representations of Chinese womanhood; Different attitudes toward sex and gender; Sex education in the East and West; Cultural Relativism.

- **The Conceptions of Beauty**

The concepts of beauty in the East and West; The ancient and modern representations of beautiful figures; the western images of Eastern beauty; The Japanese influences on Hong Kong; Modern cultural meaning of 'Miss Universe'.

- **Childhood and Toy Culture**

History of Barbie doll; Barbie culture and the representation of American womanhood; The impact of American Barbie culture on China, Hong Kong and the world; The Gundam culture and the Japanese worldview.

- **Popular Cultures : TV culture and the Society**

The impact of Western popular cultures to the East; The interactive relationship of popular cultures between the East and the West; The interactive relationship between TV culture and cultural identities.

Teaching/Learning Approach

Lectures will focus on introduction of concepts and understanding the basic differences and similarities between Eastern and Western cultures through audio-visual materials. Students may occasionally be required to participate in fieldwork under the guidance of the lecturer.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. Students will be required to actively participate in discussion and presentation in order to help them to adapt the interaction between the Chinese and Western cultures in the real world.

Assessment Approach

A variety of assessment tools will be used, including presentations, projects, case studies, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Au, C. K., Chan, W. K. and Man, I. Wu, P.H. (2011) *The Perspectives of Eastern and Western Cultures*, 3rd Ed., McGraw Hill.

References

Geertz, C. (1993) *The Interpretation of Cultures: Selected Essays*, Fontana Press.

Li, S. L., Wong, W. C. and Chan, S. C. K. (1997) *Hong Kong Un-Imagined: History, Culture and the Future*, Rye Field.

Pun N and Yee L. M. (2003) *Narrating Hong Kong culture and identity*, Hong Kong University Press.

金耀基：《從傳統到現代》，時報文化，1992 年版。

閻江、肅妮妮：《中西方文化比較》，上海辭書出版社，2003 年版。

陳序經：《東西文化觀》，北京：中国人民大学出版社，2010 年版。

趙孝萱：《兩腳踏東西文化：林語堂相冊》，台北市：台北市政府文化局，2003 年版。

Level	2
Credits	3
Medium of Instruction	English and Chinese (Cantonese)
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject aims to help students recognise the ethical dimension in daily life. It provides an introduction to the key moral theories used in applied ethics, and considers how such theories help in making ethical judgments about the problems encountered in the above aspects. Furthermore, the course identifies a number of core values integral to the social organisation of modern society, analyses the schools of thoughts in support of these values, and reviews the debate among these schools of thoughts.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- develop a working knowledge of basic moral principles and theories, and the ability to identify moral disagreements in relation to common issues in applied ethics
- grasp the underlying values involved in the controversy of applied ethical issues
- identify the modern values integral to the organisation of modern society
- articulate the arguments in support of these values

Indicative Contents

- **Normative Ethical Theories**
Utilitarianism; Deontological Theory; Virtue Ethics.
- **Social Ethical Concepts and Theories**
Liberalism; Tyranny of the majority; Harm principle; Toleration; Paternalism; Egalitarianism; Social primary goods; Social contract; Communitarianism; Common Good; Libertarianism; Feminism; Socialism.
- **Values**
Liberty and Autonomy; Equality; Distributive Justice; Community; Rights; Democracy.
- **Applied Ethical Issues**
Abortion; Euthanasia; Sex and Marriage; Pornography and Censorship; Environment; Surrogate Mother; Minimum Wage; Drug Control, Media Ethics.

Teaching/Learning Approach

Lectures will introduce students to the major concepts and arguments related to the relevant topics. Various exercises will be designed to help students grasp the concepts, and assignments will be offered to stimulate them to reflect upon the core values of modern society.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of real-life moral controversies, such as abortion, government regulation of pornography and social security.

Assessment Approach

A variety of assessment tools, including presentations, case studies, written reports, test(s) and assignment(s), will be used to assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Swift, A. (2006) *Political Philosophy: A Beginners' Guide for Students and Politicians*, 2nd Ed., Polity.

楊國榮：《青紅皂白：從社會倫理到倫理社會》（修訂本），三聯書店(香港)有限公司，2008年。

References

Mappes, T. A. and Zembaty, J. S. (2007) *Social Ethics. Morality and Social Policy*, 7th Ed., McGraw-Hill.

Pojman, L. P. (1999) *Life and Death: Grappling with the Moral Dilemmas of Our Time*, 2nd Ed., Wadsworth Pub Co.

Rachels, J. and Rachels, S. (2009) *The Elements of Moral Philosophy*, 6th Ed., McGraw-Hill.

Wolff, J. (2006) *An Introduction to Political Philosophy*, Rev Ed., Oxford University Press.

羅秉祥：《生死男女－選擇你的價值取向》，突破出版社，1994年版。

羅秉祥：《自由社會的道德底線》，基道，1997年版。

李琪明：《倫理與生活：善惡的變與辨》，五南圖書出版股份有限公司，2003年版。

許志偉：《生命倫理：對當代生命科技的道德評估》，中國社會科學出版社，2006年版。

波伊曼著，江麗美譯：《生與死：現代道德困境的挑戰》，桂冠，1995 年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject equips students with foundation knowledge in computers, computer networks and data processing that is essential to modern information system development. It introduces the basic architecture of a computer system so that students can understand how a computer works from both hardware and software perspectives. It also covers the use of application software as well as computer programming related to real-life application.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- outline information technology and its application in different disciplines
- describe the functions and features of computer hardware and software components
- explain the principles of computer networks and data communications
- describe the basic structure of a database system and its application
- discuss the basic functions of a computer operating system
- develop end-user computing and problem-solving skills for use in real-life situation

Indicative Contents

- **Fundamentals of Information Technology**
Review of Internet basics; Multimedia; Introduction to computer hardware components: CPU, RAM, ROM, internal buses and I/O devices; Simple computer architecture; Basic logic operations; Data communications and security; Software components: application software, utilities and operating systems.
- **Computer Networks**
Introduction to computer networks; Client-server and peer-to-peer architectures; Network models; Network topologies; TCP/IP protocol; Networking devices: broadband modem, hub, bridge, switch and router.
- **Introduction to data processing and information systems**
Database system architecture; Relational database concept; Database management systems; Introduction to information systems.
- **Computer Programming Basics**
Programming approaches; Syntax; Compilation; Execution.

- **Application Software**
Word processing; Spreadsheet analysis; Graphical presentation; Database.
- **Operating System Basics**
Concept of operating system and its functionality; Shells concept.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of key concepts of applied computing, with specific reference to the latest issues of information technology wherever appropriate. Relevant daily-life cases and examples will be quoted wherever appropriate for in-class discussion to stimulate students' interests or their awareness of practical implications of some concepts.

Tutorials are organised for students to apply the concepts learnt in the lectures to real-life computer applications. Students are provided with the opportunity to gain hands-on experience of using different types of computer software and packages, as well as to work with the World Wide Web for specific mandates.

Assessment Approach

The assessment consists of group or individual assignments, test and examination covering the main topics taught. The assignments are strategically designed to develop the problem solving and analytical techniques of students to relate the learnt theories into application level.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Norton, P. (2006) *Peter Norton's introduction to computers*, 6th Ed., McGraw Hill.

References

Comer, D. E. (2004) *Computer networks and internets with Internet applications*, 4th Ed., Prentice-Hall.

Burd, S. D. (2011) *Systems architecture*, 6th Ed., Cengage Learning.

Englander, I. (2009) *The architecture of computer hardware and systems software: An information technology approach*, 4th Ed., Wiley.

Shelly, G. B., Cashman, T. J. & Vermaat, M. E. (2011) *Discovering computers 2011*, Cengage Learning.

Evans, J., Pinard, K. T. & Bunin, R. B. (2011) *Microsoft Office 2010: Introductory*, 1st Ed., Cengage Learning.

Deitel, H. M. & Deitel, P. J. (2007) *C How to program*, 5th Ed., Prentice Hall.

Lopo, E. D. C., Aitken, P. & Jones, B. L. (2000) *Teach yourself C for Linux Programming in 21 Days*, SAMS.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% Coursework 50% Examination

Aims

This subject aims to provide students with the practical skills of computer programming in the context of problem solving. It provides students with an understanding of the structure of a high-level programming language, such as C++, and of the design and analysis process of programming. It also provides students with some practical experiences of writing structured programs.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- Familiarise themselves with at least one high level language, such as C++, programming environment.
- Be proficient in using the basic constructs of high level language, such as C++, to develop a computer program.
- Be able to develop a structured and documented computer program.
- Understand the fundamentals of object-oriented programming and be able to apply it in computer program development.
- Be able to apply the computer programming techniques to solve practical problems in engineering and science environment.
- Be able to solve problems by using systematic approaches in a team.

Indicative Contents

- **Introduction to programming**
Components of a computer; Programming environment; Process of application development.
- **Fundamentals of a high level language, such as C++**
Preprocessor; Program code; Functions; Comments; Variables and constants; Expressions and statements; Operators.
- **Program Flow Control**
Conditional and looping statements; Function parameters passing; Return values; Scope of variables; Local and global variables.
- **Program Design and Debugging**
Structured program design; Modular programming.

- **Basic Object Oriented Programming**
Objects and classes; Private versus public; Implementing class methods; Constructors and destructors.
- **Pointer and Array**
Pointer arithmetic; Passing function arguments by pointer; Array and pointer; Array of pointers; Pointer to array; Character array.
- **Stream I/O**
Input and output as streams; Basic file I/O using streams.
- **Application of High Level Language**
Solving practical problems using a high level language, such as C++, for engineering and science applications.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Discussions and activities might be arranged to stimulate students' interests or their awareness of practical implications of some concepts.

Tutorials provide students with the opportunity to deepen their understanding and to explore further the applications of concepts and theories taught. In the tutorials, students will be required to design and develop software solutions to practical problems by applying the general principles learned in the lectures.

Assessment Approach

A variety of assessment tools will be used, including programming projects, tests and an examination designed to develop and assess skills of writing programs to solve practical problems and of writing documentation. Apart from meeting the learning outcomes, in programming projects, students have to practise solving problems using systematic approaches in a team.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Deitel, H.M. and Deitel, P.J. (2010). *C++ How to Program*. Prentice Hall. (7th ed.).

References

Charatan, Q. and Kans, A. (2009). *Java in Two Semesters*. McGraw-Hill. (3rd ed.).

Deitel, H.M. and Deitel, P.J. (2010). *C: How to Program*. Prentice Hall. (6th ed.).

Deitel, H.M. and Deitel, P.J. (2007). *Java How to Program*. Prentice Hall.(7th ed.).

Liang, Y. D. (2008). *Introduction to Java Programming*. Prentice-Hall.(7th ed.).

Liang, Y. D. (2010). *Introduction to Programming with C++*. Prentice-Hall. (2nd ed.).

Level	2
Credits	3
Medium of Instruction	English and Chinese (Spoken: Cantonese; Written: Chinese)
Prerequisites	Nil
Assessment	100% Coursework

Aims

The purpose of this subject is to help students to develop their expressive capabilities and relevant skills of storytelling in the digital era. The new form of storytelling uses digital technologies and sharing platforms to convey message, which is totally different from the conventional form. Along with the popularity of digital equipment, smartphones and software used by the general public, digital storytelling becomes an effective communication channel to make meaningful content and ideas in the areas of education, community, business, social, health and human services agencies, entertainment and personal or interpersonal expression.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- demonstrate an innovative way to solve communicative problems in a variety of disciplines
- acquire knowledge of a conceptual framework of digital storytelling on interdisciplinary relationships
- identify the applications of digital storytelling
- apply essential techniques in digital storytelling in terms of narrating, editing and sharing
- demonstrate digital storytelling as an effective communication channel

Indicative Contents

- **Genres in Digital Storytelling**
Various forms of digital storytelling; Micro-film; Viral video; Video art; Sound art; Animation; Documentary; TV commercials; Digital film.
- **Storytelling**
Methods of telling stories; Personal narrative; Character; Scene; Location; Timing; Dialogue; Monologue; Storyboard.
- **Creating a Digital Story**
Tools for telling digital stories; Digital images; Digital sound; Digital media.
- **Publishing of a Digital Story**
Interactive communication between the author and audience via different social networking platforms; Ethical considerations.

Teaching/Learning Approach

Students will be guided to express their ideas through the integration of still imagery, moving imagery, sound, and text which can never be achieved by the conventional modality. The extensive engagement of digital storytelling in the social networking platform is propitious for the enhancement of communication and interaction between the authors and audiences.

Lectures will focus on the foundation theory in digital storytelling. Works appreciation will be included in lectures. Students will have an overview of different genres in digital storytelling.

Workshops conducted in the laboratory/studio will focus on exploring a variety of digital communication tools. Students will learn to arrange a digital storytelling in the laboratory by using photos, sound and editing software, as well as a digital camera.

Tutorials will focus on analysing, generating and creating a digital storytelling work. Students will have a chance to discuss their works and generate different ways to create a digital storytelling work.

Assessment Approach

A variety of assessment tools will be used, including individual assignments/group projects, presentations, and/or quiz to assess students' understanding of basic concepts in digital storytelling, digital works, ability of telling stories by using digital media communication tools.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Alexander, B. (2011) *The New Digital Storytelling: Creating Narratives with New Media*, 1st Ed., Praeger.

Bordwell, D. (2008) *Film Art: An Introduction*, 8th Ed., McGraw Hill.

Brown, B. (2002) *Cinematography: Theory and Practice: Image Making for Cinematographers, Directors, and Videographers*, 1st Ed., Focal Press.

Hockrow, R. (2013) *Storytelling Techniques for Digital Filmmakers; Plot Structure, Camera Movement, Lens Selection, and More*, 1st Ed., Amherst Media.

Lambert, J. (2012) *Digital Storytelling: Capturing Lives, Creating Community*, 1st Ed., Routledge.

Straczynski, J. (2002) *The Complete Book of Scriptwriting*, 1st Ed., Writers Digest

吳昊、陳家樂：《編劇手冊》，香港：天地圖書，2011年版。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% Coursework

Aims

New Media is a cross-discipline subject integrated from computer science, visual arts, and literature, etc. It covers a wide range of forms from experimental film, video installation to programming art and web media. This subject aims at appreciating the trend of New Media from the point of view of Visual Arts, and to connect visual arts and science together by understanding the basic techniques of creating dynamic visual effects through the use of programming. Students are encouraged to visualise natural and innovative visual effects in digital format through using simple programming skills and fundamental scientific principles. This subject emphasises cross-media study with creative outputs. Thus programming effects will be furthermore integrated with other media like drawing and video for innovative representation. The taught effects are widely applicable to different art and design projects, like animation, web media, and interactive interface design.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- appreciate the background and current trend of New Media for lifelong learning
- distinguish different scientific principles for different visual effects
- develop simple programmes for information visualisation
- demonstrate creativity in integrating different media for innovative representation

Indicative Contents

- **Introduction to New Media**
History and representative art works in New Media.
- **Programming Basics to Visualise Data**
Basic concepts of programming; Decision branches; Looping; Coloring; 2D Array; Data processing; Animation output by programming.
- **Randomisation**
Simple use of Random number; Perlin noise; Random number with tendency; Application of randomisation.
- **Motion**
Basic concepts of algebra and trigonometry; Simple random motion; Motion with force.

- **Media Crossing**

Programming effects integrated with drawing; Programming effects integrated with video.

Teaching/Learning Approach

Lectures will focus on the introduction of New Media, the explanation of different scientific and programming concepts, and the applications of concepts on effect visualisation with relevant examples.

Tutorials will be conducted in laboratories. Under the supervision and guidance of the lecturer, students will have hands-on practice in programming to visualise scientific concepts, and have cross-media experiments to integrate programming effects with traditional media like drawing and video. Possible outputs can be still image, animation, or interactive interface. This will build up their competence in visualising concepts through media integration for creative purposes.

Assessment Approach

A variety of assessment tools will be used, including individual assignments/group projects, presentations, and/or quiz to assess students' understanding of scientific concepts, ability of visualising ideas by programming for creative purposes, and skills of visual communication.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Bohnacker, H., Gross, B., Laub, J., Lazzeroni, C. (2012) *Generative Design*, 1st Ed., Princeton Architectural Press.

Reas, C., Fry, B. (2007) *Processing: A Programming Handbook for Visual Designers and Artists*, 1st Ed., MIT Press.

Reas, C., Fry, B. (2010) *Getting Started with Processing*, 1st Ed., Maker Media, Inc.

Shiffman, D. (2008) *Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction*, 1st Ed., Morgan Kaufmann.

Shiffman, D. (2012) *The Nature of Code: Simulating Natural Systems with Processing*, 1st Ed., The Nature of Code.

Level	2
Credits	3
Medium of Instruction	English, supplemented with Cantonese
Prerequisites	Nil
Exclusions	CCN2259 Health Management for the Elderly People
Assessment	60% Coursework 40% Examination

Aims

This subject aims to provide students with an overview of healthy aging and wellness promotion of older adults in view of Hong Kong's local situation. Topics include physical, cognitive, psychological and behavioral factors in aging. Socio-economic and policy factors that support healthy aging will be examined. Wellness promotion strategies involving exercise/nutrition planning, development of healthy attitudes and management of personal security will be explored in a practical approach. Throughout the subject, emphasis is placed on normal and healthy aging. Students are expected to acquire basic knowledge and skills that are relevant to living and working with elderly persons in Hong Kong.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successful completion of this subject, students will be able to:

- communicate effectively with elderly people in daily context
- develop a positive attitude towards healthy aging
- demonstrate knowledge of the basic study of aging related to health, physiological, psychological, and social aspects that impact on older adults and those who work with and care for them
- acquire the basic skills in assessment of functional independence, psycho-social well-being of the elderly people
- identify wellness strategies that promote healthy aging in areas of physical wellness, personal development and security
- locate community resources, family and social support system, and professional or agency setting that serve the older population

Indicative Contents

- **Socio-economic Issues for the Older People in Hong Kong**
 - Current scenario of aging population in Hong Kong and its social impact.
 - Range of health and social services currently available and needed by senior citizens of Hong Kong.
- **Wellness Promotion**
 - Aging processes of various body systems; Wellness strategies that prevent disease and promote functioning in these body systems.
 - Sensory-perceptual alteration, cognitive changes and psychological health issues; Wellness strategies that promote coping and healthy aging.

- **Developing Healthy Attitudes**
 - Healthy attitudes to life; Strategies for coping with life transitions and end of life; Strategies for financial planning.
- **Nutrition and Exercise Planning**
 - Assessment of unique nutritional needs; Nutrition and exercise plans.
- **Home Life, Safety, and Personal Security**
 - Assessment of functional independence and psycho-social well-being; Home and personal security; Drug and food safety.

Teaching/Learning Approach

Lectures will be used to explain and demonstrate the topics introduced. Case studies, videos, discussions and interactive exercises will be used during tutorials to let students share experience and information. A field visit to geriatric care settings will be arranged for students to get a general knowledge of the different care models for older people. At the end of the field visit, a briefing session will be conducted to encourage learners to reflect on their classroom learning.

Assessment Approach

A variety of assessment tools will be used, which may include wellness portfolio, group project, presentation, field visit report, test and final examination. The aims are to assess students' level of awareness of the general health and social issues; ability to apply theory and assessment techniques that help them achieve the intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Haber, David. (2013) *Health Promotion and Aging: Practical Applications for Health Professionals*, 4th Ed., New York: Springer.

References

Ferrini, A. and Ferrini, R. (2012) *Health in Later Years*, 5th Ed., New York: McGraw-Hill.

Levkoff, Sue and Jeanne Wei (2001) *Aging Well: The Complete Guide to Physical and Emotional Health*, New York: Wiley.

McDonald, R. B. (2014) *Biology of Aging*, New York: Garland Science/Taylor & Francis Group.

Woo, J (2012) *Aging in Hong Kong: A Comparative Perspective*, New York: Springer.

陳燕禎：《銀髮照顧產業之發展：資源整合的觀點》*Development Trends of Elderly Care Industry: From the Perspective of Integration of Resources*，新北市：威仕曼文化事業股份有限公司，2012年版。

衛生署長者健康服務：《運動有方 活出健康》，香港：天地圖書有限公司，2012年版。

<http://www.info.gov.hk/elderly/chinese/foreword-c.htm>

Level	2
Credits	3
Medium of Instruction	English and Chinese (Written: Chinese; Spoken: Cantonese)
Prerequisites	Nil
Assessment	100% Coursework

Aims

This subject aims to explore the meanings and functions of music in the modern world. It enables students to develop basic knowledge of music, and to understand how music is related to culture, communication, psychology, human behaviour and mental health. It also provides students with a contextual framework for understanding related research.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- identify various meanings and functions of music in societies
- examine the multiple perspectives with which people view and understand music
- describe the interplay between music, mind and human behaviour
- apply concepts and theories to the analysis of the cultural and social implications of musical performances
- demonstrate a foundation knowledge base for further study of the meanings of music to culture and both the mental and behavioral aspects of human living

Indicative Contents

- **Basic Elements of Music**
Tone; Pitch; Rhythm; Timbre; Dynamic; Contour; Tempo; Spatial location; Reverberation; Melody; Meter; Harmony.
- **Music and Human Behaviour**
The concept of musical behaviour; Functions of classical (art) music; “Producers” and “consumers” of music.
- **Music and Mind**
Music cognition; Cognitive neuroscience of music; Music and the brain; Spatial-temporal reasoning; Early childhood exposure to classical (art) music; The Mozart Effect.
- **Music and Mental Health**
Mental therapy; Emotional and affective development; Biomusicology; Psychoacoustics.
- **Music, Culture and Society**
Gender and music; Musical anthropology; Ethnomusicology; Social studies and music.

Teaching/Learning Approach

Interactive approach is adopted: students are required to actively participate in discussions and presentations. Audio and visual materials are used to enhance students' understanding of the teaching contents. Lectures will be used to present information, concepts and theories of the subject whereas discussions and in-class assignments regarding the concepts and theories will be held in the tutorials. In the tutorials, students will be divided into groups, and they will deliver a comprehensive presentation with a selected topic using the concepts and theories taught and examined in the lectures.

Assessment Approach

Continuous assessment is adopted in this subject. A variety of assessment tools will be used, including case studies, written reports, individual assignments, test(s) and presentations designed to assess students' analytical skills on the cultural and social implications of music.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Blacking, J. (1995) *Music, Culture and Experience*, University of Chicago Press.

Campbell, D. (1997) *The Mozart Effect: Tapping the Power of Music to Heal the Body, Strengthen the Mind, and Unlock the Creative Spirit*, Avon Books.

Deliege, I. & Sloboda J. (1997) *Perception and Cognition of Music*, The Psychology Press.

Erlmann, V. (Ed.) (2004) *Hearing Cultures: Essays on Sound, Listening and Modernity*, Bloomsbury Academic.

Grout, D. J. et al. (2009) *A History of Western Music*, 8th Ed., W. W. Norton & Company.

Hodges, D. A. & Sebald, D. C. (2011) *Music in the Human Experience*, Routledge.

Levitin, D. J. (2006) *This is Your Brain on Music: The Science of a Human Obsession*, Dutton.

Patel, A. D. (2008) *Music, Language, and the Brain*, Oxford University Press.

Peretz, I. & Zatorre R. J. (2003) *The Cognitive Neuroscience of Music*, Oxford University Press.

Snyder, R. (2001) *Music and Memory: An Introduction*, MIT Press.

Wallin N. L. et al. (Ed.) (2001) *The Origins of Music*, New Edition, A Bradford Book.

Level	2
Credits	3
Medium of Instruction	English and Chinese (Spoken: Cantonese; Written: Chinese)
Prerequisites	Nil
Assessment	100% Coursework

Aims

This is an interdisciplinary subject that aims to help students to develop a critical understanding of cohesive relationship among society, culture and visual arts. The subject will look at the evolution of artistic tendencies in the 1970s with large social engagement and less skill-based practices. Hence, artworks can be interpreted as systematic reflections of society and societal behaviour through controversial subject matters and popular visual idioms in social realm. A diverse set of artists express their personal thoughts and insights towards our society by unconventional mediums and activities. In summary, this subject provides hands-on experience and an overview of the role of visual arts in the community and the impact those contemporary artists casted on contemporary existence.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students to achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- develop the understanding of the cohesive relationship between society and visual arts
- apply creative solution through arts practices
- demonstrate critical thinking ability through the employment of visual arts as a new channel of social communication
- develop lifelong learning towards cultural and aesthetic values

Indicative Contents

- **Introduction to Sociological Perspective on Art**
The relationship between society and visual arts; Comparison of social functions and uses of the arts over time; The conceptual framework and development of sociological art.
- **Visual Arts in Sociological Paradigm**
Art as propaganda; Gender; Consumption in art; Popular culture and mass media.
- **Art Practices as a New Channel of Social Communication**
Public art and artistic events in public space; Collaboration works of community art; Art participation in social networking platform; Explore and use popular visual idioms in art practice creatively; Cases in Hong Kong, Taiwan and Mainland China.

Teaching/Learning Approach

The subject will go through key social themes adopted by contemporary artists; students will be guided to develop creative art practices towards their social concerns after lectures and critical discussions.

Using an interactive approach, this subject will be taught by means of lectures, field visits, tutorials, workshops, seminars and presentations.

Lectures introduce and explain the basic concepts and the subject matters of visual arts in sociological paradigm.

Seminars and classroom discussions broaden students' interpretative opinion on selected social themes adopted by contemporary artists.

Workshops lead students to produce meaning-making artworks. Students are expected to participate actively in class by leading discussions on their research findings and doing presentations.

Tutorials provide students with the opportunity to deepen their understanding of the subject and to explore further the applications of ideas taught.

Assessment Approach

A variety of assessment tools will be used, including presentations, written reports, quiz, artworks creation and portfolio designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including creative and critical thinking, analytical and communication skills. Students will be assessed by their ability to synthesise a broad range of information with critical arguments.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Arnold W. Foster and Judith R. Blau, (1989) *Art and Society – Readings in the Sociology of the Arts*, 1st Ed., State University of New York Press.

Kristine Stiles and Peter Selz, (2012) *Theories and Documents of Contemporary Art: A Sourcebook of Artists' Writings*, 2nd Ed., University of California Press.

Thomas Crow (2005) *The Rise of the Sixties: American and European Art in the Era of Dissent*, 1st Ed., Yale University Press.

Toby Clark (1997) *Art and Propaganda in the Twentieth Century – The Political Image in the Age of Mass Culture*, 1st Ed., Harry N. Abrams, Inc.

Victoria Alexander, (2003) *Sociology of the Arts - Exploring Fine and Popular Forms*, 1st Ed., Wiley-Blackwell.

陳秉璋、陳信木：《藝術社會學》，台北：巨流圖書公司，1993 年版。

The Hong Kong Polytechnic University
Hong Kong Community College

Subject Description Form

Subject Code	CCN2048
Subject Title	The History and Culture of Modern China
Level	2
Credit Value	3
Medium of Instruction	English and Chinese (Cantonese)
Pre-requisite / Co-requisite/ Exclusion	Exclusion CCN2033 The History of Modern China
Objectives	This subject examines major social, political, and cultural changes in China from the early 19 th century to the mid-20 th century. It explores the genesis, developments and impacts of key historical issues such as the crises and reforms in the late Qing dynasty, the Western intrusion which triggered a critical re-examination of China's traditional culture, the ideological awakening during the May Fourth Movement, the struggles between the Guomindang and the Chinese Communist Party, the radicalism in the early years of the People's Republic of China, etc. It also introduces some of the leading scholarly interpretations and debates concerning modern China.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: (a) describe major socio-political-cultural changes in modern Chinese history. (b) explain some key conceptual tools for understanding modern China, such as reform, revolution, imperialism, nationalism, etc. (c) evaluate the comparative strengths and weaknesses of Chinese and Western cultures and their interactions. (d) apply relevant knowledge and concepts to explain contemporary Chinese issues such as the strong force of Chinese nationalism.
Subject Synopsis/ Indicative Syllabus	Crises and reforms in late Qing The Opium War; the Taiping Rebellion; the Self-strengthening Movement; the Hundred Days Reform; the Boxer Uprising. The Republic and the warlord era Sun Yat-sen and Three Principles of the People; the 1911 Revolution; Yuan Shikai's revival of the monarchy; warlordism.

	Ideological awakening The May Fourth Movement; democracy and science; rise of Chinese nationalism; birth of the Chinese Communist Party. The War of Resistance Japanese aggression; Wang Jingwei's peace movement; the GMD-CCP alliance; the American interlude. The Civil War and the Communist victory Role of the U.S.; causes of the Nationalist defeat. Early years of the PRC The Anti-Rightist Campaign; the Great Leap Forward; the Cultural Revolution.																																																								
Teaching/Learning Methodology	Lectures will introduce the theoretical framework, historical backgrounds and major issues involved to help students master the subject's content. Tutorials will conduct in-depth discussions on selected topics. Students in groups will be required to give oral presentations to further explore the topics they are interested in. An individual paper will prompt students to conduct in-depth research while sharpening their critical thinking and writing skills.																																																								
Assessment Methods in Alignment with Intended Learning Outcomes	A variety of assessment tools will be used to develop and assess students' achievement of the subject intended learning outcomes. <table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="4">Intended subject learning outcomes to be assessed</th></tr> <tr> <th>a</th><th>b</th><th>c</th><th>d</th></tr> </thead> <tbody> <tr> <td>Continuous Assessment*</td><td>50</td><td colspan="4"></td></tr> <tr> <td>▪ Test</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr> <tr> <td>▪ Group Presentation</td><td>15</td><td></td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>▪ Individual Paper</td><td>15</td><td></td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>▪ Class Participation</td><td>5</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>Final Examination</td><td>50</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr> <tr> <td>Total</td><td>100</td><td colspan="4"></td></tr> </tbody> </table> <i>*Continuous assessment items and/or weighting may be adjusted by the subject team subject to the approval of the College Programme Committee.</i> To pass this subject, students are required to obtain Grade D or above in both the Continuous Assessment and Final Examination.					Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				a	b	c	d	Continuous Assessment*	50					▪ Test	15	✓	✓	✓		▪ Group Presentation	15		✓	✓	✓	▪ Individual Paper	15		✓	✓	✓	▪ Class Participation	5	✓	✓	✓	✓	Final Examination	50	✓	✓	✓		Total	100				
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Student Study Effort Expected	Class contact			Hours																																																					
	▪ Lecture			26																																																					

	▪ Tutorial	13
	Other student study effort	
	▪ Self-study	48
	▪ Continuous Assessment	45
	Total student study effort	132
Reading List and References	Recommended Textbook Hsü, Immanuel C.Y. (2000). <i>The Rise of Modern China</i>. (6th ed.), New York: Oxford University Press. (中文版) 徐中約著，計秋楓、朱慶葆譯：《中國近代史》上冊，香港：中文大學出版社，2001 年。 徐中約著，計秋楓、鄭會欣譯：《中國近代史》下冊，香港：中文大學出版社，2002 年。 References Chow, Tse-tsung (1963). <i>The May Fourth Movement: Intellectual Revolution in Modern China, 1915-1924</i>. Cambridge, Mass.: Harvard University Press. Fairbank, J. K. & Goldman, M. (2006). <i>China: A New History</i>. (2nd ed.), Cambridge, Mass.: Belknap Press of Harvard University Press. Meisner, Maurice (1999). <i>Mao's China and After: A History of the People's Republic</i>. (3rd ed.), New York: Free Press. Spence, Jonathan D. (1999). <i>The Search for Modern China</i>. (2nd ed.), New York: W.W. Norton. 林蘊暉、沈志華、錢庠理、卜偉華、史雲、李丹慧、蕭冬連：《中華人民共和國史》(七卷)，香港：中文大學當代中國文化研究中心，2008 年 - 2009 年。 陳永發：《中國共產革命七十年》，台北：聯經出版事業公司，2001 年 (修訂版)。 郭廷以：《近代中國史綱》，香港：中文大學出版社，1986 年 (第 3 版)。 張玉法：《中華民國史稿》，台北：聯經出版事業公司，1998 年。	

**The Hong Kong Polytechnic University
Hong Kong Community College**

Subject Description Form

Subject Code	CCN2049
Subject Title	Chinese and Western Cultures
Level	2
Credit Value	3
Medium of Instruction	English and Chinese (Cantonese)
Pre-requisite / Co-requisite/ Exclusion	Exclusion CCN2034 The Perspectives of Eastern and Western Cultures
Objectives	Through the study of Chinese and Western perspectives of culture such as religion, philosophical thoughts, popular culture and ethical thinking, the subject aims to familiarize students with a major and systematic understanding of the basic differences and similarities between the two. In addition, students will acquire a broad range of cultural knowledge through which a deeper bicultural consciousness can be cultivated, and adapt the interaction between the Chinese and Western cultures as well as becoming more culturally sensitive in society nowadays.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: (a) identify aspects of Chinese and Western cultures. (b) demonstrate the differences and similarities of Chinese and Western ways of thinking. (c) recognise culturally sensitive elements when dealing with people of different cultural backgrounds. (d) explain the interaction and hybridity between the Chinese and Western cultures in the world.
Subject Synopsis/ Indicative Syllabus	The Concept of Culture The ambiguity of culture; The definitions; Culture and civilisation; Basic theories in cultural studies; Cultural studies across disciplines. The Basic Characteristics of and Conceptions in Chinese and Western Cultures The forming and content of Chinese and Western cultures; The interaction taking place between the two cultures. Religions

	The lives and thoughts of the founders of major Chinese and Western religions; The development of medieval theologies of different religions; The influences of different religions in societies. Language and Communication Language and culture; The pragmatics in Chinese and Western cultures; The differences between verbal and body languages in China and the West. Human Relationship The conception on relationship in China and the West; The difference between Chinese and Western conceptions on family; Gender and sexuality; Impacts of modernisation on family structures in China and the West. Mutual Impressions The changes in the Chinese attitudes towards foreign cultures in the “classical”, “medieval”, and the “modern” era; The impression of Westerners in Chinese popular culture; The impression of Chinese in Western popular culture.																																														
Teaching/Learning Methodology	Lectures will focus on introduction of concepts and understanding of the basic differences and similarities between Chinese and Western cultures through multi-media resources, cinematic materials, and literary examples. Students may occasionally be required to participate in fieldwork under the guidance of the lecturer. Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. Students will be required to actively participate in discussions and presentations in order to help them to adapt the interaction between the Chinese and Western cultures in the real world.																																														
Assessment Methods in Alignment with Intended Learning Outcomes	A variety of assessment tools will be used to develop and assess students’ achievement of the subject intended learning outcomes. <table><tr><th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="4">Intended subject learning outcomes to be assessed</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>Continuous Assessment*</td><td>50</td><td colspan="4"></td></tr><tr><td>▪ Individual Assignment</td><td>15</td><td>✓</td><td>✓</td><td></td><td>✓</td></tr><tr><td>▪ Group Project</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Test</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr><tr><td>▪ Participation</td><td>5</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Final Examination</td><td>50</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr></table>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				a	b	c	d	Continuous Assessment*	50					▪ Individual Assignment	15	✓	✓		✓	▪ Group Project	15	✓	✓	✓	✓	▪ Test	15	✓	✓	✓		▪ Participation	5	✓	✓	✓	✓	Final Examination	50	✓	✓	✓	✓
Specific assessment methods/tasks	% weighting			Intended subject learning outcomes to be assessed																																											
		a	b	c	d																																										
Continuous Assessment*	50																																														
▪ Individual Assignment	15	✓	✓		✓																																										
▪ Group Project	15	✓	✓	✓	✓																																										
▪ Test	15	✓	✓	✓																																											
▪ Participation	5	✓	✓	✓	✓																																										
Final Examination	50	✓	✓	✓	✓																																										

	<table><tr><td>Total</td><td>100</td></tr></table> <i>*Continuous assessment items and/or weighting may be adjusted by the subject team subject to the approval of the College Programme Committee.</i> To pass this subject, students are required to obtain Grade D or above in <u>both</u> the Continuous Assessment and Final Examination.	Total	100												
Total	100														
Student Study Effort Expected	<table><tr><td>Class contact</td><td>Hours</td></tr><tr><td>▪ Lecture</td><td>26</td></tr><tr><td>▪ Tutorial</td><td>13</td></tr><tr><td>Other student study effort</td><td></td></tr><tr><td>▪ Self-study</td><td>52</td></tr><tr><td>▪ Continuous Assessment</td><td>39</td></tr><tr><td>Total student study effort</td><td>130</td></tr></table>	Class contact	Hours	▪ Lecture	26	▪ Tutorial	13	Other student study effort		▪ Self-study	52	▪ Continuous Assessment	39	Total student study effort	130
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	Other student study effort														
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	▪ Continuous Assessment	39													
Total student study effort	130														
Reading List and References	References Berry, Chris (1991). <i>Perspectives on Chinese Cinema</i>. British Film Institute. Chow, Rey (1991). <i>Woman and Chinese Modernity: The Politics of Reading Between East and West</i>. Minneapolis: University of Minnesota Press. Duiker, W. & Spielvogel, J.J. (2004). <i>World History</i>. Singapore: Thomson. <i>Edward Said on Orientalism</i> [videorecording] (2002). Media Education Foundation; executive producer & director, Sut Jhally; producer & editor Sanjay Talreja. Northampton, MA: Media Education Foundation Luce, J. V. (1992). <i>An Introduction to Greek Philosophy</i>. London: Thames and Hudson. Norman E. B. & Simon, R. L. (1998). <i>The Individual and Political Order</i>. Rowman & Littlefield. Stevenson, L & Haberman, D. (2004). <i>Ten Theories of Human Nature</i>. New York; Oxford: Oxford University Press. Strinati, D. (2000). <i>An Introduction to Theories of Popular Culture</i>. London and New York: Routledge. Tarnas, Richard (1996). <i>The Passion of the Western Mind: Understanding the Ideas that have Shaped our World View</i>. London, Sydney: Pimlico. Wang, Hui (2014). <i>China From Empire to Nation-State</i>. Translated by														

	Michael Gibbs Hill, Cambridge, Mass.: Harvard University Press. Zhang, Longxi (1992). <i>The Tao and the Logos: Literary Hermeneutics, East and West</i>. Durham: Duke University Press. 王曾才：《西方文化要義》，臺北：五南圖書，2003 年。 弗里德里希·希爾(Friedrich Heer)著；趙復三譯：《歐洲思想史》，香港：中文大學出版社，2003 年。 余英時：《士與中國文化》，上海：上海人民出版社，2013 年。 李新柳：《東西方文化比較導論》，北京：高等教育出版社，2005 年。 唐君毅：《中國文化之精神價值》，臺北：正中書局，2000 年。 梁漱溟：《東西文化及其哲學》，北京：商務，1987 年。 梁漱溟：《中國文化要義》，香港：三聯書店(香港)有限公司，1989 年。 理查·塔那斯(Richard Tarnas)著；王又如譯：《西方心靈的激情》，臺北：正中書局，1995 年。 勞思光：《新編中國哲學史》，臺北：三民書局，2004 年。 勞思光著；梁美儀編：《中國文化要義新編》，香港：中文大學出版社，1998 年。 楊伯峻：《論語譯注》，香港：中華書局，1984 年。 閻江，肅妮妮：《中西方文化比較》，上海：上海辭書出版社，2003 年。 錢穆：《從中國歷史來看中國民族性及中國文化》，香港：中文大學出版社，1979 年。

**The Hong Kong Polytechnic University
Hong Kong Community College**

Subject Description Form

Subject Code	CCN2050
Subject Title	Creativity and Everyday Life
Level	2
Credit Value	3
Medium of Instruction	English, supplemented with Chinese (Cantonese)
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	This subject aims to stimulate students to behave creatively in everyday life. It provides students with the knowledge of the nature of creativity, introduces techniques for generating new ideas and enables students to explore creative solutions for everyday scenarios. This subject develops students' creative habits of mind through sharpening perception, encouraging reflection and experiencing alternative possibilities.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: (e) explain the basic concepts and theories of creativity. (f) apply creative thinking skills to overcome creative blocks. (g) define and solve problems with a creative mindset. (h) generate feasible creative ideas for everyday scenarios.
Subject Synopsis/ Indicative Syllabus	The Nature of Creativity Mechanism of the mind; Concepts of creativity such as geniuses' creativity vs everyday creativity; Levels of creativity; Measuring creativity. Creative Mindset Attitude; Personality; Habits of mind; Roles of perception and reflection. Creative Thinking Techniques Identifying and mapping attributes; Making possibilities; Changing and shifting perspectives; Making association and analogy thinking; Probing emotion and the subconscious. Conceptual Blockbusting Overcoming perceptual, emotional, cultural, environmental and

	intellectual blocks. Creativity in Everyday Life Small ‘c’ creativity; Group creativity; Cross-disciplinary creativity.																																														
Teaching/Learning Methodology	Students will be expected to engage actively in the learning process. Lectures and class exercises will be closely integrated together to facilitate the learning of both declarative and procedural knowledge in the subject. Students will be guided to practise creative thinking and explore its applications in daily life. Lectures introduce the basic concepts of creativity and case studies will be presented to illustrate applied creativity in everyday life. Tutorials will provide students with the opportunities to deepen their understanding of the subject and to explore further the application of theories and methods. Course assignments will allow students to actively reflect upon their creative thinking process and demonstrate their own everyday creative ideas. Group exercises provide opportunities for collaboration and mutual stimulation. Each group has to consolidate their learning through a written summative report and a presentation of key ideas. Students will also be guided through an individual creative project. Besides submission of documentation, they have to present the project outcome in class. Students will gain feedback from peers and the lecturer in both tutorials and presentations.																																														
Assessment Methods in Alignment with Intended Learning Outcomes	A variety of assessment tools will be used to develop and assess students’ achievement of the subject intended learning outcomes. <table><tr><th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="4">Intended subject learning outcomes to be assessed</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>Continuous Assessment*</td><td>100</td><td colspan="4"></td></tr><tr><td>▪ Exercises (Group)</td><td>25</td><td></td><td>✓</td><td></td><td></td></tr><tr><td>▪ Test</td><td>20</td><td>✓</td><td></td><td></td><td></td></tr><tr><td>▪ Project (individual)</td><td>30</td><td></td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Reflective Journal (individual)</td><td>25</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>Total</td><td>100</td><td colspan="4"></td></tr></table> <i>*Continuous assessment items and/or weighting may be adjusted by the subject team subject to the approval of the College Programme Committee.</i> To pass this subject, students are required to obtain Grade D or above in the Continuous Assessment.	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				a	b	c	d	Continuous Assessment*	100					▪ Exercises (Group)	25		✓			▪ Test	20	✓				▪ Project (individual)	30		✓	✓	✓	▪ Reflective Journal (individual)	25	✓		✓	✓	Total	100				
Specific assessment methods/tasks	% weighting			Intended subject learning outcomes to be assessed																																											
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▪ Project (individual)	30		✓	✓	✓																																										
▪ Reflective Journal (individual)	25	✓		✓	✓																																										
Total	100																																														

Student Study Effort Expected	Class contact	Hours
	▪ Lecture	13
	▪ Tutorial	26
	Other student study effort	
	▪ Self-study	36
	▪ Continuous Assessment	50
	Total student study effort	125
Reading List and References	Recommended Textbook Nil References Adams, J.L. (2001). <i>Conceptual Blockbusting: A Guide to Better Ideas</i>. Massachusetts: Perseus Publishing. De Bono, E. (1970). <i>Lateral Thinking</i>. UK: Penguin Books. De Bono, E. (1997). <i>How To Be More Interesting</i>. UK: Penguin Books. Siu, K. C. (2012). <i>Lesser Design</i>. Hong Kong: MCCM Creations. Sawyer, R.K. (2012). <i>Explaining Creativity: The Science of Human Innovation</i>. (2nd ed.), New York: Oxford University Press. Tschimmel, K. (2009). Past for the future: The evolution of the concept of creativity. In <i>Proceedings of the 5th International Conference of UNIDCOM/IADE “40IADE”</i>, Ed. IADE Creative University, UNIDCOM, Lisboa, pp. 273-279. Young, J. W. (2003). <i>A Technique for Producing Ideas</i>. London: McGraw-Hill. 李欣頻：《十四堂人生創意課 01：如何畫一張自己的生命藍圖》，暖暖書房，2014 年版。	

**The Hong Kong Polytechnic University
Hong Kong Community College**

Subject Description Form

Subject Code	CCN2051
Subject Title	Positive Psychology in Daily Life
Level	2
Credit Value	3
Medium of Instruction	English, supplemented with Chinese (Cantonese)
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	To introduce the fundamental knowledge of positive psychology, this subject familiarises students with concepts and research findings in the field, such as happiness, character strengths, gratitude and forgiveness. To develop the application skills in daily life, this subject stimulates students to connect their knowledge into real world settings for enhancing psychological well-being from individual to institutional levels. To foster positive values of living, this subject provides opportunities for students to appreciate different ways of making life more meaningful and flourishing.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: (a) explain the basic concepts, theories and related research findings of positive psychology. (b) identify the effective practices for promoting psychological well-being and character development. (c) examine the psychological and cultural factors, particularly in the local context, contributing to human well-being.
Subject Synopsis/ Indicative Syllabus	Evolution of Positive Psychology Historical background of positive psychology; Basic concepts of psychological research. Positive Individuals Positive emotions and well-being; Character strengths and virtues; Flow and mindfulness. Positive Relationships Gratitude; Forgiveness; Religion and spirituality.

	Positive Institutions Applications in family, school, workplace and society; Meanings of happiness across cultures.				
Teaching/Learning Methodology	Theories and concepts will be explained in lectures with the aid of real life examples, current affairs, movies, and other appropriate sources. Students are also expected to participate in various interesting and interactive class activities to develop a better understanding of aspects of their psychological well-being and character development. Class exercises and guided discussions will be used in tutorials to help students consolidate the concepts and theories learned. Experiential learning activities, problem-based learning tasks and group presentations will also be conducted so as to enhance students’ awareness of applying the knowledge into their real life settings in appreciation of the positive values of living.				
Assessment Methods in Alignment with Intended Learning Outcomes	A variety of assessment tools will be used to develop and assess students’ achievement of the subject intended learning outcomes.				
	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed		
			a	b	c
	Continuous Assessment*	100			
	▪ Test	25	✓	✓	
	▪ Individual Assignment 1	25	✓	✓	
	▪ Individual Assignment 2	10			✓
	▪ Group Assignment	30	✓	✓	✓
	▪ Participation	10	✓	✓	✓
	Total	100			
<i>*Continuous assessment items and/or weighting may be adjusted by the subject team subject to the approval of the College Programme Committee.</i> To pass this subject, students are required to obtain Grade D or above in the Continuous Assessment.					
Student Study Effort Expected	Class contact			Hours	
	▪ Lecture			26	
	▪ Tutorial			13	
	Other student study effort				
	▪ Self-study			46	
	▪ Continuous Assessment			45	
	Total student study effort			130	

Reading List and References	Recommended Textbook Baumgardner, S. R., & Crothers, M. K. (2010). <i>Positive Psychology (International ed.)</i>, Upper Saddle River: Pearson Education. References Compton, W. C., & Hoffman, E. (2013). <i>Positive Psychology: The Science of Happiness and Flourishing (2nd ed.)</i>, Belmont, CA: Wadsworth Cengage Learning. Hefferon, K., & Boniwell, I. (2011). <i>Positive Psychology: Theory, Research and Applications</i>. England: McGraw-Hill Education, Open University Press. MacConville, R., & Rae, T. (2012). <i>Building Happiness, Resilience and Motivation in Adolescents: A Positive Psychology Curriculum for Well-being</i>. London: Jessica Kingsley Publishers. Peng, K., Chen S., & Sun, L. (Eds). (2013). <i>Positive Psychology in China (1st ed.)</i>, Singapore: Cengage Learning Asia. Seligman, M. E. P. (2011). <i>Flourish: A Visionary New Understanding of Happiness and Well-being</i>. New York: Free Press. 江雪齡著：《正向心理學 — 生活、工作和教學的實用》，台北市：心理出版社股份有限公司，2008 年。 區祥江：《快樂軌跡 — 10 個正向心理學的生活智慧》，香港：突破出版社，2013 年。 劉遠章、陶兆輝：《快樂選擇我 — 快樂心智學》，香港：明窗出版社有限公司，2013 年。

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusion	CCN1041 Accounting for Non-Business Students
Assessment	40% coursework 60% examination

Aims

This subject introduces the basic concepts of financial accounting. It enables students to apply fundamental financial theories, analyse financial statements and reports, and prepare basic financial statements. This subject also helps students develop critical thinking and analytical skills for their life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the assumptions, principles and conventions in the financial accounting process
- appreciate the role and importance of accounting information in assisting decision-making in a business context
- undertake the work involved in the recording, processing, summarising and reporting phases of the accounting cycle
- apply relevant accounting concepts and principles in the preparation of financial statements
- apply fundamental analytical tools for the interpretation of financial statements

Indicative Contents

- **Role and Principles of Financial Accounting and Reporting**
Nature, principles and scope of financial accounting; Management accounting, Financial management and auditing; Users of financial accounts and statements; Accounting Standards; Application of information technology in processing financial and related information; Ethical consideration in Financial Reporting.
- **Financial Accounting Framework**
Double-entry bookkeeping and accounting systems; Methods of classifying expenditure between capital and revenue; Accounting treatment of fixed assets, current assets, liabilities, provisions and reserves, and capital; Control accounts, bank reconciliation, suspense accounts, and correction of errors; Preparation of journal, ledger accounts, trial balance and basic financial statements.
- **Additional Issues on Earnings**
Extraordinary items; Accounting changes; Earnings per share; Cash and stock dividends.

- **Preparation of Financial Statements**

Preparation of Financial Statements for sole-traders, clubs or societies, partnerships, and limited companies.

- **Analysis and Interpretation of Financial Statements**

Need for analysis and interpretation of financial statements; Interpretation techniques including ratio analysis and cash flow statement; Calculation and interpretation of basic financial ratios.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key concepts and theories supported by real examples wherever appropriate. They will also provide further analysis of topics with particular emphasis on practical examples.

Tutorials will provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply theories to the analysis of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including individual assignments, in-class exercises, tests and an examination designed to develop and assess students' analytical and quantitative skills in solving accounting problems.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Williams, Haka, Bettner, Carcello, Lam and Lau (2010) *Financial accounting: Including international financial reporting standards (IFRS)*, 14th Ed., McGraw Hill.

References

Ferrell, Fraedrich and Ferrell (2010) *Ethical decision making for business*, 8th Ed., International Edition, Cengage Learning.

Hong Kong Institute of Certified Accountants (HKICPA) *Hong Kong financial reporting standards and Hong Kong accounting standards*.
(Available at the HKICPA website: <http://www.hkicpa.org.hk/index.php>)

Horngren, C. T., Harrison, W. T. and Bamber, L. S. (2009) *Accounting*, 8th Ed., Prentice Hall.

Libby, Libby and Short (2009) *Financial accounting*, International Edition, 6th Ed., McGraw-Hill.

Weygandt, J. J., Kieso, D. E. and Kimmel, P. D. (2010) *Financial accounting*, IFRS Edition, 7th Ed., Wiley.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN1017 Introduction to Psychology
Assessment	50% coursework 50% examination

Aims

The subject is designed to familiarise students with the principles of biological psychology and the fundamentals of the relationships between behaviour and brain function. It provides both basic theoretical and practical details from neuronal mechanisms to brain functions, with exploration on different models of behaviour and cognitive functioning. Studying this subject is important for one to understand functions of the brain and the nervous system, so as to explain numerous phenomena of behaviour.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the biological structures of the nervous system and how it regulates behaviour
- explain psychological phenomena including visual perception, reproductive behaviour, emotions, degree of consciousness and psychological disorders with the understanding of human physiology
- evaluate research methodologies used in understanding brain-behaviour relationship

Indicative Contents

- **Neurophysiology and Development of the Brain**
Structures and functions of neurons; Central nervous system; Peripheral nervous system; Impulse and action potential; Synapse and synaptic transmission; Development of the brain; Organisation of the cerebral cortex; Lateralisation of hemispheres.
- **Sensory Perception and Movement**
Visual perception; Auditory perception; Taste and olfaction perception; Somatosensory system; Control of movement; Reflex.
- **Biological Regulation of Behaviour**
Wakefulness and arousal; Four stages of sleep; Theories of sleep and dreaming; Physiological basis of sleeping disorders; Homeostasis; Reproductive behaviour; Emotion; Biology of learning and memory; Stress and health.
- **Brain Damage and other Psychological Disorders**
Pathophysiology on psychological disorders: autism, schizophrenia, Parkinson's disease, depression, Huntington's disease, bipolar disorder.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples, wherever appropriate. Group discussions and activities will be arranged to stimulate students' interest and their awareness of practical implications of the learned concepts. Worksheets will also be used to guide students through the reasoning behind some complicated biological mechanisms.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further applications of the learned theories. The activities in tutorials will normally include discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes, as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Kalat, J.W. (2009) *Biological Psychology*, 10th Ed., Wadsworth/Thomson Learning.

References

Banich, M.T. (2011) *Cognitive Neuroscience*, 3rd Ed., Thomson Learning.

Freberg, L.A. (2006) *Discovering Biological Psychology*, 1st Ed., Thomson Learning.

Garrett, B.L. (2009) *Brain and behaviour: An Introduction to Biological Psychology*, 2nd Ed., Sage.

Harrington, M. (2006) *The Design of Experiments in Neuroscience*, 1st Ed., Thomson Learning.

The Hong Kong Polytechnic University
Hong Kong Community College

Subject Description Form

Subject Code	CCN2201
Subject Title	Chinese Family and Culture
Level	2
Credit Value	3
Medium of Instruction	English and Chinese (Cantonese)
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	This subject introduces students to both cultural content and cultural context of Chinese families. It equips students with the basic understanding of Chinese culture and Chinese familism, as well as the capacity to analyse the continuity and transformation of traditional cultural elements in Chinese families amid the irresistible trend of modernisation in Chinese societies. Studying the subject enables students to identify issues of development of Chinese families in modern Hong Kong and mainland China.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: ▪ outline the basic elements of Chinese culture and their impacts on family relationships and functioning. ▪ identify key features of development of personality, relations and morality in Chinese family. ▪ articulate the impact of modernisation on Chinese families in cultural context. ▪ describe and discuss the development of Chinese families in Hong Kong and mainland China.
Subject Synopsis/ Indicative Syllabus	Basic Concepts Culture as a way of life; Culture and sub-cultures; Family, kinship and household; Family structures: extended, stem and nuclear; Family functions. Chinese Culture and Chinese Familism Self, family, and society in Chinese culture (renqing, mianzi, and quanxi); Confucianism and the relational self; Three “Bonds” and five “Relationships”; Centrality of blood tie; Father-son axis, Patriarchy and gender inequality; Traditional Chinese family structures, functions and

	rites. Personality, Relations and Morality in Chinese Families “Chinese” personality and character: emotional suppression and immature self; Others-regulated personality; Family and personality development; Differential mode of association vs. organisational mode of association; Stages of moral development; Universal ethical principle vs. situational-interpersonal consideration. Family in Transition in Modern Chinese Societies Blood tie vs. marriage as centrality; Father-son Axis vs. Spouse Axis; Modernisation and nucleation of families; Modernisation and specialisation of functions; Changing power relationship in families: patriarchal culture and gender relationship; Feminism and Chinese families. Chinese Families in Hong Kong and Mainland China Utilitarianistic Familism; Match-of-progress theory on development of families; Culture, family and social policy; Romance, marriage, sex and reproduction re-articulated; New and alternative forms of Chinese families; Chinese migrant families and family crises.																																																				
Teaching/Learning Methodology	Lectures will emphasise the clarification of concepts, delineation of theories and summarisation of contextual information. Occasional audio-visual presentations, group discussions and exercises might be arranged in the lectures. Tutorials will emphasise the application of concepts/principles and contextual reflection with an interactive approach. The activities in tutorials normally include student presentations, class exercises and discussions on articles and local issues.																																																				
Assessment Methods in Alignment with Intended Learning Outcomes	A variety of assessment tools will be used to develop and assess students’ achievement of the subject intended learning outcomes. <table><tr><th rowspan="2">Specific assessment methods/tasks</th><th rowspan="2">% weighting</th><th colspan="4">Intended subject learning outcomes to be assessed</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>Continuous assessment*</td><td>100</td><td colspan="4"></td></tr><tr><td>▪ Participation</td><td>10</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Individual Assignment 1</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Individual Assignment 2</td><td>25</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Group project</td><td>25</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ Test</td><td>25</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Total</td><td>100</td><td colspan="4"></td></tr></table> <i>*Continuous assessment items and/or weighting may be adjusted by the subject</i>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				a	b	c	d	Continuous assessment*	100					▪ Participation	10	✓	✓	✓	✓	▪ Individual Assignment 1	15	✓	✓	✓	✓	▪ Individual Assignment 2	25	✓	✓	✓	✓	▪ Group project	25	✓	✓	✓	✓	▪ Test	25	✓	✓	✓	✓	Total	100				
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▪ Group project	25	✓	✓	✓	✓																																																
▪ Test	25	✓	✓	✓	✓																																																
Total	100																																																				

	<i>team subject to the approval of the College Programme Committee.</i> To pass this subject, students are required to obtain Grade D or above in the Continuous Assessment.	
Student Study Effort Expected	Class contact	Hours
	▪ Lecture	26
	▪ Tutorial	13
	Other student study effort	
	▪ Self-study	52
	▪ Continuous Assessment	39
	Total student study effort	130
Reading List and References	References Cherlin, A. (2010). <i>Public & Private Families: An Introduction</i>. McGraw-Hill. Chu, C. C. Y. (2010). <i>Understanding Chines Families: A Comparative Study of Taiwan and Southeast China</i>. Oxford University Press. Giskin, H., & Walsh, B. S. (eds.) (2001). <i>An Introduction to Chinese Culture Through the Family</i>. State University of New York Press. Slote, W., & DeVos, G. A. (eds.) (1998). <i>Confucianism and the Family</i>. University of California Press. 上海社會科學院家庭研究中心（編）：《中國家庭研究》，上海社會科學院出版社，2006年。 李桂梅：《衝突與融合：中國傳統家庭倫理的現代轉向及現代化》，中南大學出版社，2002 年。 喬健（主編）：《中國家庭及其變遷》，香港中文大學社會科學院暨香港亞太研究所，1991年。 張國剛（主編）。《中國家庭史》五卷，廣東人民出版社，2007年。 張懷承：《中國的家庭與倫理》，中國人民大學出版社，1988 年。 費孝通：《鄉土中國》，三聯書店(香港)有限公司，1985 年。 楊國樞：《中國人的心理與行為：本土化研究》，中國人民大學出版社，2004 年。 劉錫霖、郭康健（主編）：《蛻變中的中國家庭》，廣角鏡出版社有限公司，1997 年。	

	劉寶駒：《社會變遷中的家庭：當代中國城市家庭研究》，巴蜀書社，2006 年。

香港理工大學
香港專上學院

科目大綱
Subject Description Form

科目編號 Subject Code	CCN2202
科目名稱 Subject Title	中國電影與小說 Chinese Film and Fiction
程度 Level	2
學分 Credit Value	3
教學語言 Medium of Instruction	中文〔粵語或普通話〕
修讀條件 Pre-requisite / Co-requisite/ Exclusion	無
科目目標 Objectives	本科目主要介紹中國（大陸、香港、台灣）電影與小說之間的改編關係。課程採用個案討論的方式，通過對電影與小說各自藝術特色的評介，使學生了解社會狀態、人情世故在時空與文化差異中的變遷。學生透過各種作業，結合所獲電影與小說互動的知識，提高自己文學、影像作品的閱讀水平，培養獨立思考、自我學習的能力。
預期學習成果 Intended Learning Outcomes	學生修畢本科目後應能： (d) 了解電影與小說各自的特色優點。 (e) 掌握電影與小說敘事方式的藝術特色。 (f) 探討電影改編小說的得失。 (g) 分析時空差異、文化差異對電影改編小說的影響。 (h) 增強對文字語言及影像語言的欣賞和反思能力。
科目摘要/ 教學大綱 Subject Synopsis/	電影與小說導論 電影與小說的藝術特色；中國電影改編小說的歷史簡介。 現代小說的電影改編

Indicative Syllabus	「五四」的反思：如魯迅《祝福》與桑弧導演同名電影；魯迅《阿Q正傳》與岑範導演同名電影等；現實與人性：如茅盾《林家鋪子》與水華導演同名電影；蘇童《妻妾成群》與張藝謀《大紅燈籠高高掛》；沈從文《蕭蕭》與謝飛導演《湘女蕭蕭》等；華麗與蒼涼：如張愛玲《紅玫瑰與白玫瑰》與關錦鵬導演同名電影；張愛玲《色戒》與李安導演同名電影等。 當代小說的電影改編 鄉村的律動：如施祥生《天上有個太陽》與張藝謀導演《一個都不能少》；鮑十《紀念》與張藝謀導演《我的父親母親》等；殘酷的青春：如王朔《動物凶猛》與姜文導演《陽光燦爛的日子》等；影像中纏綿：如李碧華《青蛇》與徐克導演同名電影；李碧華《霸王別姬》與陳凱歌導演同名電影等；歷史與現實：如曹禺《雷雨》（話劇）與張藝謀導演《滿城盡帶黃金甲》等；台灣的鄉土：如黃春明《兒子的大玩偶》與侯孝賢導演同名電影；黃春明《蘋果的滋味》與萬仁導演同名電影等。																																																																		
教學方法 Teaching/Learning Methodology	講授基礎知識，如電影與小說的審美特性，電影與文學之間的改編關係等；學生課外閱讀小說文本，課堂放映電影節選，方便進行二者比較；學生參與課堂討論，導修課上須做課堂小組報告。																																																																		
配合預期學習成果的評核方法 Assessment Methods in Alignment with Intended Learning Outcomes	本科目採用不同的評核方法，協助學生達致預期學習成果，並評核學生的學習表現。 <table border="1"> <thead> <tr> <th rowspan="2">用以評核的方法/ 習作</th><th rowspan="2">百分比</th><th colspan="5">用以評核的預期學習成果</th></tr> <tr> <th>a</th><th>b</th><th>c</th><th>d</th><th>e</th></tr> </thead> <tbody> <tr> <td>持續評核*</td><td>50</td><td colspan="5"></td></tr> <tr> <td>▪ 測驗</td><td>12.5</td><td>✓</td><td>✓</td><td>✓</td><td></td><td>✓</td></tr> <tr> <td>▪ 習作一</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>▪ 習作二</td><td>17.5</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>▪ 課堂參與</td><td>5</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>期終考試</td><td>50</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>總計</td><td>100</td><td colspan="5"></td></tr> </tbody> </table> *科目小組須待學院課程委員會批准，方可修訂持續評核的項目及/或修改項目所佔的百分比。 學生須在持續評核及期終考試兩個部份分別取得 D 級或以上成績，方為及格。						用以評核的方法/ 習作	百分比	用以評核的預期學習成果					a	b	c	d	e	持續評核*	50						▪ 測驗	12.5	✓	✓	✓		✓	▪ 習作一	15	✓	✓	✓	✓	✓	▪ 習作二	17.5	✓	✓	✓	✓	✓	▪ 課堂參與	5	✓	✓	✓	✓	✓	期終考試	50	✓	✓	✓	✓	✓	總計	100					
用以評核的方法/ 習作	百分比	用以評核的預期學習成果																																																																	
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▪ 測驗	12.5	✓	✓	✓		✓																																																													
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▪ 習作二	17.5	✓	✓	✓	✓	✓																																																													
▪ 課堂參與	5	✓	✓	✓	✓	✓																																																													
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預期學生所需學習時數 Student Study Effort	課堂					小時																																																													
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Expected	▪ 導修課	13
	其他	
	▪ 自修	50
	▪ 持續評核	42
	總學習時數	131
參考書目 Reading List and References	參考書 王朔：《動物凶猛》，北京：台海出版社，2001 年。 王海洲主編：《鏡像與文化：港台電影研究》，北京：中國電影出版社，2002年。 古繼堂：《台灣小說發展史》，台北：文史哲出版社，1996年。 吳秀明主編：《中國當代文學史寫真（全本）》，北京：北京大學出版社，2010年。 李道新：《中國電影文化史》，北京：北京大學出版社，2005年。 李碧華：《青蛇》，香港：天地圖書有限公司，1993 年。 李碧華：《霸王別姬》，香港：天地圖書有限公司，1994 年。 沈從文：《沈從文別集·蕭蕭集》，長沙：岳麓書社，1992 年。 施祥生：《一個都不能少》，北京：中國電影出版社，1999 年。 茅盾：《林家鋪子》，北京：人民文學出版社，1985 年。 夏衍：《寫電影劇本的幾個問題》，上海：復旦大學出版社，2004 年。 尉天驄主編：《鄉土文學討論集》，台北：遠景出版社，1980年。 張愛玲：《惘然記》，香港：皇冠出版社，1983 年。 張愛玲：《傳奇》，北京：中國文聯出版社，1996 年。 曹禺：《雷雨》，北京：人民文學出版社，1994 年。 焦雄屏：《風雲際會——與當代中國電影對話》，台北：遠流出版社，1998年。 程季華主編：《中國電影發展史》（上、下），北京：中國電影出版社，2005年。	

	黃春明：《黃春明小說選》，香港：明報月刊出版社，2009 年。 黃維樑：《中國現代文學導讀》，台北：台灣書店，1998年。 魯迅：《魯迅全集》，人民文學出版社，1981 年。 錢理群、溫儒敏、吳福輝：《中國現代文學三十年》，北京：北京大學出版社，1998 年。 鮑十：《葵花開放的聲音——鮑十小說自選集》，天津：百花文藝出版社，2006年。 戴錦華：《霧中風景：中國電影文化1978－1998》，北京：北京大學出版社版，2000年。 蘇童等著：《熱點小說選萃》，武漢：長江文藝出版社，1992 年。

香港理工大學
香港專上學院

科目大綱
Subject Description Form

科目編號 Subject Code	CCN2203
科目名稱 Subject Title	中國古典小說 Classical Chinese Fiction
程度 Level	2
學分 Credit Value	3
教學語言 Medium of Instruction	中文〔粵語或普通話〕
修讀條件 Pre-requisite / Co-requisite/ Exclusion	無
科目目標 Objectives	本科目透過課堂講授、導修練習及分組習作的方式，引導同學欣賞中國古典小說，使他們對中國古典小說有概括性的認知，培養閱讀中國古典小說的興趣。
預期學習成果 Intended Learning Outcomes	學生修畢本科目後應能： (a) 了解中國古典小說的源流。 (b) 提高對中國古典小說的鑑賞力。 (c) 認識中國古典小說的分類。 (d) 提升中文運用及批判思考能力。
科目摘要/ 教學大綱 Subject Synopsis/ Indicative Syllabus	中國古典小說的源流 中國古代的小說概念、神話與史傳文的小說特質、古典小說的流變、分類等。 志人志怪：六朝的筆記小說 可選用文本：如張華《博物志》、干寶《搜神記》、王嘉《拾遺記》、劉義慶《世說新語》等。

	傳述奇聞：唐代的傳奇 可選用文本：王度《古鏡記》、沈既濟《枕中記》、白行簡《李娃傳》、元稹《鶯鶯傳》、杜光庭《虬髯客傳》、李公佐《南柯太守傳》等。 俗而可耐：宋代的話本 可選用文本：如《五代史平話》、《大宋宣和遺事》、《大唐三藏法師取經記》等。 雅俗共賞：元明清的章回小說 可選用文本：如羅貫中《三國演義》、施耐庵《水滸傳》、吳承恩《西游記》、曹雪芹《紅樓夢》、吳敬梓《儒林外史》等。 警世刺時：明清的白話小說 可選用文本：如馮夢龍《喻世明言》、《警世通言》、《醒世恆言》、凌濛初《拍案驚奇》等。 新舊交織：晚清的新小說 可選用文本：如梁啟超《新中國未來記》、吳趼人《新石頭記》等。																																																				
教學方法 Teaching/Learning Methodology	本科目理論與實踐並重。課堂上會教授各種閱讀方法，引導學生從作者、社會、思想、小說技巧等方面去探究中國古典小說。																																																				
配合預期學習成果的評核方法 Assessment Methods in Alignment with Intended Learning Outcomes	本科目採用不同的評核方法，協助學生達致預期學習成果，並評核學生的學習表現。 <table><tr><th rowspan="2">用以評核的方法/ 習作</th><th rowspan="2">百分比</th><th colspan="4">用以評核的預期學習成果</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>持續評核*</td><td>50</td><td colspan="4"></td></tr><tr><td>▪ 測驗</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ 習作一</td><td>15</td><td></td><td>✓</td><td></td><td>✓</td></tr><tr><td>▪ 習作二</td><td>15</td><td></td><td>✓</td><td></td><td>✓</td></tr><tr><td>▪ 課堂參與</td><td>5</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>期終考試</td><td>50</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>總計</td><td>100</td><td colspan="4"></td></tr></table> *科目小組須待學院課程委員會批准，方可修訂持續評核的項目及/或修改項目所佔的百分比。 學生須在持續評核及期終考試兩個部份分別取得 D 級或以上成績，方	用以評核的方法/ 習作	百分比	用以評核的預期學習成果				a	b	c	d	持續評核*	50					▪ 測驗	15	✓	✓	✓	✓	▪ 習作一	15		✓		✓	▪ 習作二	15		✓		✓	▪ 課堂參與	5	✓	✓	✓	✓	期終考試	50	✓	✓	✓	✓	總計	100				
用以評核的方法/ 習作	百分比			用以評核的預期學習成果																																																	
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持續評核*	50																																																				
▪ 測驗	15	✓	✓	✓	✓																																																
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總計	100																																																				

	為及格。	
預期學生所需學習時數 Student Study Effort Expected	課堂	小時
	▪ 主講課	26
	▪ 導修課	13
	其他	
	▪ 自修	50
	▪ 持續評核	42
	總學習時數	131
參考書目 Reading List and References	主要用書 本科目涉及的參考材料較廣泛，無指定課本。 參考書 王德威著，宋偉杰譯：《被壓抑的現代性：晚清小說新論》，麥田出版事業部，2003 年。 阿英：《晚清小說史》，人民文學出版社，1980年。 馬幼垣：《實事與構想：中國小說史論釋》，聯經出版事業股份有限公司，2007年。 夏志清著，胡益民、石曉林、單坤琴譯：《中國古典小說史論》，江西人民出版社，2001 年。 郭箴一：《中國小說史》，上海書店，1990年。 陳大康：《古代小說研究及方法》，中華書局，2006年。 黃霖、韓同文選注：《中國歷代小說論著選》（修訂本），江西人民出版社，2000年。 魯迅：《中國小說史略》，上海古籍出版社，1998 年。	

香港理工大學
香港專上學院

科目大綱
Subject Description Form

科目編號 Subject Code	CCN2214
科目名稱 Subject Title	中國歷代婦女生活及地位 The Role of Chinese Women in Historical Development
程度 Level	2
學分 Credit Value	3
教學語言 Medium of Instruction	中文〔粵語〕
修讀條件 Pre-requisite / Co-requisite/ Exclusion	無
科目目標 Objectives	本科目主要使同學了解中國歷代婦女的地位、婦女婚前及婚後生活、婦女服飾、各朝代人們對女性地位的看法，並了解以上議題與歷史發展的互動關係，讓同學通過閱讀史籍及文化作品，了解婦女由昔日「無才便是德」、「三從四德」，發展至當代「半邊天」的歷程。
預期學習成果 Intended Learning Outcomes	學生修畢本科目後應能： (a) 了解中國歷代婦女生活及地位的演變。 (b) 了解中外學者研究中國傳統至現代婦女地位的成果。 (c) 明白傳統婦女所受的規限及在社會及家庭中的角色。 (d) 提高同學的性別意識及分析性別議題的能力。 (e) 有效地表達個人對歷代婦女地位的觀點。
科目摘要/ 教學大綱 Subject Synopsis/ Indicative Syllabus	先秦時代的性別關係 介紹史前時期中國的母系氏族社會的性別關係、從母系到父系社會的變遷、父權制的建立、當中所牽涉的因素等。 秦漢時期的婦女與性別

	介紹秦代有關規範兩性與家庭關係的刑法、漢代女禍觀如何承前代的發展加以鞏固、漢代的太后攝政、班昭的《女誡》等。 魏晉南北朝時期的種族與婦女 介紹魏晉南北朝時期的時代因素如何影響兩性關係、南朝與北朝的女主政治、《世說新語》中的女性、女性的「悍」與「妒」等。 隋唐時期婦女的地位與角色 介紹隋唐時期的婦女參政情況、中唐後女主政治的衰落及其原因、唐代在禮教與法律方面如何加強規範女性及兩性關係等。 宋元至明清時期的婦女角色與演變 介紹宋代士大夫如何重建性別秩序、宋元至明清時期對於婦女節烈的要求與發展、婦女在家庭內外的角色、纏足的盛行、明清的才女文化等。 清末民初時期婦女的變革 介紹自鴉片戰爭後西方的衝擊所帶來的有關婦女及兩性關係的新思想、中國知識份子對於興女學、廢纏足的討論與實踐、清末女子留學與參與革命、民國時期關於婦女問題的討論、女性於社會與國家事務的參與等。 中共統治下的「婦女解放」 介紹中共婦女解放的理論、婚姻法的實施、在不同時期政策下婦女所受的影響、分析中共婦女解放的成敗及其原因等。 改革開放下的兩性關係 介紹改革開放對於兩性關係及婦女的衝擊、城鄉婦女的差別、重男輕女觀念的延續及其影響等。																																								
教學方法 Teaching/Learning Methodology	透過歷代通論、個案分析、圖片及電影，深化課堂所學，並鼓勵學生參與課堂報告、討論及互評，進一步活用本科教導的知識，評論中國傳統社會對中國婦女地位的看法及婦女地位演變。學生須提交書面報告和評論，在實踐中驗證學生所學的知識。																																								
配合預期學習成果的評核方法 Assessment Methods in Alignment with Intended Learning Outcomes	本科目採用不同的評核方法，協助學生達致預期學習成果，並評核學生的學習表現。 <table><tr><th rowspan="2">用以評核的方法/ 習作</th><th rowspan="2">百分比</th><th colspan="5">用以評核的預期學習成果</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th><th>e</th></tr><tr><td>持續評核*</td><td>50</td><td colspan="5"></td></tr><tr><td>▪ 習作一</td><td>10</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ 測驗</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>▪ 小組報告</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr></table>	用以評核的方法/ 習作	百分比	用以評核的預期學習成果					a	b	c	d	e	持續評核*	50						▪ 習作一	10	✓	✓	✓	✓	✓	▪ 測驗	15	✓	✓	✓	✓	✓	▪ 小組報告	15	✓	✓	✓	✓	✓
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▪ 小組報告	15	✓	✓	✓	✓	✓																																			

	▪ 課堂參與	10	✓	✓	✓	✓	✓
	期終考試	50	✓	✓	✓	✓	✓
	總計	100					
	*科目小組須待學院課程委員會批准，方可修訂持續評核的項目及/或修改項目所佔的百分比。 學生須在持續評核及期終考試兩個部份分別取得 D 級或以上成績，方為及格。						
預期學生所需學習時數 Student Study Effort Expected	課堂					小時	
	▪ 主講課					26	
	▪ 導修課					13	
	其他						
	▪ 自修					52	
	▪ 持續評核					39	
	總學習時數					130	
參考書目 Reading List and References	參考書						
	杜芳琴，王政編著：《中國歷史中的婦女與性別》，天津人民出版社，2004 年。						
	陳東原：《中國婦女生活史》，上海：商務印書館，1928 年。						
	陳三井主編著：《近代中國婦女運動史》，臺北：近代中國出版社，2000 年。						
	杜芳琴，王政主編：《中國歷史中的婦女與性別》，天津：天津人民出版社，2004 年。						
	黃嫣梨：《妝臺與妝臺以外：中國婦女史研究論集 》，香港：牛津大學出版社，1999 年。						
	Dorothy Ko, D. (2005). <i>Cinderella's Sisters: A Revisionist History of Footbinding</i> . Berkeley, Calif.: University of California Press.						

香港理工大學
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科目大綱
Subject Description Form

科目編號 Subject Code	CCN2216
科目名稱 Subject Title	傳統東方智慧 Wisdom in Eastern Tradition
程度 Level	2
學分 Credit Value	3
教學語言 Medium of Instruction	中文〔粵語〕
修讀條件 Pre-requisite / Co-requisite/ Exclusion	無
科目目標 Objectives	本科目透過課堂講授、導修課、小組報告等形式，從哲學分析的進路探討中國哲學主要的思想傳統，包括儒家、道家和佛家的哲學思想，以至各家之間的傳承與衝突、發展與融合，從而說明這些傳統如何塑造東方的人生智慧，及至對現代社會的意義和價值。修讀本科目亦有助訓練學生批判思考和價值判斷的能力。
預期學習成果 Intended Learning Outcomes	學生修畢本科目後應能： (i) 宏觀地理解傳統東方智慧的特質和長處。 (j) 掌握儒、道、佛三家的基本哲學思想。 (k) 增強閱讀和分析原典文獻的能力。 (l) 探討傳統東方智慧的現代意義和價值。
科目摘要/ 教學大綱 Subject Synopsis/ Indicative Syllabus	傳統東方智慧 中國哲學的主流思想，如儒家、道家、佛家哲學等。人生哲學的基本理論，如人生境界說等。 儒家

	儒家哲學的基本理論，如孔子、孟子的哲學等。儒家哲學的現代意義。 道家 道家哲學的基本理論，如老子、莊子的哲學等。道家哲學的現代意義。 佛家 佛家哲學的基本理論，如中國禪學的思想等。佛家哲學的現代意義。 其他學派 如前期墨家、後期墨家、名家、法家和兵家的思想等。（具體內容可由講師按實際情況自行選取。）																																																								
教學方法 Teaching/Learning Methodology	本科目理論與實際並重。課堂集中講解中國哲學主流的理論和概念，導修課討論相關的文獻，並探討傳統東方智慧對現代社會的意義和價值。學生亦會透過小組討論和口頭報告的方式，以鞏固所學。																																																								
配合預期學習成果的評核方法 Assessment Methods in Alignment with Intended Learning Outcomes	本科目採用不同的評核方法，協助學生達致預期學習成果，並評核學生的學習表現。 <table border="1"> <thead> <tr> <th rowspan="2">用以評核的方法/習作</th><th rowspan="2">百分比</th><th colspan="4">用以評核的預期學習成果</th></tr> <tr> <th>a</th><th>b</th><th>c</th><th>d</th></tr> </thead> <tbody> <tr> <td>持續評核*</td><td>50</td><td colspan="4"></td></tr> <tr> <td>▪ 期中測驗</td><td>20</td><td>✓</td><td>✓</td><td></td><td>✓</td></tr> <tr> <td>▪ 小組報告</td><td>15</td><td></td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>▪ 個人習作</td><td>10</td><td>✓</td><td>✓</td><td></td><td>✓</td></tr> <tr> <td>▪ 參與討論</td><td>5</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>期終考試</td><td>50</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr> <tr> <td>總計</td><td>100</td><td colspan="4"></td></tr> </tbody> </table> *科目小組須待學院課程委員會批准，方可修訂持續評核的項目及/或修改項目所佔的百分比。 學生須在持續評核及期終考試兩個部份分別取得 D 級或以上成績，方為及格。					用以評核的方法/習作	百分比	用以評核的預期學習成果				a	b	c	d	持續評核*	50					▪ 期中測驗	20	✓	✓		✓	▪ 小組報告	15		✓	✓	✓	▪ 個人習作	10	✓	✓		✓	▪ 參與討論	5	✓	✓	✓	✓	期終考試	50	✓	✓	✓		總計	100				
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▪ 參與討論	5	✓	✓	✓	✓																																																				
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	▪ 持續評核	42
	總學習時數	133
參考書目 Reading List and References	參考書 陳榮捷：《中國哲學文獻選編》，巨流圖書公司，1993 年。 馮友蘭：《中國哲學簡史》，三聯書店，2009 年。 勞思光：《新編中國哲學史》，三民書局，1995 年。	

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces common biomolecules such as carbohydrates, lipids, amino acids and enzymes and the basic biochemical reactions in living organisms. This subject serves as a framework of fundamental information for the students who wish to pursue further study in the biological field at college level. The design of the subject is to present the construction of these relatively simple organic blocks into the complicate biological macromolecules of life, the metabolic pathways and the interactions of the macromolecules as in energy transduction and enzymatic actions of the life-form.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the structure and the properties of carbohydrates, lipids, amino acids and nucleic acid bases; and relate the structure with the function of some important biomolecules.
- understand the basic principles of carbohydrate and lipid metabolism to appreciate how energy is being preserved, and extracted and utilised in biological systems.
- explain the essential principles of enzymology and solve problems in enzyme kinetics and mechanisms.
- apply the basic biochemical techniques on enzyme characterisation and metabolite assays, and interpret and analyse biochemical data.
- appreciate the applications of biochemical techniques in some biotechnological fields related to our daily lives.

Indicative Contents

- **Carbohydrate Structure, Properties and Functions**
Structure and function of carbohydrate molecule in life.
- **Biochemical Pathway of Carbohydrate**
Glycolysis; Pentose phosphate shunt; Gluconeogenesis and TCA cycle; Electron transport and oxidative phosphorylation.
- **Properties of Lipid**
Structure and functions of lipid molecule in life.

- **Biochemical Pathway of Lipid**
Metabolism of lipid; Beta-oxidation.
- **Properties of Protein**
Amino acids as constituents of protein; Covalent structure of proteins; Three dimensional structure and function of protein molecules in life; Protein folding and dynamics.
- **Basic Principles of Enzymology**
Enzyme kinetics and metabolism.
- **Introduction to Biotechnology**
Application of biochemical technology in food production, fermentation, pharmaceuticals and environmental protection.

Teaching/Learning Approach

The course is composed of three parts: lectures, tutorials and laboratory sessions. Lectures will be designed to provide students with the basic concepts of structure-function relationship of common biomolecules and the principles of metabolism and enzymology. To enhance their learning and knowledge, problem-based learning approach will be adopted. Tutorial classes will be used to gauge their learning and performance. Practical classes will be used to introduce some basic techniques in biochemistry and to develop their skills in data interpretation and report writing. A variety of assessment tools will be used, including quizzes, assignments, and reports to develop students' analytical skills, critical thinking and communication skills.

Assessment Approach

A variety of assessment tools will be used, including presentations, group discussions, written laboratory reports, classroom feedback, test(s) and an examination so as to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Nelson, D.L. and Cox, M.M. (2008) *Lehninger principles of biochemistry*, 5th Ed., Freeman.

References

Berg, J.M., Tymoczko, J.L. and Stryer, L. (2007) *Biochemistry*, 6th Ed., Freeman.

Campbell, M.K. and Farrell, S.O. (2012) *Biochemistry*, 7th Ed ., Cengage Learning.

Champe, P.C., Harvey, R.A. and Ferrier, D.R. (2008) *Biochemistry*, 4th Ed., Lippincott Williams & Wilkins.

Metzler, D.E. (2001) *Biochemistry: the chemical reactions of living cells*, 2nd Ed., Academic Press.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject enables students to understand the principles of taxonomy, physiology and growth requirements of microorganisms. The significance of the different groups of microorganisms, including bacteria, fungi and viruses in environment and diseases are discussed and concepts on disinfection, personal hygiene and disease prevention are illustrated. Students are introduced and familiarise themselves with the basic microbiological techniques, so as to isolate, culture, observe, and identify microorganisms.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the structure and functions of microorganisms
- appraise microbial diversity and utilise taxonomy as classification of microbes
- describe and explain the ecological role and host-parasite relationships of microorganisms that infect humans and animals, and the various modes of transmission of the infections
- familiarise themselves with etiology and pathogenesis of infections on different body systems caused by microbes
- appreciate microbial metabolism and growth
- conduct proper microbial methods and aseptic laboratory techniques for identification and study of microbes

Indicative Contents

- **Taxonomy and Structure of Microorganisms**
Classification of microorganisms: bacteria, viruses, prion, fungi and protozoa; Structure of microorganisms.
- **Metabolic Diversity of Microorganisms**
Various sources of energy and metabolic pathways of microorganisms.
- **Transmission of Infections**
Source and modes of spread of infections: reservoirs, vehicles, transmissibility, Mode of spread of infection and methods for control spread between and within individuals; Airborne infections; Water-borne infections; Food-borne infections; Contact-borne infections; Zoonotic infections; Hospital-acquired infections and Community infections.

- **Prevention of Infections**

Measures to prevent and control the spread of infection; Principles and applications of sterilisation and disinfection; Aseptic procedures; Antimicrobial agents: antibiotics and chemotherapy; Principles of use; Modes of action and control of antimicrobial use.

- **Host-parasite Relationship**

Host-pathogen interactions; Factors predisposing to infection; Pathogenicity of microorganisms: toxigenic and invasive properties; Nature and roles of the body's non-specific and specific host defense mechanisms.

- **Common Human Infectious Diseases**

Common infections of the skin, cardiovascular system, gastrointestinal system, nervous system, respiratory system and urinary system.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of knowledge on microorganisms. Basic microbiological techniques and laboratory skills which are necessary to culture and identify microorganisms will be taught in practicals. Tutorials will be conducted with problem based activities and discussions to enhance understanding of the knowledge acquired for control of microbial growth, disease prevention and maintenance of personal hygiene.

Assessment Approach

The knowledge in microbiology on basic structures of microorganisms, host and parasite relationship, infectious methods and related diseases will be assessed through case studies, group discussion, tests and examinations. In the assessment, students should analyse clinical or real-life cases given and derive preventive measures in model clinical or ordinary settings. The assessment tasks including test and examination are designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical skills during the process of learning.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Prescott, L.M.; Harley, J.P. and Klein, D.A. (2010) *Microbiology*, 8th Ed., McGraw Hill.

Talaro, K.P. (2009) *Foundations in microbiology*, 7th Ed., McGraw-Hill.

References

Nester, E. W., Anderson, D.G., Roberts, C.E., Pearsall, N.N. and Nester, M.T. (2009) *Microbiology: A human perspective*, 6th Ed., McGraw Hill.

Tortora, G.J., Funke, B.R. and Case, C.L. (2010) *Microbiology: An introduction*, 10th Ed., Benjamin/Cummings Publishing Co.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject enables students to acquire a basic understanding of the body as an integrated entity from cellular level to whole body and to appreciate the interrelationships between body systems as a whole. The study of this subject contributes to the students' acquisition of a general basis for further study in areas related to human biology.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- appreciate and discuss the topics related to human biological science
- use appropriate terms to describe the human body, cell structure, and the basic metabolic processes of the organ systems studied
- identify and explain the intricate complexities of structure and function in the human body
- explain the basic pathological basis involving the selected body systems
- analyse the interrelationships between organ systems and physiological processes
- critically assess and evaluate mechanisms that maintain homeostasis in biological systems

Indicative Contents

- **Organisation of the Human Body**
 - Structure and function of the cell: organelles, functions of the cells
 - Histology: The study of tissues, cellular features and organisation
 - Gross anatomy of organ systems
- **Regulation and Maintenance**
 - Cardiovascular system: basic anatomical structure of the cardiovascular system, blood vessels, systemic and pulmonary circulations, cardiac output, cardiac cycle, blood pressure, control of heart beat, electrical activity of heart and electrocardiogram; Prevention of cardiovascular diseases; Regulation of blood flow; Nervous and endocrine control of cardiac function
 - Blood cells, blood composition, hemostasis, blood typing and blood transfusion
 - Lymphatic system and immunity: inflammation reactions, immune cells, lymphatic system, antibodies, non-specific immunity responses; Specific immunity responses, active and passive immunity; Diseases caused by immune system such as allergies, autoimmune diseases and immune deficiency

▪ **Support and Movement**

- Integumentary system: structure and functions of hair, skin, nails; Disorders of the skin such as skin cancer, burns and wound healing
- Skeletal system: structures and functions of bones, neural control of muscle contraction, structure of bone and cartilage, growth and remodeling of bone; calcium homeostasis, functional anatomy of the limbs and spine, articulation and movement
- Muscular system: functions and support of muscle
- Pathogenesis and manifestations of common neuromuscular diseases such as tetanus, muscular dystrophy and myasthenia gravis.
- Pathogenesis and manifestations of common musculoskeletal disorders such as fractures, dislocation of joints, sprain & strains, tendinitis, rickets, osteoporosis, osteoarthritis, rheumatoid arthritis and gout.

Teaching/Learning Approach

Lectures will focus on the introduction of the anatomy followed by elaboration of the key concepts and underlying principles of physiology. Clinical applications related to the basic human biology knowledge will be discussed during lectures to enhance students' acquisition of basic concepts and their relevant applications.

Tutorials will provide students with the opportunity to engage in more active learning. Multimedia aids such as interactive videos, CD-ROMs, and online quizzes will be adopted to reinforce and consolidate materials from the lectures. Virtual laboratory sessions will be designed to supplement the theoretical content taught in lectures. These learning activities are to develop students' abilities in identifying the relationship between structure and physiology, and analysing the mechanism in maintaining homeostasis.

Assessment Approach

A variety of assessment tools may be used, including objective questions, case studies, group presentations, written reports, tests and examinations designed to evaluate students' level of comprehension; analysis and abilities to put theories into application.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading and revision.

Indicative Readings

Recommended Textbooks

Longenbaker, S. (2014) *Mader's Understanding Human Anatomy & Physiology*, 8th Ed., McGraw-Hill.

Starr, C. & McMillan, B. (2012) *Human Biology*, 9th Ed., Brooks/Cole.

Martini, F.H. (2009) *Fundamentals of anatomy and physiology*, 9th Ed., Benjamin Cummings.

References

- Saladin, K. S. (2011) *Human anatomy and physiology*, 5th Ed., McGraw Hill.
- Marieb, E. N. (2010) *Human anatomy and physiology*, 8th Ed., Benjamin Cummings.
- Waugh, A. (2010) *Ross and Wilson anatomy and physiology in health and illness*, 11th Ed., Churchill Livingstone.
- Tortora, G.J. and Grabowski, S. R. (2012) *Principles of anatomy and physiology*. 13th Ed., John Wiley and Sons.
- Vanputte, C., Regan, J. and Russo, A. (2010) *Seeley's anatomy and physiology*, 9th Ed., McGraw Hill.
- Schneider, R. E., Hankin, M. H., Morse, D. E. and Brnnette-Clarke, C. A. (2008) *Anatomy & physiology revealed: An interactive cadaver dissection experience* (2nd version) [CD-ROM], McGraw -Hill.
- Moore, K. L., Dalley, A. F., and Agur, A. M. R. (2009) *Clinically oriented anatomy*, 6th Ed., Lippincott Williams & Wilkins.
- Abrahams, P. H., Hutchings, R. T., and Marks, Jr. S. C. (2008) *McMinn's colour atlas of Human Anatomy*, 5th Ed., Mosby Elsevier.
- Gosling, J.A., Harris, P.F., Humpherson, J. R., Whitmore, I., and Willan, P. L. T. (2008) *Human anatomy color atlas and text*, 5th Ed., Mosby.
- Rosto, E. (2014) *Pathophysiology Made Incredibly Easy*, 5th Ed., Wolters Kluwer Health/Lippincott Williams & Wilkins.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject enables students to acquire a basic understanding of the body as an integrated entity from cellular level to whole body and to appreciate the inter-relationships between body systems as a whole. The study of this subject contributes to the students' acquisition of a general basis for further study in areas related to human biology.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- appreciate and discuss the topics related to human biological science
- use appropriate terms to describe the human body, cell structure, and the basic metabolic processes of the organ systems studied
- identify and explain the intricate complexities of structure and function in the human body
- explain the basic pathological basis involving the selected body systems
- analyse the interrelationships between organ systems and physiological processes
- critically assess and evaluate mechanisms that maintain homeostasis in biological systems

Indicative Contents

- **Regulation and Maintenance**
 - Respiratory system: cellular organisation of the lung, structure of the respiratory system, pulmonary circulation, respiration, ventilation and lung mechanics, exchange of gases in alveoli and tissues, transport of blood gases, respiratory volumes, mechanism of chemical control of ventilation rate, basic quantitative evaluation; Common infections/disorders of the upper and lower respiratory tracts such as tonsillitis, sinusitis, pneumonia, bronchitis, asthma, emphysema, tuberculosis and lung cancer
 - Digestive system: mastication, ingestion, digestion, absorption, assimilation and excretion; Regulation of contraction and secretion in the digestive tract; Nutrition; Chemical digestion and effects of aging in the digestive system such as gastroesophageal reflux disease, peptic ulcers, diverticulosis and constipation.
 - Urinary system: anatomy of the urinary system, control of water, electrolytes and acid-base balance. Urine formation; Regulation of kidney functions; Disorders in the urinary system such as urethritis, cystitis, pyelonephritis, renal calculi and renal failure

- **Reproduction and Development**
 - Reproductive system: structures of male and female reproductive systems; Spermatogenesis, oogenesis; Female reproductive cycle: menstrual cycle, ovulation cycle; Regulation of female and male hormone levels; Contraceptive methods, pregnancy and labour
 - Genetics, embryology and pre-natal development: introduction to DNA, concepts on genetics, development of embryo and pre-natal development; Chromosomal inheritance; Karyotyping; Down syndrome; Inheritance of genes on autosomal chromosomes; Sex-linked inheritance; Genetic counselling; Gene therapy
 - Development, growth and ageing: childhood to adolescence development, issues of ageing
- **Integration and control systems**
 - Nervous system: Structures and types of neurons, action potential, signal transduction, neurotransmitters, reflex; Structure of different brain parts, cognitive functions of the cerebrum; Pathogenesis and manifestations of common neurological disorders: traumatic brain injuries, spinal cord injury, Parkinson's disease, Alzheimer disease and the effects of aging in the nervous system
 - Endocrine system: classification of hormones and their major functions; Controlling mechanisms of hormone secretion; Function of hormones; Physiological link between the endocrine and nervous system; Pathogenesis and manifestations of endocrine disorders such as diabetes mellitus, disorders of the thyroid gland, parathyroid glands, adrenal glands and the effects of aging in the endocrine system

Teaching/Learning Approach

Lectures will focus on the introduction of the anatomy followed by elaboration of the key concepts and the underlying principles on physiology. Clinical applications related to the basic human biology knowledge will be discussed during lectures to enhance students' acquisition of basic concepts and their relevant applications.

Tutorials will provide students with the opportunity to engage in more active learning. Multimedia aids such as interactive videos, CD-ROMs, and online quizzes are adopted to reinforce and consolidate materials from the lectures. The virtual laboratory sessions are designed to supplement the theoretical content taught in lectures. These learning activities are to develop students' abilities in identifying the relationship between structure and physiology, and analysing the mechanism in maintaining homeostasis.

Assessment Approach

A variety of assessment tools may be used, including objective questions, case studies, group presentations, written reports, tests and examinations designed to evaluate students' level of comprehension; analysis and abilities to put theories into application.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading and revision.

Indicative Readings

Recommended Textbooks

Longenbaker, S. (2014) *Mader's Understanding Human Anatomy & Physiology*, 8th Ed., McGraw-Hill.

Starr, C. & McMillan, B. (2012) *Human Biology*, 9th ed., Brooks/Cole.

Martini, F.H. (2009) *Fundamentals of anatomy and physiology*, 9th ed., Benjamin Cummings.

References

Saladin, K. S. (2011) *Human anatomy and physiology*, 5th Ed., McGraw Hill.

Marieb, E. N. (2010) *Human anatomy and physiology*, 8th Ed., Benjamin Cummings.

Waugh, A. (2010) *Ross and Wilson anatomy and physiology in health and illness*, 11th Ed., Churchill Livingstone.

Tortora, G.J. and Grabowski, S. R. (2012) *Principles of anatomy and physiology*, 13th Ed., John Wiley and Sons.

Vanputte, C., Regan, J. and Russo, A. (2010) *Seeley's anatomy and physiology*, 9th Ed., McGraw Hill.

Schneider, R. E., Hankin, M. H., Morse, D. E. and Brnnette-Clarke, C. A. (2008) *Anatomy & physiology revealed: An interactive cadaver dissection experience* (2nd version) [CD-ROM], McGraw-Hill.

Moore, K. L., Dalley, A. F., and Agur, A. M. R. (2009) *Clinically oriented anatomy*, 6th Ed., Lippincott Williams & Wilkins.

Abrahams, P. H., Hutchings, R. T. and Marks, Jr. S. C. (2008) *McMinn's colour atlas of human anatomy*, 5th Ed., Mosby Elsevier.

Gosling, J.A., Harris, P.F., Humpherson, J. R., Whitmore, I., and Willan, P. L. T. (2008) *Human anatomy color atlas and text*, 5th Ed., Mosby.

Rosto, E. (2014) *Pathophysiology Made Incredibly Easy*, 5th Ed., Wolters Kluwer Health/Lippincott Williams & Wilkins.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2233 Human Biology I and CCN2234 Human Biology II
Assessment	60% coursework 40% examination

Aims

This subject will develop students' professional knowledge on the process and mechanism of disease, in order to meet clients' health needs in the clinical settings. The subject will focus on an application of knowledge of pathophysiology and pharmacology required for the care of clients with different kinds of diseases or health problems. It will also facilitate students to demonstrate their ability on critical inquiry and acquisition of problem solving, critical thinking and lifelong learning skills.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- outline the patterns of inheritance of familial diseases
- distinguish the pathological changes from the normal physiology of human beings
- explore causes (environmental agents, nutritional and lifestyle choices) and consequences of selected disease states, aging and degenerative diseases
- understand the body defensive mechanisms to infections and diseases
- describe the concepts of pharmacokinetics, therapeutic drug monitoring and iatrogenic diseases

Indicative Contents

- **Causes of diseases: inherited, acquired and multifactorial disorders**
Patterns of inheritance; Gene linkage; Multiple allele systems and incomplete expression; normal and abnormal karyotype; Translocation; causes and consequences of abnormal karyotype with selected examples; Factors causing acquired diseases, eg. Nutrition-related, trauma, toxins etc.
- **Disorders of cell growth & tissue differentiation; carcinogenesis**
Definition/explanation of and causes and consequences of cellular changes and classification of malignancy; Behavior, clinical effects and methods of spread of tumours; Factors involved in carcinogenesis.
- **Immune response and disorders of the immune system**
Primary and secondary immune responses; the role of the spleen, the thymus, lymph nodes and lymphocytes ; Production and action of antibodies; Immunodeficiency states, including AIDS; autoimmune disease and allergies.
- **Inflammatory response**

Protective action of inflammation; vascular changes and cellular responses in acute inflammation; Possible outcomes of acute inflammation; Characteristics of chronic inflammation; Causes and consequences of chronic inflammation; Hypersensitivity reactions; Pathological changes of the respiratory system.

- **Disorders of metabolism**

Cellular changes in disorders of metabolism; Causes and consequences of selected disorders of metabolism, eg. inborn errors of metabolism, diabetes mellitus and the metabolic syndrome, renal failure, coronary heart disease.

- **Theories of aging and impact of age on risk of disease**

Life span, life expectancy; Theories of aging, eg. Mitochondrial, membrane, genetic, free radical, disposable soma, wear and tear, rate of living, biological clock; Age-related changes in cells, tissues and organs; Changes in physiological/hemostatic system; Signs and symptoms of age; Age-related mortality; Descriptions of age-related diseases.

- **Concepts of pharmacokinetics, therapeutic drug monitoring and iatrogenic disease**

Absorption and distribution of drugs; Dosage calculation and monitoring; Half-life and elimination; Side-effects and adverse reactions; Drug-related iatrogenic disease; Selective toxicity of antibiotics.

Teaching/Learning Approach

Lecture and tutorials

Lectures will be conducted to provide students the knowledge of pathophysiology on various diseases, associated with evaluation, treatment and principles of pharmacology. The tutorials will be supplemented with case scenarios to promote students' learning interest and understanding on an application of theory into practice.

Assessment Approach

A variety of assessment tools will be used, including presentations, case studies, written reports, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the teaching plan. The subject intended learning outcome(s) assessed in each coursework component will be explained to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

McCance, K., and Huether, S. (2010) *Pathophysiology: The biologic basis for disease in adults and children*, 6th Ed., St. Louis: Mosby.

Rosto E. (Ed.). (2009) *Pathophysiology made incredibly easy*, 4th Ed., PA : Lippincott Williams & Wilkins.

References

Karch, A. M. (2009) *Lippincott's nursing drug guide*, 1st Ed., Philadelphia: Lippincott Williams & Wilkins.

Skidmore-Roth, L. (2010) *Mosby's 2010 nursing drug reference*, 23rd Ed., St. Louis: Mosby.

Porth, C. M., and Matfin, G. (2009) *Pathophysiology: Concepts of altered health states*, 8th Ed., Philadelphia: Lippincott Williams & Wilkins.

Adams, M. P., Holland, L. N., and Bostwick, P. M. (2008) *Pharmacology for nurses: A pathophysiologic approach*, 2nd Ed., Upper Saddle River: Pearson/Prentice Hall.

Kumar, V., Abbas, A.K., Fausto, N. and Aster, J.C. (2010) *Robbins and Cotran pathologic basis of disease*, 8th Ed., USA: Sauders.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	HKDSE Mathematics Extended Module 2 or CCN1048 Introduction to Linear Algebra
Assessment	40% coursework 60% examination

Aims

This subject introduces the techniques of linear algebra and their applications. It provides students with mathematical training to understand essential linear algebra concepts and apply methods of the subject to solve a range of practical problems.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- perform basic operations of matrix algebra and apply them to solve systems of linear equations
- evaluate mathematical quantities associated with vector spaces, matrix diagonalization and other matrix algorithms
- discuss basic concepts of vector spaces, linear transformations and inner product spaces
- interpret concepts of vector spaces from a geometric perspective
- prove mathematical statements of linear algebra rigorously
- apply methods and techniques of linear algebra to the solutions of problems in statistics and applied mathematics

Indicative Contents

- **Preliminaries**
Review of matrices, determinants and systems of linear equations.
- **Vector Spaces**
Vector space axioms; Subspaces; Spans and linearly independence; Bases and dimensions; Ranks of matrices.
- **Eigenvalues**
Eigenvalues and eigenvectors; Diagonalization and diagonalizability of matrices; Orthogonal diagonalization of real symmetric matrices; Quadratic forms and positive definite matrices.
- **Linear Transformations**
Definition and properties; Kernels and ranges; Matrix representations of linear transformations; Change of bases.
- **Inner Product Spaces**

Inner product and norms; Orthogonality and orthogonal subspaces; Gram-Schmidt orthogonalization process; Applications to least squares problems.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of mathematical concepts and techniques in linear algebra as well as on the demonstration of how they can be applied to solve practical problems in statistics and applied mathematics.

Tutorials will provide students with the opportunity to reinforce their understanding of concepts and methods taught in lectures and apply appropriate techniques to solve problems from science and engineering. These sessions develop effective problem-solving and presentation skills of students.

Assessment Approach

A variety of assessment tools will be used, including assignments, test(s) and an examination, so as to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including analytical and problem-solving skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Leon, S. J. (2010), *Linear algebra with applications*, 8th Ed., Pearson/Prentice Hall.

References

Anton, H. (2010), *Elementary linear algebra*, 10th Ed., Wiley.

Harville, D. A. (2008), *Matrix algebra from a statistician's perspective*, Springer.

Lay, D. C. (2006), *Linear algebra and its applications*, 3rd Ed., Pearson/Addison-Wesley.

Strang, G. (2006), *Linear algebra and its applications*, 4th Ed., Brooks/Cole.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject aims to provide students with an overview of the linear model approach (regression analysis) and the sum of squares approach (analysis of variance) to analyse data. It enables students to have a thorough understanding of the methods of regression analysis as one of the most widely used statistical techniques for analysing data. The subject helps students to develop their ability to analyse the practical problems with the use of computer statistical packages such as SPSS, as well as commercial software EXCEL.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- formulate and tackle simple/multiple linear regression problems so as to identify the appropriate model for the problems
- perform variables selection, estimation and inference on the parameters of the regression model built, and to diagnose if any problems arise due to violation of assumptions of least square regression models
- gain basic knowledge and understanding of the analysis of variance (ANOVA) approach to analyse data, as well as the assumptions behind ANOVA
- identify and describe fixed-effects model and random-effects model when dealing with one-factor ANOVA problems
- report the results of the ANOVA problems and assess their significance

Indicative Contents

- **Simple Linear Regression**
Model and assumptions; Least squares estimation of parameters; Inference on the parameters; Coefficient of determination; Confidence interval for the mean value of the response variable; Prediction interval; Test for lack of fit; Examination of residuals; Calculation and interpretation of product-moment correlation (Pearson) and rank correlation (Spearman's coefficient).
- **Multiple Linear Regression Model**
An extension of the simple linear regression model and as a special case of the general linear model $y = Xb + c$; Estimation and inference on the parameters; Partial F-test; Polynomial regression.
- **Variable Selection and Model Building**

Selection of independent variables; Criteria for subset regression; The methods of all regressions, backward elimination, forward selection and stepwise regression.

- **Indicator Variables**
Concept of indicator variables; Use of indicator variables.
- **Multicollinearity**
The problem of multicollinearity; Multicollinearity diagnostics; Solutions to multicollinearity.
- **Autocorrelation**
Sources and effects of autocorrelation; Detecting the presence of autocorrelation; Parameter estimation procedures with autocorrelated errors.
- **Design of Experiments**
Reason for experimentation, causality. Principles of replication and randomisation, completely randomised design.
- **Analysis of Variance**
One-way classification; Partitioning of the total sum of squares and the degrees of freedom; ANOVA table; Fixed-effects model and random-effects model; Expectations of mean squares; Estimation of the overall mean and components of variance; Regression approach to ANOVA.

Teaching/Learning Approach

The subject will be delivered mainly through lectures and tutorials. The lectures will be conducted to introduce the elements of applied statistical methods in the syllabus, which are then reinforced by learning activities involving demonstration, tutorial exercises and computer assignments.

Assessment Approach

A variety of assessment tools will be used, including individual assignments, mini-project, test(s) and examination designed to develop and assess students' analytical skills in applying a range of statistical analysis techniques.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Kutner, M.H., Neter, J. and Wasserman, W. (2005) *Applied Linear Statistical Models*, 5th Ed., McGraw Hill.

Walpole, R.E, Myers, R.H. and Myers, S.L. (2011) *Probability and Statistics for Engineers and Scientists*, 9th Ed., Pearson.

References

Bowerman, B.L., O'Connell, R.T. (2000) *Linear Statistical Models, An Applied Approach*, 2nd Ed., Duxbury Press.

Dretzke, B.J. (2008) *Statistics with Microsoft Excel*, 4th Ed., Prentice Hall.

Montgomery, D.C., Peck, E.A., and Vining, G.G. (2001) *Introduction to Linear Regression Analysis*, 3rd Ed., Wiley-Interscience.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject aims to introduce the basic concept and essential knowledge in computer communications and networks.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- grasp the key principles of computer networks and their operation principles and protocols
- analyse communication systems from the perspectives of communication architectures, network organisation, security, implementation techniques
- explore technical and practical issues of communicating data between computers over networks
- realise a computer network by applying knowledge acquired and by selecting appropriate network devices and systems

Indicative Contents

- **Data Communications Fundamentals**
Protocol Layering Concept; Standards Organisations; OSI Reference Model; Modulation Techniques; Data Rate; Bandwidth; Communication Devices; Topologies.
- **Data Link and Local Area Networks**
Framing; Error Detection Methods; Error Control; Automatic Repeat Request Protocols; Window Mechanism; Data Link Control Protocols; Medium Access Control Protocols, and Wireless LANs.
- **Wide Area Networks & Internetworking**
Store & Forward; Circuit Switching; Packet Switching; Virtual Circuits & Datagrams; Routing; Congestion & Flow Control; Internet Architecture; IP Addressing and subnets; Address resolution protocol.
- **Protocol Suite and Application**
TCP/IP Protocol Suite; Network Security; Network Applications; Socket Programming.

Teaching/Learning Approach

Theory and basic concepts will be delivered during the lectures. Exercise will be carried out in tutorials to illustrate and reinforce the concepts. Group discussions and activities might be arranged to stimulate students' interests or their awareness of practical implications of some concepts on computer networks.

Tutorials provide students with the opportunity to consolidate their understanding of the concepts taught in lectures and to apply the theories to the analysis of real-life issues. The activities in tutorials normally include student presentations and discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools may be used, such as case studies, system design, tests and examination designed to develop and assess critical thinking as well as analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Forouzan, B.A. (2007) *Data Communications and networking*, 4th Ed., McGraw Hill.

References

A. S. Tanenbaum, (2010) *Computer networks*, 5th Ed., Prentice Hall.

D.E. Comer, (2004) *Computer networks and internets with internet applications*, 4th Ed., Prentice-Hall.

L. Peterson and B. Davie, (2007) *Computer networks: A systems approach*, 4th Ed., Morgan Kaufmann.

A. Elahi and M. Elahi, (2006) *Data, network, and internet communications technology*, Thomson Delmar Learning.

W. Tomasi, (2005) *Introduction to data communications and networking*, Pearson/Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2042 Computer Programming
Exclusions	Nil
Assessment	60% coursework 40% examination

Aims

This subject aims to provide students with basic concepts of data structures and algorithms. It provides students with an understanding to apply simple data structures and algorithms in developing computer programs in high-level programming language.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the properties of basic data structures.
- identify the strengths and weaknesses of different data structures.
- possess the knowledge of various common algorithms.
- design and employ appropriate data structures and algorithms for developing computer applications using high-level language, such as Java.
- think critically for improvement in the solutions.

Indicative Contents

- **Programming and algorithms**
Computer algorithms; Types of algorithms; Data structures; Abstract data types.
- **Data structures: representation and algorithms**
Linear structures: linked-lists, stacks, queues; Tree structures: binary trees, balanced trees, tree traversals.
- **Sorting**
Common sorting algorithms: bubble sort, insertion sort, selection sort; Optimal-time sorting algorithms: quick sort, merge sort, heap sort.
- **Searching**
Common searching algorithms: sequential search, binary search; Advanced searching algorithms: tree search, and hashing.
- **Applications**
Practical program development using combination of various data structures and algorithms for business applications.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Discussions and activities might be arranged to stimulate students' interests or their awareness of practical implications of some concepts.

Tutorials provide students with the opportunity to deepen their understanding and to explore further the applications of concepts and theories taught. In the tutorials, students will be required to design and develop software solution to practical problems by applying appropriate data structures and algorithms.

Assessment Approach

A variety of assessment tools will be used, including programming projects, tests and an examination, to develop and assess students' programming skills and knowledge of data structures and algorithms. Apart from meeting the learning outcomes, the programming projects allow students to integrate their knowledge on applying appropriate data structures and algorithms to solve practical problems in a team.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Drozdek, A. (2008) *Data Structures and Algorithms in Java*, 3rd Ed., Cengage Learning.

References

Weiss, M. A. (2007) *Data Structures and Algorithm Analysis in Java*, 2nd Ed., Pearson Education.

Goodrich, M.T. and Tamassia, R. (2011) *Data Structures & Algorithms in Java*. 5th Ed., John Wiley.

Sahni, Sartaj (2000) *Data Structures, Algorithms, and Applications in Java*, McGraw-Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to equip students with fundamental database concepts. It provides students with the general knowledge of database architecture and technology. It helps them to understand the database technology potentials and to design, develop, implement, and administrate a database system of considerable complexity. It also provides students with the fundamental knowledge to evaluate various database management systems of different data models against organisation needs and make the appropriate selection for an organisation.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- demonstrate understanding of the basic concepts of database systems
- acquire a good understanding of the architecture and functioning of database management systems, as well as to be able to use the associated tools and techniques;
- understand and apply the principles and practices of good database design and analysis;
- recognise the direction of database technology and their implication so as to manage and plan database system developments.
- appreciate development of database technologies for lifelong learning, e.g., web databases;

Indicative Contents

- **Basic Concepts of Database System**
Database and its applications; DBMS design objectives and its components; ANSI/SPARC three-level system architecture; Data independence.
- **Database Design**
Entity-relationship model; Functional dependencies; Normalisation.
- **Relational Data Model**
Relational structure; Relational languages: Relational algebra, Relational calculus, SQL; Relational constraints: Entity constraints, Referential integrity constraints and foreign keys.
- **File Structures and Physical Database Design**
File organisation; Indexing and hashing.
- **Application Design and Query Processing**

Relational view definition and management; Equivalence of query expressions, Estimation of query-processing cost, join strategies; Embedded SQL.

- **Implementation Issues**

Buffer management; Transaction processing; Concurrency control; Crash and recovery; Security and integrity.

Teaching/Learning Approach

Lectures will emphasise the technical/practical aspects of database design and development. They are intended to equip the student with knowledge and practical experience on the real-life/industrial database application development. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of some concepts.

Tutorials will provide students with the opportunity to deepen and consolidate their understanding of the concepts taught in lectures. They will also help students to apply the theories to the analysis of real-life issues in developing database systems and enhance their knowledge and skills in operating database systems using database management system tools. The activities in tutorials may include exercises, student presentations, and discussions of problems.

Assessment Approach

A variety of assessment tools might be used, such as presentations, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including critical thinking, analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Coronel, C., Morris, S. and Rob, P. (2011) *Database systems: design, implementation & management*, 9th Ed., Cengage Learning.

References

Mannino, M. V. (2007) *Database design, application development, & administration*, 3rd Ed., McGraw-Hill.

Date, C. J. (2007) *An introduction to database systems*, 7th Ed., Addison Wesley.

Post, G. V. (2005) *Database management systems: designing & building business applications*, 3rd Ed., McGraw-Hill.

Adamski, J. J. and Finnegan, K T. (2010) *New perspectives on Microsoft Access 2010, comprehensive*, 1st Ed., Course Technology.

Perry, J. P. and Post, G. (2007) *Introduction to ORACLE*, Pearson.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject aims to equip students with the fundamental ideas of discrete mathematics, such as formal mathematical reasoning techniques, basic counting techniques and their applications; and to help students to attain the mathematical knowledge and reasoning skills required in the field of computer science.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- grasp the basic concepts of discrete mathematical structures.
- acquire enough mathematical knowledge and reasoning skills to apply various discrete mathematical techniques to solve problems in computer science applications.
- think critically and creatively to provide solutions to the discrete mathematics related problems.

Indicative Contents

- **Logic and Proofs**
Propositions; Conditional propositions and logical equivalences; Quantifiers; Proofs; Resolution proofs; Mathematical induction.
- **Sets, Relations and Functions**
Sets; Number systems; Relations; Equivalence relations; Functions.
- **Counting Methods**
Basic principles; Permutations and combinations; Algorithms for generating permutations and combinations.
- **Graphs and Trees**
Paths and cycles; Hamiltonian cycles and the Travelling Salesperson Problem; Shortest-path algorithms; Representations of graphs; Isomorphism of graphs; Planar graphs. Terminology and characterisations of trees; Spanning trees; Minimal spanning trees; Binary trees; Tree traversals; Decision trees and the minimum time for sorting; Isomorphism of trees.
- **Basic Network Problems**
Network flows; Maximal-flow minimum-cut problem; Minimal-cost flow problem; Applications, e.g., network design, transportation problem.
- **Boolean Algebras and Combinatorial Circuits**

Combinatorial circuits and its properties, Boolean algebras, Boolean functions and synthesis of circuits.

Teaching/Learning Approach

Concepts will be taught mainly through lectures in order to develop students' discrete mathematical techniques and reasoning skills. Exercises will be carried out in tutorials to illustrate and reinforce the concepts, techniques and skills in discrete mathematics.

Assessment Approach

A variety of assessment tools will be used, including tutorial exercises, programming assignments, tests and an examination, to develop and assess students' critical and creative thinking as well as mathematical reasoning and problem solving skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Rosen, K. H. (2007) *Discrete mathematics and its applications*, 6th Ed., McGraw Hill.

References

Epp, S. S. (2011) *Discrete mathematics with applications*, 4th Ed., Cengage Learning.

Hunter, D. (2012) *Essentials of discrete mathematics*, 2nd Ed., Jones & Bartlett Learning.

Johnsonbaugh, R. (2009) *Discrete mathematics*, 7th Ed., Pearson.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2042 Computer Programming
Assessment	60% coursework 40% examination

Aims

This subject aims to introduce students the basic elements of object-oriented programming. It teaches students how to design, develop and program computer systems using a high-level and object-oriented programming language such as C++ or Java. The subject also familiarises students the tools that streamline object-oriented development. In addition, this subject helps students develop their critical and creative thinking for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the essential concepts of object-oriented technology and carry out the object-oriented approach for programming
- design object-oriented programs using object-oriented modeling techniques
- use an object-oriented programming language to solve computer problems and build computer systems
- implement graphical user interface and event handling in an object-oriented fashion
- build computer systems in groups and develop group work
- work responsibly, effectively and appropriately as an individual and as part of group efforts

Indicative Contents

- **Basic Principles**
Object-oriented (OO) programming; Concept of objects and classes; Correspondence between software objects and real-world objects; Concept of class hierarchies; Object-oriented modeling; Unified Modeling Language (UML).
- **Programming Basics**
Program types; Source files and class files; Packages; Basic OO program components.
- **Language Fundamentals**
Identifiers; Variables; Values; Data types and operators; Arrays; Strings; Control structures; Classes and objects; Data abstraction.

- **Classes**
Constructors and destructors; Methods; Attributes; Class and member scope; Library classes; Programmer-defined classes; “Has-a” relationships; Encapsulation; Data hiding and protection.
- **Inheritance, Interfaces, and Abstract Classes**
“Is-a” relationships and inheritance; Overriding of methods; Polymorphism; Run-time binding; Abstract classes and methods; Multiple inheritance and templates in C++; Interfaces in Java.
- **Graphics and Event Handling**
AWT; Swing; Event-driven programming; Components and containers.

Teaching/Learning Approach

This subject emphasises both the conceptual elements in computer programming and practical experiences. A high-level and object-oriented programming language, such as C++ or Java, will be used for illustration purposes.

Lectures will deliver subject materials like object-oriented programming concepts and techniques that will be practiced and reinforced during the tutorials. Activities in tutorials will include group discussions, presentations of object-oriented programming cases and development of solutions to some object-oriented programming problem sets. Group projects will be given to provide students hands-on development experience.

Assessment Approach

A variety of assessment tools including object-oriented design and programming assignments, group project(s), test(s) and an examination are designed to assess students’ achievement of the subject intended learning outcomes as well as their generic skills, including critical and creative thinking, problem-solving and analytical skills, and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Deitel, P. and Deitel, H. (2011), *Java How to program*, 9th Ed., Prentice Hall.

References

Booch, G., Rumbaugh, J. and Jacobson, I. (2005), *The unified modeling language user guide*, 2nd Ed., Addison Wesley.

Deitel, P. and Deitel, H. (2011), *C++ How to program*, 8th Ed., Prentice Hall.

Liang, Y. D. (2010), *Introduction to Java programming: comprehensive version*, 8th Ed., Prentice Hall.

Wu, C. T. (2010), *An introduction to object-oriented programming with Java*, 5th Ed., McGraw-Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject introduces the fundamental concepts and techniques of electrical and electronic circuit analysis to students. It develops students' skills in analysing the basic direct-current and alternating-current circuits and applying the circuits. In addition, it helps students understand the principles and applications of electrical machines and diodes.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe and explain the principles of electrical and diode circuits
- apply analytical techniques to solve simple problems of electrical and diode circuits
- analyse the functions and applications of electrical machines and diodes
- carry out independent investigation in an improvised environment

Indicative Contents

- **Direct Current Circuits**
Introduction to electric circuits; Potential and potential difference; Charge and flow of charge; Voltage and Current as two basic variables; Ohm's law; Resistance; Kirchhoff's current and voltage laws; Loop and node analysis; Thévenin and Norton theorems; Independent and dependent sources; Simple circuit styles: voltage divider, current divider, series and parallel circuits; Power dissipation; Source loading and maximum power transfer.
- **Capacitance, Inductance and First Order Transients**
Constitutive relations of capacitor and inductor; Brief introduction to electric and magnetic fields; Introduction to time-varying circuits; Simple RC and LC circuits; Important concept of independent state variables; First-order differential equation and transient analysis; Time domain solution and transient behaviour of first order circuits; Time constant.
- **Alternating-Current Circuits**
Average and RMS values; Phasors (rotating vectors); Steady-state analysis of circuits driven by single fixed frequency sinusoidal sources; Impedance and admittance; Phasor diagrams for simple circuits; Systematic complex number analysis; Real and reactive power; Power factor; Three-phase circuits.
- **Mutual Inductance and Transformer**

Basic coupled inductance equation; Concept of ideal transformer; Dot convention.

- **DC Motors**

Construction, motor action, operating characteristics and starting issues.

- **Instrumentation and Measurement**

Choice of measurement method; Analogue and digital instrumentals; Bridges; Measurement uncertainties.

- **Basic Diode Circuits**

I-V characteristics of general nonlinear components; Diode as specific case; Diode models; Diode applications.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Laboratory sessions may be arranged to stimulate students' interests or their awareness of practical implications of some concepts. Worksheets may also be used in tutorials to help students practicing and applying their knowledge in electrical and electronic engineering.

Assessment Approach

A variety of assessment tools will be used, including written reports, assignments, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Rizzoni G. (2007) *Principles and applications of electrical engineering*, 5th Ed., McGraw-Hill.

References

Boylestad, R.L. and Nashelsky, L. (2002) *Introduction to electricity, electronics, and electromagnetics*, 5th Ed., Prentice Hall.

Floyd, T.L. (2010) *Electronics fundamentals: Circuits, devices and applications*, 8th Ed., Prentice Hall.

Hughes, E. (2008) *Hughes electrical and electronic technology*, 10th Ed., Prentice Hall.

Kerns, D. V. and Irwin, J. D. (2004) *Essentials of electrical and computer engineering*, 1st Ed., Prentice Hall.

Goody, R. W. (2001) *MicroSim PSpice for Windows Vol. 1: DC, AC, and Devices & circuits*, 3rd Ed., Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to equip students with the extensive knowledge in product design and development processes, including product planning, design problem formulation, concept design, configuration design, parameter design, and detail design. In addition, this subject will familiarise students with the data and information flow in design process, design solution generation methods, and the verification and validation of the generated design solution in each design process. Furthermore, this subject will equip students with the knowledge in selection of materials and manufacturing processes for product design and development and to provide students with the knowledge in design for X, human factors/ergonomics, product safety and reliability in product design and development.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- search for design related/needed data, information and knowledge for decision-making
- comprehend and select appropriate design process for different design problems
- apply the design solution generation methods in different design processes and product development
- select materials and manufacturing processes for product design and development
- comprehend the design for X, human factors/ergonomics, product safety and reliability and appreciate common engineering components in product design and development

Indicative Contents

- **Design Processes**
Product planning; Design problem formulation; Concept design; Configuration design; Parametric design; Detail design; Product testing; Product rapid prototyping.
- **Design Solution Generation in Design Process**
Types of design: Variant design, adaptive design, original design, part, assembly and product design, concept design, configuration design, parametric design, detail design; Design solution generation and its needed input and output; Solution evaluation, verification and validation.
- **Materials and Manufacturing Processes**
Product materials; Material selection: Constraints in selection of materials due to strength, weight, cost, durability, etc.; Product manufacturing processes: casting, injection molding, extrusion, sheet molding, etc.; Manufacturing process selection: materials, product shapes, cost, etc.

- **CAD and CAE Applications in Engineering Design**

Geometry representation: Wireframe modeling, surface modeling and solid modeling; Product structure modeling; Design solution evaluation by CAE technology.

- **Design for X**

Design for manufacturing; Design for X: failure, tolerance and environment; Design for safety and reliability; Human factors/Ergonomics.

- **Common Engineering Components**

Overview of common engineering components (e.g. fasteners, screws, bolts and nuts); Calculation of stress areas in threads; Applications of power transmission components, gears, bearings and seals.

Teaching/Learning Approach

The subject will be delivered mainly through lectures, tutorials and projects. Lectures will be used to deliver the fundamental knowledge related to product engineering design and development. Tutorials and case studies will be used to illustrate the application of fundamental knowledge to practical situations.

Projects will be used to relate the concepts to practical applications and students will be exposed to the hands-on practices, proper use of equipment and application of analytical skills on interpreting experimental results.

Assessment Approach

Examination is adopted to assess students on the overall understanding and the ability of applying the concepts. It is supplemented by continuous assessment including tests, projects, assignments and study report(s). The continuous assessment is aimed at enhancing the students' comprehension and assimilation of various topics of the syllabus.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Pahl, G. and Beitz, W. (2007) *Engineering design-A systematic approach*, Springer.

Otto, K. N. and Wood, K. L. (2001) *Product design: techniques in reverse engineering and new product development*, Prentice Hall.

Dieter, G. E. (2009) *Engineering design*, McGraw-Hill International Editions.

Eggert, R. J. (2005). *Engineering design*. Prentice Hall.

Fuh, J. Y. H., Zhang, Y. F., Nee, A. Y. C. and Fu, M. W. (2004) *Computer-aided injection mold design and manufacture*, Marcel Dekker, Inc.

Wickens, C. D., Lee, J. D, Liu, Y., Sallie, E. and Becker, G. (2004) *An Introduction to Human Factors Engineering*, Prentice Hall.

Kroemer, K., Kroemer, H. and Kroemer-Elbert, K. (2001). *Ergonomics: how to design for ease and efficiency*, Prentice Hall.

Amirouche, F. (2004) *Principles of computer-aided design and manufacturing*, Prentice Hall.

Wickens, C. D. and Hollands, J. G. (2000) *Engineering psychology and human performance*, Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject enables students to realise the impact of the development of engineering materials on human civilisation. In addition, it helps students to establish a broad knowledge base on the structure and properties of materials for solving engineering problems. Furthermore, this subject can help students understand the applications and selection of engineering materials based on the consideration of properties, cost, ease of manufacture, environmental issues and their service performance.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the underlying physical principles that govern materials properties
- comprehend the importance of materials in engineering and society
- apply the knowledge of materials science to analyse and solve basic engineering problems related to stress, strain and fracture of materials
- select appropriate materials for various engineering applications taking into consideration of issues in cost, quality and environmental concerns

Indicative Contents

- **Introduction**
Historical perspective; Evolution of engineering materials; Materials science and engineering; Classification of materials.
- **Atomic Structure and Structures of Materials**
Atomic structure; Bonding forces and energies; Primary interatomic bonds and secondary bonding; Crystalline and non-crystalline materials; Phase diagram and microstructure of alloys.
- **Electrical and Optical Properties of Materials**
Conductors and insulators; Semi-conductor materials; N-type and P-type semiconductors; P/N junction; Light interactions with materials; Light emitting diode (LED) and photovoltaics; Light propagation in optical fibers; Liquid crystal; Photoelasticity.
- **Mechanical Properties of Materials**
Concept of stress and strain; Stress-strain behaviour; Direct stress and strain in simple structures; Torsional formula; Elastic and plastic properties of materials; Concepts of dislocations and

strengthening mechanisms; Tensile properties; Elastic recovery after plastic deformation; Hardness; Stress concentration; Impact energy, Fracture toughness; Design and safety factors.

- **Introduction to Failure Analysis and Prevention**

Fundamentals of fracture: ductile, brittle, fatigue and creep; Corrosion; Nondestructive testing; Techniques for failure analysis and prevention.

- **Selection of Engineering Materials**

Characteristics of metallic, polymeric, ceramic, electronic and composite materials; Economic, environmental and recycling issues.

Teaching/Learning Approach

The subject will be delivered mainly through lectures, tutorials, case studies and laboratory work. Practical problems and case studies of material applications will be raised as a focal point for discussion in tutorial classes. Laboratory sessions will be used to illustrate and assimilate some fundamental principles of materials science. The subject will also focus on developing students' problem solving skills.

Assessment Approach

A variety of assessment tools will be used. The assignments are designed to reflect students' understanding of the subject and to assist them in self-monitoring of their progress. The laboratory report is designed to assess the capability of students in analysing and reporting experimental data. The test and examination are for determining students' understanding of key concepts as well as for assessing their achievement of the learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Smith, W. F. (2006) *Foundations of materials science and engineering*, McGraw – Hill International Edition.

Callister, W. D. Jr. (2010) *Materials science and engineering*, 8th Ed., John Wiley & Sons.

References

Callister, W. D. Jr. and Rethwisch, D. G. (2008) *Fundamentals of materials science and engineering: an integrated approach*, John Wiley & Sons.

Mangonon, P. L. (1999) *The principles of materials selection for engineering design*, Prentice Hall.

Materials world (Magazine of the institute of materials, minerals and mining)

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject equips students with basic principles of mathematics used in various engineering disciplines. This subject will help students to develop their analytical and problem solving skills and apply appropriate mathematical techniques to solve fundamental engineering problems.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the fundamentals and principles of linear algebra, advanced calculus and complex numbers
- apply the appropriate mathematical methods to solve engineering problems quantitatively
- search for useful information in solving problems
- apply mathematical reasoning to analyse and solve problems in engineering

Indicative Contents

- **Complex Numbers**
Basic arithmetic; Complex exponential functions; Geometric representation; n -th roots.
- **Functions of Several Variables**
Partial differentiation; Chain rule; Total differential; Implicit functions; Taylor's theorem; Maxima and minima; Lagrange multiplier.
- **Ordinary Differential Equations**
First and second order differential equations; Laplace Transforms; Convolution theorem; Applications to mechanical vibrations and simple circuits.
- **Linear Algebra**
Review on matrices and determinants; Vector spaces; Eigenvalues and eigenvectors; Normalisation and orthogonality.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of some concepts. Exercises may

also be used to develop students with an integrated knowledge for applying the mathematical concepts and techniques.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. The activities in tutorials will normally include student presentations and discussions of problem sets and case studies.

Assessment Approach

A variety of assessment tools will be used, including assignment(s), test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Chan, C. K., Chan, C.W. and Hung, K. F. (2010) *Basic engineering mathematics*, 3rd Ed., McGraw Hill.

References

Zill, D. G., Wright, W. S. and Cullen, M. R. (2011) *Advanced engineering mathematics*, 4th Ed., Jones and Bartlett Publishers.

Jeffrey, A. (2002) *Advanced engineering mathematics*, 3rd Ed., Harcourt/Academic Press.

Kreyszig, E. (2011) *Advanced engineering mathematics*, 10th Ed., Wiley.

George, T. B., Weir, M. D. and Hass, J. (2010) *Thomas' Calculus*, 12th Ed., Addison-Wesley.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN1045 Calculus
Assessment	40% coursework 60% examination

Aims

This subject equips students with analytical skills to understand the principles of static and dynamic systems. It provides practice in modelling and analysing simple load bearing system and provides both mathematical and graphical frameworks for force and stress analysis.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- explain the basic principles and concepts of mechanics
- solve the forces and moments in a simple structure
- comprehend the concept and use of stress and strain in simple loading systems
- recognise the properties of area and mass
- formulate and solve simple dynamic problems
- communicate effectively with the support of mathematical and graphical skills

Indicative Contents

- **Statics**
Basic concepts of mechanics; Scalars and vectors: Vector algebra and components; Position and unit vectors; Two- and three-dimensional force systems; Moment of a force about a point; Moment of force about a line; Equilibrium of a particle and the associated free-body diagrams; Equilibrium of a rigid body and the associated free body diagram; Two and three force members equilibrium in three dimensions; Simple trusses: the method of joints, the method of sections, zero-force members; Internal forces developed in structural members; Theory of dry friction; Systems with friction; Wedges; Belt friction; Rolling resistance.
- **Stress Systems**
Stress and strain; Shear stress and shear strain; Direct stress in simple structures; Shear force, bending moment and distributed load; Relations between distributed load, shear force and bending moment; Flexural formula; Torsion formula; Factor of safety.
- **Equivalent Systems**
Centre of gravity and centroid; Moment of inertia of areas/masses; Parallel-axis theorem for an area; Radius gyration of an area; Moments of areas/masses; Product of inertia for an area/mass; Principles of virtual work.
- **Dynamics**

Kinematics and kinetics of particles; Rectilinear motion; Plane curvilinear motion, Relative motion, Newton's laws; Calculus-based Newtonian mechanics, application of impulse, momentum, work and energy, etc.; Conservation law; Gravitation field; Systems of particles; Collisions; Rigid body rotation; Angular momentum.

▪ **Oscillation and Wave Motion**

Oscillations and simple harmonic motion; Pendulum; Longitudinal and transverse waves; Travelling wave; Doppler effect; Acoustics.

Teaching/Learning Approach

Lectures will deliver the fundamental knowledge of engineering mechanics. Tutorials will illustrate the application of fundamental knowledge to practical situations. Laboratories will relate the concepts to practical applications and students will be exposed to hands-on experience, proper use of equipment and application of analytical skills on interpreting experimental results.

Assessment Approach

A variety of assessment tools will be used, including assignments, laboratory report(s), test(s) and an examination so as to develop and assess students' achievement of the subject intended learning outcomes as well as communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Hibbeler, R. C. (2010) *Engineering mechanics: dynamics*, Prentice Hall.

Hibbeler, R. C. (2010) *Engineering mechanics: statics*, Prentice Hall.

References

Beer, F., Johnston, E. R., Mazurek, D., Cornwell, P., and Eisenberg, E. (2010) *Vector mechanics for engineers: statics and dynamics*, McGraw-Hill.

Meriam, J. L. and Kraige, L. G. (2007) *Engineering mechanics: dynamics*, Wiley.

Meriam, J. L. and Kraige, L. G. (2007) *Engineering mechanics: statics*, Wiley.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2231 General Biochemistry
Assessment	50% coursework 50% examination

Aims

The subject is intended to provide students with an understanding of the fundamental principles of instruments and techniques used in biochemistry and molecular biology.

The subject team is required to refer to the relevant programme curriculum map(s) for the role of this subject in helping students achieve programme-level intended learning outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the basic principles and limitations of various biochemical techniques on purifying and analysing biomolecules and be able to choose the purification process for various biomolecules
- appreciate and interpret experimental data of some biochemical processes
- understand the applications of various biological techniques including fluorescence, luminescence, Polymerase Chain Reaction (PCR), gel electrophoresis to achieve measurement or detection in biological experiments

Indicative Contents

- **Sample preparation from cells for biotechnology process**
Cell disruption; Buffer; Dialysis; Concentration methods; Measurement of proteins and nucleic acids; Centrifugation and subcellular fractionation
- **Introductory DNA technology**
DNA restrictive digestion and sequencing; Polymerase Chain Reaction (PCR); brief introduction of real time PCR and DNA microarray; Genes transfection; Luminescence and chemiluminescence; Luciferase, green fluorescent protein; biosensors and their uses
- **Principles and practices of chromatography, electrophoresis and spectroscopy**
Gas chromatography, HPLC, separation of biomolecules; Visible, UV and IR, fluorescence; Flow cytometry; Electrophoresis: principles and general techniques; western blotting

Teaching/Learning

Lectures will be used to introduce the basic theoretical principles. Emphasis is put on the application of these techniques, rather than memorising the detailed principles. Tutorials and assignments are used to teach students how to appreciate various types of analyse sand to interpretate experimental data. Practicals and site visits will be used to allow students to gain hands-on experience and exposure in

fundamental biochemical techniques. Laboratory reports are used to teach students proper write up of scientific reports and to enhance communication skills in science.

Assessment Approach

A variety of assessment tools will be used, including written assignment or presentations, written reports, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the teaching plan. The subject intended learning outcome(s) assessed in each coursework component will be explained to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Wilson, K. and Walker, J. (2000), *Principles and techniques of practical biochemistry*, 5th Ed., Cambridge.

References

Boyer, R. F. (2000), *Modern experimental biochemistry*, 3rd Ed., Benjamin/Cummings.

Holme, D. J. & Peck, D. (1998), *Analytical biochemistry*, 3rd Ed., Longman.

Wilson, K. & Walker, J. (2005), *Principles and techniques of biochemistry and molecular biology*, 6th Ed., Cambridge.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN1109 General Biology or CCN2233 Human Biology I
Assessment	50% coursework 50% examination

Aims

This subject equips students with the knowledge on the molecular basis of cellular structures and functions. Lectures focus on the biochemical function of cellular organelles, as well as the interactions of the cells with the extracellular environment. It provides an insight of how organelles maintain the homeostasis of the cell, and how various cells interact and maintain the organisms and hence the preservation of our internal environment.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the structural organisation of eukaryotic cells, including an introduction to the major types of subcellular organelles, their structures and functions
- relate the properties and functions of plasma membrane to its architecture
- explain the phenomena that are essential to cellular activities: energy transformations and the use of enzymes to catalyse chemical reactions
- integrate the working principles of different types of microscopy commonly used in cell biology and be able to apply the techniques in different situations
- identify different signaling molecules involved in controlling a eukaryotic cell cycle

Indicative Contents

- **Introduction to Cells and Chemistry of Cells**
Prokaryotes and eukaryotes; Importance of biomolecules in cells, bioenergetics and catalysis; Visualisation of cells and subcellular structures with different types of microscopy.
- **Structure and Function of Cell Organelles**
The architecture of plasma membrane structure; Functions and transport across membrane; Internal membranes and cell energetic; cytoskeleton (actin and myosin, tubulin and microtubules) and cell movement; Function of endoplasmic reticulum, ribosomes, Golgi apparatus, mitochondrion, enzymes, motile structures (cilia, flagella and centromeres) and the nucleus.
- **Cell Cycles and Development of Cell Specificity in Eukaryotes**
Cell cycle: mitosis and meiosis; Cells in early stage of development, cell lineage and differentiation, regulation in development and differentiation.
- **Control of Cell Signalling**

Types of cell signalling; Basis and understanding of cell signalling, major types of signalling cascades.

Teaching/Learning Approach

Lectures reinforce the knowledge of cellular structures and functions. The maintenance of the integrity of cell, the interaction of cells to preserve the internal environment for the organism, and the interaction of cell with the external environment will also be introduced. Lectures will be conducted in an interesting and interactive manner, and students will be encouraged to participate in class.

Tutorials provide students with opportunities to broaden and reinforce the general knowledge obtained in the lectures. Students will be engaged in case studies, classroom activities, presentation and discussion to strengthen and backup the knowledge. Laboratories enhance the knowledge learnt in lectures / tutorials with introduction of some basic techniques of cell biology.

Assessment Approach

A variety of assessment tools including presentations, laboratories, group discussion, tests and examination will be used to assess the process of learning as well as analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the teaching plan. The subject intended learning outcome(s) assessed in each coursework component will be explained to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., Walter, P., Bray, D. and Hopkin, K. (2010) *Essential cell biology*, 3rd Ed., NY : Garland Science Pub.

Copper, G.M. and Hausman, R.E.(2009) *The cell: a molecular approach*, 5th Ed., ASM Press: Washington D.C.

References

Becker W.M., Kleinsmith, L.J. and Hardin, J. (2009) *The world of the cell*, 7th Ed., CA: Pearson/Benjamin/Cummings Int. Ed.

Davey, J. and Lord, M. (Ed.) (2003) *Essential cell biology (practical approach volume 1): Cell structure*, 1st Ed., Oxford: Oxford University Press.

Davey, J. and Lord, M. (Ed.) (2003) *Essential cell biology (Practical approach volume 2): Cell function*, 1st Ed., Oxford: Oxford University Press.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2233 Human Biology I (In order to enhance learning, it will be advantageous to students if CCN2234 Human Biology II is also taken before enrolling on CCN2260)
Assessment	100% coursework

Aims

This subject aims to provide students the basic knowledge in the science of human movement. It prepares students a good foundation in understanding the movement and function of the human body required for various health related services ranging from promotion of physical fitness, delivery of preventive health care to provision of rehabilitative services in institutional care or community-based settings. This subject also prepares students who will further their study in the relevant field of the health professions.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successful completion of this subject, students will be able to:

- recognise the biomechanics and kinesiology of the human musculoskeletal system
- understand the biomechanical properties of different tissues and structures in the musculoskeletal system
- perform basic movement analysis of normal and abnormal body motions
- identify some factors affecting physical performance
- recognise the physiological effects of exercises
- appreciate the use of movement science concepts in delivering preventive intervention, health maintenance and rehabilitative care

Indicative Contents

- **Biomechanical Terms and Basic Biomechanics**
Concept of force and its relevance to human movement; Statics and dynamics; Kinematics and kinetics
- **Biomechanics of the Musculoskeletal System**
Coordination of the muscular system; Joint integrity and mobility; Muscular analysis of the fundamental movements of major joints, e.g. hip, shoulder, elbow, knee etc.
- **Muscle Performance**
Functional role; Strength, power and endurance; Muscle tension, length/speed/tension relationship
- **Posture and Balance**
Centre of gravity; Stability; Significance of posture; Postural adaptation to external conditions

- **Human Body in Motion**

Walking gait and locomotion; Introduction to prosthetic/orthotic device for the lower limb, alignment and functional design

Teaching/Learning Approach

Both self-directed and interactive learning approaches will be adopted in this subject. Students will be required to have pre-reading before every lecture. Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Group discussions and activities will be arranged to stimulate students' interests and their awareness on practical implications of some concepts. Scientific principles will be illustrated with interactive teaching aids during lectures.

Tutorials will provide students an opportunity to deepen their understanding and further exploration on applications of theories taught. The activities in tutorials will normally include student presentations and discussions of problem sets and case studies. Experiment and laboratory work will encourage students to think critically and reinforce theoretical concepts.

Assessment Approach

A variety of assessment tools will be used, including reports, quizzes, and MCQ test(s) designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Hamilton, N., and Luttgens, K. (2008) *Kinesiology – Scientific basis of human motion*, 11th Ed., McGraw Hill.

Everett, T. and Kell, C. (2010) *Human movement – An introductory text*, 6th Ed., Elsevier Churchill Livingstone.

Oatis, C.A. (2009) *Kinesiology – The mechanics & pathomechanics of human movement*, 2nd Ed., Lippincott Williams & Wilkins.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to enable students to understand the basic principles and application of analytical chemistry, such as the sampling and separation techniques, titrimetric analysis, spectrophotometry and potentiometry. It also includes the statistical methods of data analysis and treatment. Studying the subject will also help to develop student's analytical thinking for their life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the basic concepts of analytical chemistry
- demonstrate skills in different sampling techniques
- understand the fundamental chemistry of aqueous solution and perform quantitative analysis using various titrimetric methods.
- describe the underlying principles of and distinguish various analytical instruments for UV, IR and potentiometric techniques, and apply them in industrial/testing laboratory
- recognize the advantages and limitations of each analytical method discussed
- conduct statistical analysis of data

Indicative Contents

- **Data Treatment**
Statistical treatment of data; Normal distribution; Standard deviation and standard error of mean; Determinate and indeterminate errors; Propagation of errors; Accuracy and precision; Principles of estimation of measurement uncertainty; Significant figures; Linear least squares and correlation coefficient.
- **Sampling Techniques**
Methods of sampling liquids, solutions and solids; Techniques in sample preparation.
- **Titrimetric Analysis**
Ionic equilibrium and pH; Theory of titrimetric analysis involving acid-base, oxidation-reduction, solubility equilibria, precipitation and complexometric reactions; Theory of indicators; Application of titrimetric analysis.
- **Spectrophotometric Techniques**
UV-Vis Spectrophotometry: Electromagnetic spectrum; Beer's law; Instrument components:

Radiation sources, Monochromators, and detectors; Double-beam versus single-beam instruments; Techniques in qualitative and quantitative analysis.

IR Spectrophotometry: Sample preparation, instrumentation, and application.

Potentiometry: Salt bridges and liquid junction; Reference and working electrodes; Measurement of cell potentials; The pH sensitive glass-membrane electrode; Ion-selective electrodes and their working principles, types and applications; Potentiometric titrations.

Teaching/Learning Approach

The course is composed of three parts: lectures, tutorials and laboratory sessions. Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Examples and references will be given to students wherever appropriate. Tutorials will provide students with opportunities to broaden, enlighten and reinforce the general knowledge obtained in lectures. Students will be involved in problem based activities, classroom feedback, case studies, presentations, and discussions in the tutorial to stimulate students' interests or their awareness of practical implications of various concepts. Laboratory sessions might also be used to allow students to understand, verify, and apply knowledge developed from lectures.

Assessment Approach

A variety of assessment tools will be used, including presentations, group discussions, written laboratory reports, classroom feedback, test(s) and an examination so as to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including analytical and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Skoog, D.A., West, D.M., Holler, F.J. (2004) *Fundamentals of analytical chemistry*, 8th Ed., Saunders College.

References

Christian, G. D. (2004) *Analytical chemistry*, 6th Ed., Wiley & Sons.

Higson, S. P.J. (2003) *Analytical chemistry*, Oxford University Press.

Skoog, D.A., Holler, J.F. and Crouch, S.R. (2007) *Principles of instrumental analysis*, 6th Ed., Thomas Higher Education.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject equips students with a basic understanding of building services and architectural principles governing the design of a building. It provides students with a basic knowledge on the sensitivity of human beings to their surroundings, the functions of buildings as controlled environment for human activities, and the external environmental variables which can affect the building envelope and the environmental control systems. It also develops students' ability in the appreciation of the architectural design and relevant building technology elements in conjunction with building services design requirements.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe and quantify human responses to environmental stimuli
- identify and evaluate the basic parameters for assessing environment
- carry out simple calculations related to variables describing the built environment
- integrate the architectural and building concepts with building services installations

Indicative Contents

- **Human Senses**
Sensation and stimulus; Non-linearity and power law; Subjective sensory perception; Visual sense and the eye; Aural sense and ear; Skin senses of heat and cold.
- **Outdoor and Indoor Environment**
Climate and climatic elements for building design; Thermal environment measurements; Thermal comfort; Visual environment measurement; Visual comfort and performance; Lighting criteria; Sound and noise; Aural environment measurement; Room acoustics; Indoor air quality.
- **Building Envelop and Passive Environmental Control**
Passive environmental controls and climatic design; Daylighting from windows and skylights; Noise transmission through windows and building envelop.
- **Architectural Technology and BSE Integration**
Architectural technology for commercial and residential developments; Building structural systems; Enclosure systems; Interior sub-division system; Access ceiling and flooring system; Integration of building elements with the building services installations.

Teaching/Learning Approach

Lectures and tutorials constitute the delivery of this subject. Lectures aim at delivering the basic knowledge of theories and facts which will lead to the achievement of all intended learning outcomes. Tutorials provide students with the opportunity to deepen their understanding and to enhance their problem-solving ability. Activities in tutorials normally include problem-solving exercises, case studies, and presentation, which will facilitate learning to achieve all intended learning outcomes.

Assessment Approach

A variety of assessment tools will be used, including assignments, presentations, case studies, written reports, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

A. Fry. (1988) *Noise control in building services*, 1st Ed., Pergamon Press.

ASHRAE. (2009) *ASHRAE handbook – Fundamentals (SI Edition)*, American Society of Heating, Refrigerating and Air-Conditioning Engineers.

ASHRAE. (2007) *ASHRAE standard 62—Ventilation for acceptable indoor air quality*, American Society of Heating, Refrigerating and Air-Conditioning Engineers.

CIBSE. (2003) *Code for lighting*, CIBSE.

Division of Building Science and Technology. (2003) *Building design and development in Hong Kong*, City University of Hong Kong Press.

Goldstein, E.B. (2010) *Sensation and perception*, 8th Ed., Wadsworth Cengage Learning.

HK-BEAM Society. (2010) *BEAM Plus for new and existing buildings* (free download).

Wong, W. S. (1998) *Building enclosure in Hong Kong*, Hong Kong University Press.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject aims to develop students' ability in solving computational problems arising in Quantitative Finance. It investigates solutions for interest rate valuation, bond pricing, futures contract pricing and derivatives pricing. Studying the subject will also help develop students' financial risk management skills for their life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- gain knowledge about interest rates
- understand concepts in bond pricing
- obtain concepts related to future markets and perform price evaluation for the futures
- know about options markets and perform price evaluation for the options
- perform basic operations and implement strategies in the financial markets

Indicative Contents

- **Interest Rates and Bonds**
Simple interest; Compound interest; Flat rates and internal rate of return; Annuities; Amortisation and sinking fund; Bond pricing; Bond yield; Par yield and duration.
- **Futures**
Futures markets; Using futures for hedging; Forward and future prices; Interest rate futures; Swaps.
- **Option Pricing**
Options; Properties of stock option prices; Trading strategies involving options; Put-Call parity; The Black-Scholes equations; Options on stock indices; Currencies and futures contracts.
- **Risk Management**
Stop-loss strategy; Delta hedging; Theta; Gamma.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of financial concepts and theories supported by daily life financial examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of some concepts. Worksheets may also be used to guide students through the reasoning behind more complex financial theories.

Tutorials provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught.

Assessment Approach

A variety of assessment tools will be used, including assignments, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including analytical and problem-solving skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Hull, J.C. (2011) *Fundamentals of futures and options markets*, 7th Ed., Prentice Hall.

References

Briys, E., Mai, H.M., Bellalah, M. and de Varenne, F. (1998) *Options, futures and exotic derivatives*, Wiley.

Capinski, M. and Zastawniak, T. (2003) *Mathematics for finance: An introduction to financial engineering*, Springer.

Carter, C. (2003) *Futures and options markets: An introduction*, Prentice Hall.

Hull, J.C. (2011) *Options, futures and other derivatives*, 8th Ed., Prentice Hall.

Kellison, S. G. (1991) *The theory of interest*, 2nd Ed., McGraw-Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to provide students with the conceptual framework and essential knowledge in computer systems architectures and logic design for them to understand and analyse the functions and organisations of modern digital computers. The subject also develops students with learning experience in designing and developing solutions and applications for modern digital computer systems using assembly language.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- demonstrate computers understanding of the basic principles of organisations and operations of digital computers through practising with an assembly language;
- evaluate the technical issues of digital computer systems including arithmetic logic unit, control unit, communication with peripheral devices and interrupt handling;
- develop solutions related to the organisation of digital computer systems;
- recognise and identify the developmental nature of technology related to modern digital computers

Indicative Contents

- **Computer System Components**
Interconnection structures and bus interconnections; Memory system overview; Semiconductor and cache memory; External devices; Input/Output (I/O) modules; Programmed and interrupt I/O; Direct memory access (DMA) and I/O channels.
- **Central Processing Unit**
CPU structures and functions; Boolean algebra and gate networks; Arithmetic and logic unit (ALU).
- **Data Representation and Arithmetic**
Integer representation and arithmetic; Floating-point and floating-point arithmetic.
- **Machine Instructions**
Machine instruction characteristics and types; Assembly language; Memory addressing modes; Register organisation; Instruction format; Instruction cycle and instruction pipelining; Reduced instruction set computer (RISC) architecture.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of key concepts in computer system organisation, with specific reference to current development in computer system wherever appropriate. Students are expected to obtain sufficient professionally-specific concepts, skills and knowledge on computer system organisation and architectures in lectures. Occasional group discussions might be arranged to enhance students' inter-personal and communication skills.

Tutorials provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of computer system organisation issues. The activities in tutorials normally include discussions of problems sets and solutions.

Assessment Approach

A variety of assessment tools will be used, including assignments, tests and examination designed to develop and assess students' understanding of principles of computer system organisation and architectures, evaluate students' critical and analytical ability as well as problem-solving skills in the design of computer system components.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Stallings, William (2009) *Computer Organization and Architecture: Designing for Performance*, 8th Ed., Prentice Hall.

References

Davis, Harris, and Sarah (2007) *Digital Design and Computer Architecture*, Morgan Kaufmann.

Patterson, David A and Hennessy John L. (2008) *Computer Organization and Design: The Hardware Software Interface*, 4th Ed., Morgan Kaufmann.

Tanenbaum, Andrew S. (2006) *Structured Computer Organization*, 5th Ed., Prentice Hall.

Irvine, Kip R. (2010) *Assembly Language for x86 Processors*, 6th Ed., Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2041 Applied Computing
Assessment	60% coursework 40% examination

Aims

This subject equips students with some basic concepts on the use of and the application of telecommunications, systems and technology in the e-business environment. It helps students gain experiences on designing e-business solutions and web sites by means of software packages, web authoring tools, and web development tools available in the software market.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the strategies and approaches for e-business process engineering
- understand the basic methods and procedures in planning and controlling the development and modification of an e-business system in an organisation;
- understand an e-business system, its components and the interactions among them with respect to the organisation activities concerned;
- apply the required hardware, software, telecommunications and security support to the e-business processes in an organisation;
- design e-business application

Indicative Contents

- **Overview of e-business**
E-commerce vs e-business; Internet, intranet and extranet; e-Business models; Information systems in business; Intra-networking and inter-networking e-business enterprises; Industrial applications of e-business system.
- **Software Solution for e-business**
Web programming languages; Searching mechanism; Software agents; Multimedia on the web and webcasting; e-business solutions; Data integration with XML.
- **Social Infra-structure for e-business**
E-business planning, strategy and management; e-business evaluation.
- **Technical Infra-structure for e-business**
E-business development; Accessing devices and channels; Electronic delivery; Frontend and

backend computing infra-structure; Communication protocols; Network and data security; Authentication concepts, Techniques and applications.

- **e-business System Design and Environments**

Web site design; Web database design; System integration; Economical environment of e-business; Social environment of e-business; Political environment of e-business; Ethical environment of e-business.

Teaching/Learning Approach

Lectures will emphasise technical and practical aspects of e-business. In addition, students will be required to learn the case studies and example problems concerned. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of the concepts taught. Individual hands-on lab exercises will be used to facilitate students on their learning, stimulating their logical and analytical thinking abilities in problem solving.

Assessment Approach

A variety of assessment tools will be used, including end-of-chapter exercises, written assignments, lab exercises, tests and examinations, designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Chaffey, D. (2009) *E-business and e-commerce management: strategy, implementation and practice*, 4th Ed., Prentice Hall.

References

O'Brien, J. A. (2011) *Management information systems*, 10th Ed., McGraw Hill.

Bharat, B. (2009) *Electronic commerce: framework, technologies, and applications*, 3rd Ed., McGraw Hill.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject aims to introduce some elementary techniques of statistics particularly useful in economic and social investigations. These include the fundamental concepts of time series, index numbers, sample survey methods and the use of statistical packages for the presentation and processing of data. The subject also helps students develop their critical thinking and analytic skills for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the elementary time series analysis techniques and perform statistical forecasting
- perform index number computation and assess critically its uses
- identify the major social and economic indicators and assess critically their potential applications
- understand the procedures for carrying out statistical sample surveys including sampling design, questionnaire design, data collection and handling of non-response and bias
- develop the abilities in data presentation using statistical packages
- develop skill and abilities in interpreting computer output

Indicative Contents

- **Time Series**
Moving averages; Centered moving averages; Exponential smoothing and least squares; Isolation of trend, cycles, seasonal and residual variation using seasonal decomposition method; Residual component analysis; Elementary forecasting.
- **Index Numbers**
Uses of index numbers; Simple and weighted average of price and quantity relatives; Construction of simple aggregate indices including Paasche, Laspeyres and Fisher indices; Time series deflation; Fixed and chain base relatives; Changing base; Examples of index numbers in social and economic.
- **Survey Method**
Overall planning of a survey operation; Sampling frames; Design and selection of samples; Probability sampling designs; Design of questionnaires; Methods of data collection; Sources of errors in surveys; Random-response model.
- **Data Presentation using Statistical Packages**
Types of data; Scales of measurement; Summarising univariate and bivariate data; Interpretation of

frequency tables, charts and descriptive statistics; Correlation and regression; Cross-classification tables; Tests of independence and goodness of fit.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of the indicative contents supported by daily life examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of some concepts. Tutorials will provide students with opportunities to deepen their understanding of the concepts taught in the lectures. Worksheet exercises may also be used to guide students through the reasoning behind more complex problems. Students are required to reinforce their knowledge through assignments.

Assessment Approach

A variety of assessment tools will be used, including assignments, test(s) and an examination designed to develop and assess students' achievement of subject expected learning outcomes as well as analytical skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Bowerman, B. L. and O'Connell, R. (2005) *Forecasting, time series, and regression*, 4th Ed., Cengage Learning.

Scheaffer, R. L., Mendenhall III, W. and Ott, L. (2012) *Elementary survey sampling*, 7th Ed., Thomson.

Thompson, S. K. (2002) *Sampling*, 2nd Ed., Wiley.

Verzani, J. (2005) *Using R for introductory statistics*, 1st Ed., Chapman & Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject equips students with a basic knowledge on the major design features, operating characteristics and functions of electrical equipment used in building services. Students studying this subject will be able to familiarise themselves with technical data, regulations, standards and guidance notes prepared by statutory bodies for the design of reliable, safe and efficient electrical power distribution, vertical transportation and lighting systems in buildings.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe efficient, safe and high quality power distribution systems for domestic and commercial buildings
- determine appropriate settings, ratings or sizes of electrical equipment or components in low-voltage distribution systems
- carry out planning of different vertical transportation systems for a building
- design interior lighting and exterior lighting according to lighting requirements and operating characteristics of light sources

Indicative Contents

- **Power Distribution in Buildings**
System planning; Incoming supply arrangement; Economics of HV/LV distributions; Tariffs, maximum demand, load factors and diversity; Earthing systems; Applications of standby generator sets and uninterruptible power supplies.
- **Requirements for Safe Design**
Overview of Supply Rules and Regulations; Electric shock, overcurrent and earth fault protection; Fuse, MCB, MCCB, ACB design and selection criteria; Co-ordination of protection systems; Cable and wiring systems design.
- **Vertical Transportation Systems**
Lift; Hoist and escalator drives; Safety requirements and drive characteristics; Grade of service and round trip time.
- **Lighting**

Characteristics of light sources; Classification of luminaires; Lighting control; Interior lighting design; Glare index calculation; Colour rendering; Utilisation of daylight; Exterior lighting design.

Teaching/Learning Approach

Lectures and tutorials will constitute the delivery of this subject. Lectures aim at delivering the basic knowledge of theories and facts which will lead to the achievement of all intended learning outcomes. Tutorials will provide students with the opportunity to deepen their understanding and to enhance their problem-solving ability. Activities in tutorials will normally include problem-solving exercises, case studies, and presentation, which will facilitate learning to achieve all intended learning outcomes.

Assessment Approach

A variety of assessment tools will be used, including assignments, presentations, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Barrie, R. (2005) *Design of electrical services for buildings*, 4th Ed., Spon Press.

Stokes, G. (2003) *Handbook of electrical installation practice*, 4th Ed., Blackwell Science.

Barney, G. C. (2003) *Elevator traffic handbook: theory and practice*, Spon Press.

Coaton, J. R. and Marsden, A. M. (1997) *Lamps and lighting*, 4th Ed., Wiley.

Hall, F. and Greeno, R. (2009) *Building services handbook*, 5th Ed., Butterworth-Heinemann.

Pritchard, D. C. (1999) *Lighting*, 6th Ed., Longman.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2246 Basic Electricity and Electronics
Assessment	40% coursework 60% examination

Aims

This subject introduces the operating principles of electronic devices and circuits to students. It develops students' ability for solving problems in electronic circuits and equips students with skills for experimentation on electronic circuits. Several fundamental classes of electronic devices and circuits will be covered, including diodes and diode circuits, bipolar junction transistor (BJT) and its amplifiers, metal-oxide-semiconductor field-effect transistor (MOSFET) and its amplifiers, and operational amplifiers. An introduction to frequency domain analysis will also be given.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- acquire basic understanding of fundamental circuit theory
- comprehend the basic operating principles of several fundamental classes of electronic devices
- apply analytical techniques to solve simple problems in electronic devices and circuits
- acquire essential skills in performing laboratory experiments on electronic circuits

Indicative Contents

- **Diodes and Diode Circuits**
Semiconductor basics; P-N junction basics; Input, output and transfer characteristics of practical diodes; Biasing through load line concept; Practical diode circuits: rectifier circuits, clipping and clamping circuits.
- **Transistors and Biasing Circuits**
Bipolar junction transistor (BJT); DC biasing and analysis of BJT circuits; Metal-oxide-semiconductor field-effect transistor (MOSFET); DC biasing and analysis of MOSFET circuits; Load line and graphical large-signal analysis; Transistor amplification concept.
- **Transistor Amplifiers and Small-signal Concepts**
Basic BJT and MOSFET amplifier configurations: common emitter and common source configurations; Small-signal models and parameters; Concept of transconductance; Voltage gain; Input and output impedances; Introduction to loading effect.
- **Operational Amplifiers**

Ideal operational amplifier; Defining characteristics (i.e. infinite gain and infinite input resistance); Basic op-amp circuits: inverting amplifier, non-inverting amplifier, summing amplifier, difference amplifier, integrating amplifier and differentiating amplifier; Specific op-amp circuits: instrumentation amplifier; Current-to-voltage converter and voltage-to-current converter; Design applications.

▪ **Introduction to Frequency Domain Analysis**

Transfer functions from ac circuits in terms of $j\omega$; Introduction to frequency domain, from $j\omega$ to s ; General s -domain transfer functions; Simple first-order filter circuits; Concepts of pole, corner frequency and bandwidth; Use of $j\omega$ axis for magnitude and phase plots for sinusoidal driving sources; Extension to asymptotic plots and Bode plots.

Teaching/Learning Approach

The subject will include lectures, tutorials and laboratory sessions. Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Tutorials will provide students with the opportunity to deepen their understanding and to explore further applications of theories taught. Laboratory sessions will help students acquire hands-on experience in using electronic equipment and apply what they have learnt in lectures/tutorials to experimentally validate the theoretical investigations.

Assessment Approach

A variety of assessment tools will be used, including written reports, assignments, test(s) and examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Donald, A. N. (2010) *Microelectronics: circuit analysis and design*, 4th Ed., McGraw-Hill.

References

Rizzoni, G. (2007) *Principles and applications of electrical engineering*, 5th Ed., McGraw-Hill.

Hayt, W. H., Kemmerly, J. E. and Dubin, S. M. (2007) *Engineering circuit analysis*, 7th Ed., McGraw-Hill.

Robbins, A. H. and Miller, W.C. (2007) *Circuit analysis: theory and practice*, 4th Ed., Cengage Learning.

Goody, R. W. (2001) *MicroSim PSpice for Windows Vol. 1: DC, AC, and devices & circuits*, 3rd Ed., Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject equips students with the concepts, essential fundamental knowledge and basic techniques for engineering fundamental matters, including Engineering Drawing, Computer-Aided Design (CAD) and Drafting, and Basic Scientific Computing. It provides students with an opportunity to learn and practice using some common engineering-specific software in CAD, simulation software and computing software.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- explain the principles and conventional representation of engineering drawings according to engineering standards
- present engineering drawing by using drawing instruments and engineering-specific software in CAD for engineering communication and documentation
- use CAD application, and modeling and simulation software in simple engineering problems
- apply scientific computing software for basic computing, visualisation and programming in science and engineering

Indicative Contents

- **Engineering Drawing**
Principles of orthographic projection; Sectioning; Dimensioning; Sketching; General tolerances and surface finishes; Conventional representation of screw threads and fasteners; Types of drawings including part drawing and assembly drawing.
- **CAD and Drafting**
Introduction to CAD; 2D drawings; General concepts on 3D computer modeling; Parametric feature based solid modeling; Construction and detailing of solid features; Solid model modification and its limitations; Generation of 2D drawings from 3D parts and assemblies; Drawing annotation including dimensioning, tolerancing, surface finishing and part list.
- **Electrical Drawing**
Wiring diagram and wiring table for electronic and electrical installation; Functional representation of circuit; System block diagram; Electrical and electronic device symbols and layout; Architectural wiring diagram with reference to the architectural symbols for electrical drawings in Hong Kong and international standards.

- **Electronic Design Automation**

Introduction to electronic design automation software; Circuit schematics capture and representation; Placement of components, capturing, annotation and labelling; Net list; Electronic parts library; Symbols.

- **Basic Scientific Computing**

Introduction to scientific computing software; Interactive calculations; Random number generators; Variables; Vectors, matrices and string; Mathematical operations; Polynomial operation; File I/O functions; Basic plotting; Formatting graph, 2D and 3D plots; Annotations; Colormap; M-file programming and debugging; Scripts and functions; Logic operations.

Teaching/Learning Approach

Lectures will focus on introducing the essential concepts and concrete background knowledge for understanding key issues for engineering communication, modeling and simulation techniques of engineering problems, and the concepts and knowledge for using the computer software.

Tutorials will provide students with the opportunity to apply their knowledge gained from lectures on engineering drawing and practice using the software on engineering problems.

Assessment Approach

A variety of assessment tools will be used, including individual or group assignments, and tests to develop and assess students' achievement of the subject intended learning outcomes as well as problem solving techniques in engineering drafting and in using the computer software.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Grabowski, R. (2010) *Using AutoCAD 2010*, Clifton Park: Cengage Learning.

Howard, W. E. and Musto, J. C. (2011) *Introduction to solid modeling using SolidWorks 2010*, New York: McGraw-Hill.

IEC 61082 *Preparation of documents used in electrotechnology*.

IEEE Standard 315 / ANSI Y32.2 / CSA Z99 *Graphic symbols for electrical and electronics diagrams*.

Jensen, C. H., et al. (2008) *Engineering drawing and design*, 7th Ed., New York: McGraw-Hill Higher Education.

- Palm, W. J. (2011) *Introduction to MATLAB for engineers*, 3rd Ed., New York: McGraw Hill.
- Tront, J. G. (2007) *PSpice for basic circuit analysis*, 2nd Ed., New York: McGraw Hill.
- Wentzell, T. H., *et al.* (2004) *Machine design*, New York: Thomson/Delmar Learning.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject provides an overview of the supply, utilisation and control of electrical energy. It introduces energy and environmental issues which assist students to develop different perspectives towards electrical power generation. It also provides students with fundamental knowledge of the major equipment deployed in an electrical energy system.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the fundamental knowledge on electrical power systems
- use mathematics and engineering techniques to solve problems related to transformers and rotating electrical machines
- describe the importance of equipment characteristics and environment issues on the modern electrical power system
- identify appropriate tests or methods to obtain parameters in equivalent models for transformers, overhead lines and rotating electrical machines

Indicative Content

- **Nature of Electrical Energy System**
Power system layout, transmission and distribution structure, role of transformers; The interconnected power system; HVDC transmission; Power system protection concepts.
- **Generation, Energy and Environment**
Principles of energy conversion, power plant and busbar layout, types of generators and turbines; Concept of generation control and performance chart; Renewable and non-renewable sources; Sources of pollution and environmental impacts.
- **Transformers**
Construction and operating principles; Equivalent circuits and per-unit system; 3-phase winding connections and phase grouping; Voltage regulation; Parallel operation.
- **Transmission Lines and Cables**
Overhead line construction; Primary (RLCG) and general (ABCD) parameter calculations; Line Equations and performance chart; Corona loss and interference; Cables types and construction;

Electrical stress calculation; Thermal characteristics.

- **Rotating Electrical Machines**

Basic operating principles of D.C. machines, induction motors and synchronous machines.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of the major theorems and mathematical techniques used in the analysis of different electrical machines and components in the power system. Tutorials will provide students with the opportunity to reinforce their understanding of the concepts taught in lectures. Laboratory sessions will be used to illustrate and assimilate certain principles of electrical machines' operations.

Assessment Approach

A variety of assessment tools will be used, including assignments, laboratory reports, tests and an examination, so as to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Grainger, J and Stevenson, W (1994) *Power system analysis*, 1st Ed., McGraw Hill.

Schavemaker, P and Sluis, L (2008) *Electrical power system essentials*, Wiley.

References

Saadat, H (2010) *Power system analysis*, 3rd Ed., PSA Publishing.

Schlabach, J and Rofalski, K (2008) *Power system engineering: planning, design, and operation of power systems and equipment*, Wiley.

Kiameh, P (2012) *Power generation handbook*, 2nd Ed., McGraw Hill.

Chapman, S. J. (2002) *Electric machinery and power system fundamentals*. 1st Ed., McGraw Hill.

Blume, S W. (2007) *Electric power system basics for the nonelectrical professional*, Wiley-IEEE Press.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject aims to provide students with a broad view of both theoretical and practical issues in human factors for design of human-computer interfaces, equip students with knowledge and understanding of the nature of human computer interactions, human characteristics, computer system and interface architecture and equip students with skills in design and evaluation of user interfaces.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand and appreciate the human factors and the theoretical issues involved in human-computer interaction design;
- apply the theoretical design principles to the design and evaluation of user interfaces;
- collect user requirements, design a human-computer interface according to these requirements, and evaluate the design;
- solve problems by using systematic approaches;
- solve complex problems in groups.

Indicative Contents

- **Nature of Human Computer Interaction (HCI)**
Definitions and importance of HCI; Historical context of HCI; Roles which various disciplines play within HCI.
- **Evaluation**
Role of evaluation; Evaluation techniques; Experiments and benchmarking.
- **Human Characteristics**
Perception and representation; Models and limits of human memory; Mental models; Use of metaphors; Support user aspects of language, social and organisational aspects; Input and output devices: performance characteristics (human and system); Speech input and output.
- **Dialogue Interactions and Formal Models**
Task analysis and predictive modeling; Dialogue interaction: types and techniques; Multimedia and non-graphical dialogues; Response time; Statistical models for describing interaction processes.
- **Design Guidelines and Metrics**

User-centered design and task analysis; Software engineering design models; Structural HCI design and envisioning design; Standards and metrics; Guidelines to support design; Standards and metrics; Documentation and on-line information.

- **Design of Applications**

Design rationale; Participatory design; User interface management systems; WWW application design.

Teaching/Learning Approach

During lectures, students will come across the common concepts, methods, and issues in HCI, and will be supplemented by mini-cases and in-class exercises. Students are required to actively participate in the case discussion and the Q&A exercises.

During tutorials, students will have the opportunity to practice, apply, and present what they have learned. They will also be able to share their ideas and experience, as well as learn from each other.

Students will learn not only in the class but also through various coursework activities.

Assessment Approach

Students' achievement of the subject intended learning outcomes are assessed by assignments, projects, tests and an examination.

Assignments are designed to reinforce the concepts and methods learned in the class. Projects are used to develop students' analytic and problem solving skills. The written part of the assignments and projects helps student develop their organisation and documentation skills. The oral part of the coursework allows students to present their ideas and communicate effectively to the audience. Tests are used to assess independent problem solving and critical thinking skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Shneiderman, B. and Plaisant, C. (2010), *Designing the user interface: strategies for effective human-computer interaction*, 5th Ed., Addison Wesley.

References

Andleigh, P.K., and Thakrar, K. (1996), *Multimedia systems design*, Prentice Hall.

Dix, J. F, Abowd, G., and Beale, R. (2004), *Human-computer interaction*, 3rd Ed., Prentice Hall.

Morris, M.E.S. and Hinrichs, R.J. (1996), *Web page design: A different multimedia*, Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject equips students with broadened views of the basic principles and essential knowledge in both hardware and software aspects of digital logic systems and microprocessor systems. It also enables them to gain understanding and skills for designing and building simple digital logic circuits using logic gates and programmable logic devices for practical applications.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- explain the fundamental principles of digital logic systems and microprocessor systems
- analyse and design simple combinational and sequential logic systems
- describe the principles and applications of programmable logic devices
- recognise the basic structure, organisation and assembly language programming techniques of microprocessor systems

Indicative Contents

- **Combinational Logic**
Decoders and encoders; Multiplexers and demultiplexers; Binary adders, adder-subtractors and multipliers; HDL representations of combinational logic.
- **Sequential Logic**
Sequential circuit analysis and design; Registers and counters; HDL representations of sequential logic.
- **Memory and Programmable Logic Devices**
Write and read operations, and timing waveforms of RAM; RAM integrated circuits, three-state buffers, DRAM ICs. logic circuit design with Programmable Logic Devices (PLD); ROM, PLA and PAL; Xilinx FPGA.
- **Microprocessor**
Register transfer operations; Microoperations; Bus-based transfer; ALU; Shifter; Datapath representation; Control word; Control unit; Hardwired control; Concepts of assembly and machine language.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of major theorems, principles and mathematical techniques of digital and microprocessor systems. In addition, examples of modern digital and microprocessor systems are discussed in lectures.

Tutorials will provide students with the opportunity to clarify the concepts and to have a deeper understanding of the lecture materials through digital circuit and microprocessor problems. Laboratory sessions will allow students to make use of software and hardware tools to develop simple digital systems and perform simulations.

Assessment Approach

A variety of assessment tools will be used, including assignments, group projects, tests and an examination, so as to develop and assess students' understanding on the principles and problem solving techniques in digital logic systems and microprocessor systems.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Mano, M.M. and Kime, C.R. (2008), *Logic and computer design fundamentals*, 4th Ed., Prentice Hall.

References

Brown, S. and Vranesic, Z. (2008), *Fundamentals of digital logic with verilog design*, 2nd Ed., McGraw Hill.

Floyd, T.L. (2009), *Digital fundamentals*, 10th Ed., Prentice Hall.

Mano, M.M. and Ciletti, M.D. (2007), *Digital design*, 4th Ed., Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2042 Computer Programming
Exclusions	CCN3133 Computer System Principles
Assessment	50% coursework 50% examination

Aims

This subject provides students with knowledge on the principles of operating systems. At the completion of the course, students will have acquired knowledge on different types of services provided by operating systems, concepts and theories of operating systems and implementation issues.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- identify the services provided by operating systems
- grasp the concept of the internal structure of an operating system and write programs using system calls
- review and compare different operating systems
- understand as well as solve problems involving process control, mutual exclusion, deadlock and synchronisation

Indicative Contents

- **Introduction to Operating Systems**
Operating system objectives, types, functionalities and achievements; System components and services; Resource management; Memory management; Input/Output (I/O) management; File management.
- **Process Management**
Process concepts and characteristics; Processor management and manipulation; Asynchronous concurrent processes; Mutual exclusion; Synchronisation; Deadlock; Scheduling algorithms.
- **Memory and Secondary Storage Management**
Virtual memory; Paging and segmentation system; Secondary storage allocation; Directory and file system structure.
- **Protection and Security**
Protection and access control; Capabilities; Security and cryptography.
- **Case Studies on Operating Systems**

Structure of UNIX, Linux, Mac OS, Microsoft Windows, etc.; Shell and commands; Scripts; System calls.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of some concepts. Worksheets may also be used to guide students through the reasoning behind more complex theories.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught. Hands-on practices related to real-life application may be conducted to develop students' technical competence.

Assessment Approach

A variety of assessment tools will be used, including hands-on practice assignment(s), test(s), project and an examination designed to help students to understand and evaluate the concepts and theories of operating systems as well as to recognise the implementation issues of operating systems. The assessment tools will also assess students' problem solving abilities in process control, mutual exclusion, deadlock and synchronisation.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Stallings, W. (2012), *Operating systems: internals and design principles*, 7th Ed., Prentice Hall.

References

Deitel, H. M., Deitel P. J. and Choffnes D. R. (2004), *Operating systems*, 3rd Ed., Addison Wesley.

Silberschatz, A., Galvin, P. B and Gagne, G. (2009), *Operating system concepts*, 8th Ed., Addison Wesley.

Tanenbaum, A. S. (2008), *Modern operating systems*, 8th Ed., Prentice Hall.

Robbins, K. and Robbins, A. (2004), *Unix systems programming: communication, concurrency and threads*, 2nd Ed., Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces fundamental knowledge and concepts in organic chemistry and shows some of the key evidence which supports the concepts. The subject also introduces the spectroscopic techniques used in organic chemistry aided in functional group identification. Emphasis will be placed on reactions and compounds with structural interest as well as industrial importance.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- recognise functional groups like alkanes, alkenes, alkynes and alkyl halides, and know the hybridization of each functional group
- name the organic compounds in a systematic manner (IUPAC)
- comprehend the basic principles of stereochemistry for studying various reaction mechanisms
- state how typical organic compounds react, how to synthesize selected organic compounds, and how the mechanism of which selected organic reactions occur, and predict reactivity of various basic reactions in different conditions
- recognise the basic principles of mass spectrometry, UV, IR and proton NMR spectroscopies for functional group identification and deduce of simple organic compounds by using these spectroscopic techniques

Indicative Contents

- **Structure and Bonding**
Atomic structure; Electronic and steric effects on acids and bases, valence bond theory; Hybridization; Molecular orbital description of bonding; Bond polarity and electronegativity.
- **Organic Compounds and stereochemistry**
Alkanes; Cycloalkanes; Alkenes; Alkynes; Organohalides; Chirality, enantiomerism, R-S notation, diastereomerism; Constitution, configuration and conformation.
- **Organic reactions and synthesis**
Overview of organic reactions for polar reactions and radical reactions; reaction mechanisms; Reactions and synthesis for alkenes; Synthesis for alkynes; Nucleophilic substitutions reactions and eliminations for alkyl halides.

- **Structure Determination**

Mass spectrometry; Infrared spectroscopy; Nuclear magnetic resonance spectroscopy; Ultraviolet spectroscopy.

Teaching/Learning Approach

The course is composed of three parts: lectures, tutorials and laboratory sessions. Lectures will focus on the introduction and explanation of chemical reactions of functional groups of organic chemicals. Examples and references will be given to students wherever appropriate. Tutorials will provide students with opportunities to broaden, enlighten and reinforce the general knowledge obtained in the lectures. Problem-based activities, classroom feedback, and discussions will be arranged in the tutorials to stimulate students' interests or their awareness of practical implications of some concepts. Laboratory sessions may also be used to enable students to understand, verify, and apply knowledge developed from lectures via hands-on practice.

Assessment Approach

A variety of assessment tools will be used, including group discussion, written laboratory reports, classroom feedback, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills, including analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

McMurry, J. (2012), *Organic chemistry*, 8th Ed., Brooks-Cole Publishing Co.

References

Carey, F. A. (2011), *Organic chemistry*, 8th Ed., McGraw-Hill.

Pavia, D. L. (2001), *Introduction to spectroscopy: A guide for students of organic chemistry*, 3rd Ed., Thomson Learning.

Wade, L. G. (2010), *Organic chemistry*, 7th Ed., Prentice Hall.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject introduces fundamental knowledge and concepts in physical chemistry for thermodynamics and kinetics, and shows some of the key evidence which supports the concepts. The subject also introduces the techniques for practical measurements of samples related to the topics of thermodynamics and kinetics.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- deploy the knowledge learned for exploring the basic principles of thermodynamics
- demonstrate a better understanding on the fundamental principles of reaction rate theories as well as their contemporary applications
- perform basic physical chemistry experiments as well as evaluate, analyze and interpret the effects of external conditions on the experimental equilibrium
- identify and solve problems in related areas of physical chemistry and real-life examples

Indicative Contents

- **Thermodynamics**
System, states, state variables, state/path function, intensive/extensive properties; 1st law: enthalpy of chemical reactions, heat and work, internal energy, adiabatic changes, thermochemistry, calorimetry, the Joule-Thomson effect; 2nd and 3rd laws: criteria for spontaneous change, entropy, Gibbs free energy; Adiabatic, isothermal, isobaric and reversible processes, Carnot cycle and heat engine, Nernst equation, Gibbs energy function and equilibrium constants, phase rule, Clausius-Clapeyron equation; Effect of change in state variables on some state/path functions.
- **Kinetics**
Rate laws, rate equations and rate constants, reaction mechanism and elementary reactions; Rate determining steps; Reaction types: opposing reactions, consecutive reactions, parallel reactions, chain reactions.
Reaction rate theories: collision and absolute rate theories, activation energy, temperature dependence of reaction rates; Reaction approaching equilibrium, equilibrium constants; Transition state theory, steady-state approximation.
- **Laboratory Techniques**

Perform basic physical chemistry laboratory techniques and operate various instruments to solve problems on topics discussed and interpret the data obtained.

Teaching/Learning Approach

The course is composed of three parts: lectures, tutorials and laboratory sessions. Lectures will focus on the introduction of thermodynamics, reaction rate equations and theories, and some basic laboratory techniques of physical chemistry. Real-life examples and references will be given to students wherever appropriate. Tutorials will provide students with opportunities to broaden, enlighten and reinforce the general knowledge obtained in the lectures. Problem-based activities, classroom feedback, and discussions will be arranged in the tutorials to stimulate students' interests or their awareness of practical implications of some concepts. Laboratory sessions may also be used to enable students to understand, verify, and apply knowledge developed from lectures via hands-on practice.

Assessment Approach

A variety of assessment tools will be used, including group discussion(s), written laboratory reports, classroom feedback, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Atkins, P. W., and De Paula, J. (2010), *Physical chemistry*, 9th Ed., Oxford University Press.

References

Atkins, P. W., and De Paula, J. (2009), *Elements of physical chemistry*, 5th Ed., Oxford University Press.

Engel, T., Reid, P. and Hehre, W. (2010), *Physical chemistry*, 2nd Ed., Prentice Hall.

Halpern, A. M. and McBane, G. C. (2006), *Experimental physical chemistry: A laboratory textbook*, 3rd Ed., W. H. Freeman and Company.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2244 Statistics for Business II or CCN2287 Inferential Statistics
Assessment	60% coursework 40% examination

Aims

This subject equips students with practical skills that are necessary for preparing data, performing statistical analysis and presenting analysis results. Emphasis will be placed on the ability to use modern statistical software to perform these tasks on real datasets.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the basic functions for data analysis available in popular software packages
- synthesise the statistical knowledge and techniques required in data analysis software
- produce presentable results for statistical analysis
- interpret results produced by statistical software
- define, formulate and solve problems in a systematic approach

Indicative Contents

- **Data Management**
Types of data file; Import and export of data in popular software packages.
- **Descriptive Statistics**
Measures of central tendency and dispersion; Measures of association.
- **Data Presentation and Graphics**
Tabulation of data; Graphical techniques for univariate and bivariate data.
- **Probability Distribution and Sampling**
Probabilities and cumulative probabilities of commonly used distributions such as binomial, Poisson, normal, Student's t, Chi-square and F; Random number generation; With and without replacement sampling from finite population.
- **Inferences for Continuous Data**
One sample and two sample analysis for population means.
- **Inferences for Categorical Data**

One sample and two sample analysis for population proportions; Contingency table; Test of independence.

- **Regression**

Simple linear regression; Multiple linear regression; Regression diagnostics.

Teaching/Learning Approach

Lectures will introduce the concepts and theories of data analysis supported by hypothetical and real examples wherever appropriate. Tutorials will be a combination of demonstrations of statistical software and data analysis activities using real datasets.

Assessment Approach

In-class assignments, written reports, data analysis exercises and mini-project are used to assess students' practical skills in data analysis. The final examination is used to assess students' overall understanding of best practices and methodologies in statistical data analysis.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Peck, R., Olsen, C. and Devore, J. (2012), *Introduction to statistics and data analysis*, 4th Ed., Brooks/Cole.

References

Carver, R. H. and Nash, J. G. (2012), *Doing data analysis with SPSS® : version 18.0, international edition*, 5th Ed., Duxbury Press.

Maindonald, J. and Braun, J. (2010), *Data analysis and graphics using R – an example-based approach*, Cambridge University Press.

Marques de Sá, J. P. (2007), *Applied statistics using SPSS, STATISTICA, MATLAB and R*. Springer.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2244 Statistics for Business II or CCN2287 Inferential Statistics
Assessment	40% coursework 60% examination

Aims

This subject aims to introduce to the students the basic concepts of survey sampling theory including brief introduction to questionnaire design, methods of sample selection, estimation, sampling variance, standard error of estimation in finite population, development of sampling theory for use in sample survey problems and sources of errors in surveys. Practical examples will be used to illustrate the principles and methods.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand and interpret real-life survey reports from public agencies
- understand concepts and techniques in sampling methods
- assess the appropriateness of sampling plans with special reference to survey goals, sampling frames availability, and resource constraints
- understand solution methodology to estimate population parameters for sampling plans
- conduct sample surveys within the context of socially acceptable professional and ethical practices

Indicative Contents

- **Basic Concepts of Survey Sampling**
Types of sampling errors; Sampling and complete enumeration; Principal steps in a sample survey; Terms and definitions in sample surveys.
- **Questionnaire Design**
Types of questions; Ordering of questions; Wording of questions.
- **Sample Design, Methods and Theory**
Non-probability sampling; Simple random sampling; Stratified random sampling; Systematic random sampling; Varying probability sampling; Ratio and regression estimation; Cluster random sampling; Multi-stage sampling.
- **Types of Errors and Biases**
Non-sampling errors; Response and non-response errors; Measurement errors; Control of errors; Bias/variance trade off.

- **Current Practices**
General household survey; Census; By-census; Household expenditure survey.
- **Ethics**
Professionalism; Responsibilities; Obligations; Roles.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate.

Tutorials will provide students with the opportunity to practice their newly learnt concepts through case studies and numerical examples.

Assessment Approach

Progress of students will be assessed through the use of assignments, test(s) and an examination. The assignments are used to assist the students to reflect and review their progress on their overall learning outcomes. Test(s) and final examination are used to assess the overall learning outcomes achieved by the students.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Scheaffer, R. L., Mendenhall, W., Ott, R. L. and Gerow, K. G. (2011), *Survey sampling*, 7th Ed., Duxbury Press.

References

Cochran, W. G. (1977), *Sampling techniques*, 3rd Ed., Wiley.

Kish, L. (1995), *Survey sampling*, Wiley.

Thompson, S. K. (2002), *Sampling*, 2nd Ed., Wiley.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject introduces to students the fundamental concepts in transportation. It equips students with the basic concepts, techniques and skills on transportation system analysis and economic evaluation, and enables students to appreciate the operations of real-life transportation systems and the related engineering, economical and environmental issues. The subject prepares students for tackling practical engineering problems, with a combination of strong theoretical background and sound engineering sense.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- identify key issues in transportation systems
- suggest appropriate solutions to solve real-life transport problems
- conduct simple engineering design, basic system analysis and economic evaluation

Indicative Contents

- **Transportation Systems**
Introduction to transportation engineering, transportation system engineering, transport problems and solutions in Hong Kong; Sustainability of transportation systems; Transportation in social, economics, environmental and political roles.
- **The Technology of Transportation**
Transport modes and operational characteristics; Transport technology and development; Technology application in transport and logistics industry.
- **Traffic Engineering Fundamentals**
Elements of traffic engineering; Speed-flow-density relationships; Level of service concept.
- **Transport Economics**
Principles of transport economics; Demand and cost for transport; From economics to transport policy; Effects of transport pricing policies.

- **Transportation System Analysis**

Systems approach planning and engineering; Travel choice behaviours and demand modeling; Transportation network analysis; Decision analysis and economic evaluation of transportation projects.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key concepts, techniques and skills supported by real-life cases and examples wherever appropriate. Group discussions and activities may be arranged to stimulate students' interests or their awareness of practical implications of different concepts related to transport. Guest lecturers may be invited to give seminars on the state-of-the-art practices or technologies in dealing with transport problems.

Tutorials will provide students with the opportunity to strengthen their understanding and appreciate what they have learnt. Activities in tutorials may include student presentations, discussions of problem sets and hands-on exercises.

Assessment Approach

A variety of assessment tools may be used, including assignments, in-class exercises, presentation(s), case studies, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook and References

Banks, J. H. (2002), *Introduction to transportation engineering*, 2nd Ed., McGraw-Hill.

Cole, S. (2005), *Applied transport economics: policy, management & decision making*, 3rd Ed., Chartered Institute of Logistics and Transport (UK), London: Kogan Page.

Ortuzar, S. J. D. and Willumsen, L. G. (2001), *Modelling transport*, 3rd Ed., Chichester: J. Wiley.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN2042 Computer Programming
Assessment	60% coursework 40% examination

Aims

This subject provides students with an overview of different forms of human interaction with computational systems, the conceptual framework to analyse the visual interface and interaction requirements, technical issues, computing techniques and paradigms in visual interface and interaction development. This subject also provides students with a broad view of the state of visual interface and interaction development in the industry. The subject helps students develop their critical thinking for life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand the theoretical principles involved in the visual interface and interaction design
- apply the theoretical principles to design, development and evaluation of visual interfaces and interactions
- conduct critical thinking and analysis of the visual interface and interaction requirements of different organisations

Indicative Contents

- **Interactive Computing**
Even-driven paradigms; Finite-state machines; Model-view-controller paradigm.
- **Visual Interface and Interaction Design**
Display design; Web page design; WIMP; GUI widgets; Color; Dialog boxes and alternatives; Commands
- **Mobile Interface Programming**
Mobile device platforms; Embedded operating systems; Post-WIMP user interfaces.
- **Tangible Interaction**
Physical computing; Sensor signals; Physical interaction with humans and the environment.

Teaching/Learning Approach

Lectures will focus on the technical and practical aspects of the visual interface and interaction issues such as computational paradigms and programming languages. Discussions and activities may be arranged to stimulate students' interests and awareness of practical implications of the visual interface and interaction issues.

Tutorials will provide students with the opportunity to deepen their understanding with laboratory hands-on design practice and discussions of visual interface and interaction design cases.

Assessment Approach

A variety of assessment tools will be used, including assignments, projects, presentations, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including critical thinking, analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcomes assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbooks

O'Sullivan, D. and Igoe, T. (2004), *Physical computing: sensing and controlling the physical world with computers*, 1st Ed., Course Technology PTR.

Kochan, S. (2011), *Programming in Objective-C 2.0*, 3rd Ed., Addison Wesley.

References

Saffer, D. (2010), *Creating innovative applications and devices*, 2nd Ed., New Riders.

Shneiderman, B., Plaisant, C., Cohen, M. and Jacobs, S. (2010), *Designing the user interface: strategies for effective human-computer interaction*, 5th Ed., Addison-Wesley.

Smith-Atakan, S. (2006), *Human-computer interaction*, Thomson Learning.

Thimbleby, H. (2010), *Press on: principles of interaction programming*, MIT Press.

Tidwell, J. (2006), *Designing interfaces*, O'Reilly.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	100% coursework

Aims

This subject provides students with the understanding of the fundamental principles and techniques of land surveying. It provides an opportunity for students to apply appropriate principles and methods when carrying out survey tasks. Students' practical skills in using conventional and modern land surveying equipment will be developed and enhanced through the field practical exercises.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the functions and operation of modern survey equipment
- explain sources of errors in survey measurement and apply proper field procedures to reduce or eliminate these errors
- describe the establishment of a survey coordinate system and its conversion to another plane coordinate system
- compare different control and positioning techniques
- apply the control and positioning techniques under different site conditions and specification requirements correctly

Indicative Contents

- **Basic Concepts**
Geomatics; Data collection concept; Units of measurements; Gradient; Scale; Direction and angle; Orientation; Geoid; Ellipsoid; Coordinate systems applied to mapping; Random and systematic errors; Taylor's error propagation law; Accuracy estimation of various positioning techniques; Fundamentals of rectangular and polar coordinate computations.
- **Operation of Conventional and Modern Instrument**
Mechanical theodolite and leveling instrument; Total station; Digital level and GPS.
- **Measurement Techniques**
Taping; Ordinary leveling; Theodolite observation and Trigonometric heighting.
- **Point Positioning Techniques**
Radiation; Angular and length intersection; 2-point and 3-point resections.
- **Control Survey**
Horizontal and vertical control; Site reconnaissance; Triangulation; Trilateration; Triangulation; Traverse and survey monumentation.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of basic principles and computation methods used in surveying.

Tutorials / Field practical exercises provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of practical surveying issues. Students' practical skills will be developed through a series of field practical exercises.

Assessment Approach

A variety of assessment tools will be used, including practical exercises, practical test, written test, project and presentation designed to develop and evaluate students' achievement in different learning outcomes.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Schofield, W.(2007). *Engineering Surveying*, 6th Ed., Elsevier.

References

Bannister, A., Raymond, S. and Baker, R. (1998) *Surveying*. 7th Ed., Pearson Prentice Hall.

香港理工大學
香港專上學院

科目大綱
Subject Description Form

科目編號 Subject Code	CCN2281
科目名稱 Subject Title	古典詩詞導論 Introduction to Classical Chinese Poetry
程度 Level	2
學分 Credit Value	3
教學語言 Medium of Instruction	中文〔粵語或普通話〕
修讀條件 Pre-requisite / Co-requisite/ Exclusion	無
科目目標 Objectives	本科目旨在介紹中國古典詩詞的流變與特質，以課堂講授、導修練習及分組習作等方式，培養學生對古典詩詞的閱讀及鑑賞能力。透過掌握古典詩詞的特質，學生可提升自身的文化素養，加深對中國文學和中國文化的認識。
預期學習成果 Intended Learning Outcomes	學生修畢本科目後應能： (m) 認識各種詩、詞體裁的特點。 (n) 掌握中國詩詞的流變，了解古典詩詞的特質。 (o) 認識重要的作家及其創作風格。 (p) 提升對古典詩詞的鑑賞能力。 (q) 加深對中國文化和中國文學的體會。
科目摘要/ 教學大綱 Subject Synopsis/ Indicative Syllabus	古典詩詞的流變 簡論先秦至唐的詩體演變過程，略述唐五代至宋代詞的發展，簡介元代散曲。

	詩詞格律 說明古體詩、近體詩及詞的平仄格律要求，以及其寫作方法。 風騷並稱的詩歌源頭 分析《詩經》和楚辭的藝術風格和特徵，了解中國詩歌的源頭。可選用文本：《詩經·邶風·北風》、《詩經·秦風·蒹葭》、屈原《離騷》、《九歌·山鬼》等。 漢文人詩與樂府 研讀漢代文人五言詩與民間樂府。可選用文本：《古詩十九首》、《上邪》、《戰城南》、《有所思》等。 建安風骨與田園詩人 探討魏晉詩風的特點，以三曹為例說明何謂建安風骨，分析陶潛田園詩的特點。可選用文本：曹操《短歌行》、曹丕《燕歌行》、曹植《贈白馬王彪》、陶潛《歸園田居》、《讀山海經》等。 唐詩的風貌 探討唐詩的重要風格流派，認識重要的作家。可選用文本：杜甫《秋興八首》、李白《夢遊天姥吟留別》、李商隱《錦瑟》、杜牧《赤壁》、王昌齡《出塞》、白居易《琵琶行》等。 唐宋詩之辨 討論「詩分唐宋」的說法，剖析唐詩與宋詩體格性分之殊，及論其對明清詩學的影響。可選用文本：王安石《明妃曲》、歐陽修《明妃曲和王介甫作》、黃庭堅《戲呈孔毅父》、蘇軾《子由新修汝州龍興寺吳圖壁》等。 唐宋詞的流派 探討花間派、婉約派、豪放派之說，掌握其特點，選讀重要作家的作品。可選用文本：溫庭筠《菩薩蠻》(小山重疊金明滅)、秦觀《浣溪沙》(漠漠輕寒上小樓)、蘇軾《江城子》(密州出獵)、周邦彥《蘭陵王》等。																										
教學方法 Teaching/Learning Methodology	本科目理論與實踐並重。主講課集中講解相關概念和理論，導修課為學生提供實踐和應用相關概念和技巧的機會。學生須參與討論及小組報告，以鞏固所學。本科目採用材料廣泛，各體兼備，思考與分析並重。																										
配合預期學習成果的評核方法 Assessment Methods in Alignment with Intended Learning Outcomes	本科目採用不同的評核方法，協助學生達致預期學習成果，並評核學生的學習表現。 <table><tr><th rowspan="2">用以評核的方法/習作</th><th rowspan="2">百分比</th><th colspan="5">用以評核的預期學習成果</th></tr><tr><th>a</th><th>b</th><th>c</th><th>d</th><th>e</th></tr><tr><td>持續評核*</td><td>50</td><td colspan="5"></td></tr><tr><td>▪ 測驗</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr></table>	用以評核的方法/習作	百分比	用以評核的預期學習成果					a	b	c	d	e	持續評核*	50						▪ 測驗	15	✓	✓	✓	✓	
用以評核的方法/習作	百分比			用以評核的預期學習成果																							
		a	b	c	d	e																					
持續評核*	50																										
▪ 測驗	15	✓	✓	✓	✓																						

	▪ 習作一	15	✓	✓	✓	✓	✓
	▪ 習作二	15	✓	✓	✓	✓	✓
	▪ 課堂參與	5	✓	✓	✓	✓	✓
	期終考試	50	✓	✓	✓	✓	✓
	總計	100					
	*科目小組須待學院課程委員會批准，方可修訂持續評核的項目及/或修改項目所佔的百分比。						
學生須在持續評核及期終考試兩個部份分別取得 D 級或以上成績，方為及格。							
預期學生所需學習時數 Student Study Effort Expected	課堂						小時
	▪ 主講課						26
	▪ 導修課						13
	其他						
	▪ 自修						52
	▪ 持續評核						39
	總學習時數						130
參考書目 Reading List and References	參考書						
	小川環樹(OGAWA, Tamaki)著、譚汝謙編與譯：《論中國詩》，香港：中文大學出版社，1986 年。						
	王力：《漢語詩律學》，香港：中華書局，1994 年。						
	袁行霈：《中國詩歌藝術研究》，北京：北京大學出版社，1987 年。						
	高友工、梅祖麟：《唐詩的魅力》，上海：上海古籍出版社，1989 年。						
	高步瀛：《唐宋詩舉要》上、下冊，北京：中華書局，1994 年。						
	葉嘉瑩：《唐宋词名家論集》，臺北：正中書局，1987 年。						
	錢鍾書：《宋詩選注》，北京：人民文學出版社，2002 年。						
	龍榆生編撰：《唐宋词格律》，上海：上海古籍出版社，1978 年。						
	繆鉞：《詩詞散論》，臺北：開明書店，1966 年。						

香港理工大學
香港專上學院

科目大綱
Subject Description Form

科目編號 Subject Code	CCN2282
科目名稱 Subject Title	創意中文寫作 Chinese Creative Writing
程度 Level	2
學分 Credit Value	3
教學語言 Medium of Instruction	中文（粵語或普通話）
修讀條件 Pre-requisite / Co-requisite/ Exclusion	無
科目目標 Objectives	本科目通過研討會、導修討論及習作分享的方式，幫助學生開發創意潛能，培養創意想像力，提高中文寫作水平。通過廣泛閱讀、討論、研習等方式，同學可把握不同文體的寫作方法，提升文學鑑賞水平和文化素養。
預期學習成果 Intended Learning Outcomes	學生修畢本科目後應能： (e) 掌握基本的創作技巧，加強中文表達能力。 (f) 認識多種文體的特點，掌握不同的修辭風格和藝術手法。 (g) 能創作散文、短篇小說和戲劇對話片段。 (h) 有效運用閱讀文本的方法，提高文學鑑賞能力和文化素養。 (i) 提升批判思考及創造性思維的能力。
科目摘要/ 教學大綱 Subject Synopsis/ Indicative Syllabus	寫作的基本環節 通過五感寫作、角色扮演、強力組合和比喻類推遊戲來訓練觀察、感知和想像的能力，進行詞語、句子、片段的寫作練習。 課堂材料：圖案、遊戲。

	立意、結構與表現手法 展示如何用記敘、描寫、抒情等手法表達情感和意義。 課堂材料：篇章示範、習作分享與重寫。 文類特徵和形式 講解現當代小說、散文、詩歌和戲劇的形式特徵和寫作技巧。 課堂材料：海明威、卡夫卡、福斯特、村上春樹、張愛玲、賈平凹、莫言、余華、西西、白先勇、梁秉鈞等名家作品。 創意寫作與社會生活 剖析創意寫作與當代社會經驗、文化潮流之間的關係。 課堂材料：當代影視短片、流行歌詞與話劇。																																																																		
教學方法 Teaching/Learning Methodology	注重實踐，強調教學互動，通過主講引導、研習對比和小組討論的方式，輔以電影、繪畫、流行歌曲等多種創意藝術提高教學成效，學生需參與課堂討論、撰寫各類習作及互評習作以鞏固所學。																																																																		
配合預期學習成果的評核方法 Assessment Methods in Alignment with Intended Learning Outcomes	本科目採用不同的評核方法，協助學生達致預期學習成果，並評核學生的學習表現。 <table border="1"> <thead> <tr> <th rowspan="2">用以評核的方法/習作</th><th rowspan="2">% 百分比</th><th colspan="5">用以評核的預期學習成果</th></tr> <tr> <th>a</th><th>b</th><th>c</th><th>d</th><th>e</th></tr> </thead> <tbody> <tr> <td>持續評核*</td><td>100</td><td colspan="5"></td></tr> <tr> <td>▪ 測驗</td><td>25</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr> <tr> <td>▪ 習作一</td><td>25</td><td>✓</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr> <tr> <td>▪ 習作二</td><td>15</td><td>✓</td><td>✓</td><td>✓</td><td></td><td>✓</td></tr> <tr> <td>▪ 課堂參與</td><td>25</td><td>✓</td><td>✓</td><td>✓</td><td></td><td>✓</td></tr> <tr> <td>▪ 課堂表現</td><td>10</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>總計</td><td>100</td><td colspan="5"></td></tr> </tbody> </table> *科目小組須待學院課程委員會批准，方可修訂持續評核的項目及/或修改項目所佔的百分比。 學生須在持續評核部份取得 D 級或以上成績，方為及格。						用以評核的方法/習作	% 百分比	用以評核的預期學習成果					a	b	c	d	e	持續評核*	100						▪ 測驗	25	✓	✓	✓			▪ 習作一	25	✓	✓		✓	✓	▪ 習作二	15	✓	✓	✓		✓	▪ 課堂參與	25	✓	✓	✓		✓	▪ 課堂表現	10	✓	✓	✓	✓	✓	總計	100					
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Effort Expected	學生自修	
	▪ 課後創作及閱讀	54
	▪ 準備測驗及小組篇章研習	40
	總學習時數	133
參考書目 Reading List and References	主要用書 本科目涉獵之參考材料較為廣泛，無指定課本。 參考書 布魯克斯·沃倫編著，馮亦代等譯：《小說鑑賞》，世界圖書出版社，2008。 朱自清：《讀寫指導》，香港：三聯書店，1999。 李銘愛：《寫作縱橫談---散文》，台北：文藝協會，1998。 李喬：《小說入門》，台北：大安出版社，1996。 許一青：《文學創作心理學》，上海：學林出版社，1990。 許建昆、周芬伶等編：《寫作教室—閱讀文學名家》，台北：麥田出版社，2004。 陳思和、李平主編：《現代文學 100 篇(上、下)》，學林出版社，2002。 鄭樹森：《小說地圖》，台北：INK 印刻出版有限公司，2007。 鄭樹森：《中國現代詩選》，台北：洪範，1989。 《中國現代散文名家名作原版庫》，北京：中國文聯出版社，1993。 互聯網資源 香港文學資料庫 http://hklitpub.lib.cuhk.edu.hk/ 期刊 《字花》，香港：水煮魚文化公司。 《收穫》，上海：收穫文學雜誌社。 《香港文學》，香港：香港文學雜誌社。 《聯合文學》，台北：聯合文學雜誌社。	

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	CCN1109 General Biology
Assessment	60% coursework 40% examination

Aims

This subject enables students to acquire a basic understanding of the genetic inheritance and biological events in molecular level. Also, students will appreciate the advances in current molecular biological technology. Furthermore, molecular processes in oncogenesis will be discussed. Hence, students are expected to be able to master the knowledge in areas related to molecular biology for further study.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- identify the basic architecture and regulation of genetic materials in prokaryotes and eukaryotes
- distinguish the Mendelian genetics and the non-Mendelian inheritances
- differentiate the difference between prokaryotic and eukaryotic gene expression mechanisms
- comprehend the significance of and surveillance in gene replication
- describe the processes involved from gene transcription to protein synthesis
- explain the basic molecular principles in oncogenesis

Indicative Contents

- **Basic genetic material, structure and function**
 - Structure of DNA, RNA (mRNA, tRNA, rRNA), higher order of DNA organization in chromosome (chromatin, nucleosome), locus, alleles, triplet genetic code, anti-codon, telomere, satellite DNA and minisatellites, repetitive and non-repetitive sequences, essential genes, gene cluster, transposons, and nucleus
 - Viral and bacterial chromosomes, including retrovirus and retrotransposons
- **Genetic inheritance**
 - Mendelian and non-Mendelian inheritances
- **DNA replication**
 - DNA polymerases, exonuclease, endonuclease, semi-conservative and semi-discontinuous DNA replication, Okasaki fragments, centrosome, cytokinesis

- **Transcription**
 - One gene-one enzyme hypothesis, cis-acting and trans-acting elements, priming, start codon, stop codons
- **Regulation of prokaryotic gene expression**
 - Viral and bacterial gene transcription
 - Lytic and lysogenic pathways
 - Bacterial RNA modification
 - Operon, regulatory RNA (attenuation and termination)
- **Regulation of eukaryotic gene expression**
 - RNA splicing (introns, exons; one gene codes for a few gene products), post-transcriptional modifications of RNA
- **Protein translation and post-translational modifications**
 - Codon, anticodon, initiation, elongation and termination processes in ribosome, post-translational modification in ER and golgi apparatus, vascular trafficking and mRNA degradation, phosphorylation, dephosphorylation, mono- and poly-ubiquitination, etc
- **DNA damage and repair mechanism**
 - Important kinases, MRN complex, NHEJ (non-homologous end joining) and homologous recombination
- **Advances in molecular techniques**
 - PCR, molecular cloning, gene silencing (siRNA, shRNA), knockout mice, gene editing, enforced gene overexpression, fluorescent protein labeling (GFP), microarrays, whole genome sequencing, stem cells (ESC and iPS cells), SNP, bacterial Tet-On, Tet-Off system
- **Molecular Oncogenesis**
 - Gene mutations, dysregulations of gene expression, epigenetic factors, dysregulation of DNA repairs

Teaching/Learning Approach

The basic knowledge of molecular biology will be presented in lectures. In addition, animations and videos will be demonstrated to aid students in learning complicated biological processes. In tutorials, students will be given updated scientific journals, and will be asked to give a summary of the selected journal via an oral presentation, expecting to enhance students' analytical skills. Further, students are required to write a paper related to the field of molecular biology. Also, exercises and questions will be given to enrich the learning outcomes of students.

Assessment Approach

A variety of assessment criteria may be utilized, including question analyses, group presentations, written paper, mid-term test and examination, aiming to evaluate students' level of comprehension of the subject.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading and revision.

Indicative Readings

Recommended Textbook

Peter J. Russell. (2009) *iGenetics: A Molecular Approach*, 3rd Ed., Benjamin Cummings.

References

Bruce Alberts, et al., (2002) *Molecular Biology of the Cell*, 4th Ed., Garland Science.

Robert A. Weinberg. (2013) *The Biology of Cancer*, 2nd Ed., Garland Science.

Errol C. Friedberg, et al., (2005) *DNA Repair and Mutagenesis*, 2nd Ed., ASM Press.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to provide students with a fundamental knowledge of polymers, fibres and yarns used in textiles. It also helps students understand the structure-property relationship of materials used in textile and the principal methods of yarn production.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- explain and apply the structure-property relationship of polymers used in textile fibres and yarns.
- compare the performance of different textile materials.
- describe the origins, production, properties and end-uses of common textile fibres and relate the different characteristics of the various fibres to their applications.
- identify the general types of fibres and yarns and their properties.
- compare the principal methods of yarn production and relate them to the general types of yarns and their properties.

Indicative Contents

- **Properties of Polymers**
Basic terminology in polymer science; structures of polymers; typical thermal transition of polymers; physical properties of polymers.
- **Properties of Fibres**
The origin, production, properties, and end-uses of different natural and man-made fibres; fibre quality; identification of fibres.
- **Production of Yarns**
Classification, structures, properties and uses of spun yarns, continuous filament yarns, texturised yarns, fancy yarns; principles underlying the processes used in the conversion of fibres to a yarn; outlines of staple yarn spinning systems; yarn count and yarn twist.
- **Testing of Fibres and Yarns**
Fibre testing: identification of fibres, determination of fibre length, finesses, maturity and tensile strength; yarn testing: assessment of linear density, yarn twist, strength and irregularity.

Teaching/Learning Approach

This subject will be delivered mainly through lectures and tutorials/laboratory sessions. Lectures focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate. Practical problems and case studies of textile applications will be raised as a focal point for discussion in tutorial classes. Laboratory sessions may be arranged to stimulate students' interests or their awareness of practical implications of fibre and yarn testing.

Assessment Approach

A variety of assessment tools will be used, including (i) assignments and/or laboratory report(s) (30%), test(s) (20%) and an examination (50%) designed to develop and assess students' achievement of the intended learning outcomes at different stages and aspects of this subject.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

In this subject, there are 26 and 13 class contact hours for lectures and tutorial/laboratory sessions respectively. Besides, students are expected to spend approximately 91 additional hours on their own or with fellow students for activities such as doing assignments, group work, and self-study in preparation for lectures, tutorials, test(s) and examination(s).

Indicative Readings

References

Pearson, R.A. and Sperling, L.H. (2015) *Introduction to Physical Polymer Science*, 5th Ed., Wiley.

Bower, D.I. (2002) *An Introduction to Polymer Physics*, Cambridge University Press.

Chan, K., Cheng, K.P., and Lau, M.P. (1993) *Understanding Textiles, Volume 1: Fibre Technology*, The Hong Kong Polytechnic University.

Collier, B.J., Bide, M., and Tortora, P.G. (2009) *Understanding Textiles*, 7th Ed., NJ: Prentice Hall.

Joseph, M.L., Hudson, P.B., Clapp, A.C. and Kness, D. (1993) *Joseph's Introductory Textile Science*, Fort Worth: Harcourt Brace Jovanovich College Publishers.

Klein, W. and Stakler, H. (1993) *New Spinning System*, Manchester: Textile Institute.

Lawrence, C.A. (2003) *Fundamentals of Spun Yarn Technology*, FL: CRC Press.

Gong, R.H. and Wright, R.M. (2002) *Fancy Yarns: Their Manufacture and Application*, CRC Press/Woodhead Pub.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	HKDSE Mathematics Extended Part Module 1 (Calculus and Statistics) or CCN1050 Introduction to Probability and Statistics
Assessment	40% coursework 60% examination

Aims

The aim of this subject is to introduce the compilation of statistical data, simple and basic statistical calculation, elements of probability and probability distributions. Applications in business will be emphasised by using appropriate practical examples to illustrate the principles and methods.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- master statistical techniques for data compilation and descriptive statistics calculation
- master techniques for solving problems on probabilities
- perform probability calculations relating probability distribution for discrete random variables
- perform probability calculations relating probability density function for continuous random variables
- determine the appropriateness of applying probability distributions or density functions under various business situations
- assess critically results of business problems

Indicative Contents

- **Descriptive Statistics**
Frequency distributions: construction and uses of frequency tables; Measures of central tendency: arithmetic mean, median, mode; Measures of variability: range, percentiles, variance, standard deviation, coefficient of variation; Interpretation of descriptive statistics and applications in business.
- **Probability**
Experiment; Counting techniques, Permutations and Combinations; Conditional probability; Statistical independence; Bayes' Theorem; Emphasis of its business applications.
- **Random Variables**
Introduction to random variables and their probability distributions; Mathematical expectation; Joint distribution of two random variables for both discrete and continuous cases; Expected value and variance of linear combination of several independent random variables.
- **Discrete Random Variables**
Concept of discrete random variables and their probability distributions; Theory and statistical properties of elementary probability distributions including uniform, Bernoulli, binomial, multinomial, hypergeometric, negative binomial, geometric and Poisson; Binomial approximation to

the hypergeometric and Poisson approximation to binomial; Illustrations of their applications in business.

- **Continuous Random Variables**

Concept of continuous random variables and their probability density functions; Theory and statistical properties of elementary probability distributions including uniform, exponential, normal, gamma and chi-square; Normal approximation to the binomial; Illustrations of their application in business.

Teaching/Learning Approach

Lectures will introduce the subject materials. Illustrative business cases will be used to strengthen students' statistical concepts. Students are required to reinforce their knowledge of this subject through assignments.

Tutorials will provide students with the opportunity to deepen their understanding and to explore further the applications of theories taught.

Assessment Approach

A variety of assessment tools will be used, including assignments, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Newbold, P., Carlson, W. L. and Thorne, B. M. (2010), *Statistics for business and economics*, 7th Ed., Pearson Prentice Hall.

References

Berenson, M. L., Levine, D. M. and Krehbiel, T. C. (2012), *Basic business statistics*, Prentice-Hall.

McClave, J. T., Benson, P. G. and Sincich, T. L. (2011), *Statistics for business and economics*, 11th Ed., Pearson Prentice Hall.

Montgomery, D. C. and Runger, G. C. (2011), *Applied statistics and probability for engineers*, John Wiley.

Level	2
Credits	3
Medium of Instruction	English
Prerequisites	HKDSE Mathematics Extended Module I (Calculus and Statistics) or CCN1050 Introduction to Probability and Statistics
Assessment	40% coursework 60% examination

Aims

The subject aims to introduce the basic elements of statistical methods in estimation of population parameters. The subject also helps students to familiarise with various methods of hypothesis testing and their properties. Applications in business will be emphasized by using ample practical examples to illustrate the principles and methods.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- apply probabilistic and statistical reasoning to describe and analyze essential features of data sets and problems in real-life business situations
- understand statistical techniques to estimate the population mean, proportion and variance
- acquire techniques to test hypothesis with an assumption on the population means, proportions and variances under different circumstances
- carry out nonparametric tests for statistical problems
- use and extend knowledge of inferential statistics and their application in real-life business situations

Indicative Contents

- **Sampling Distributions**
Population and random samples; The Central Limit Theorem; Sampling distributions related to sample means, sample proportions, and sample variances.
- **Useful Distributions in Statistical Inference**
Definitions and properties of normal, t , F and chi-square distributions; Familiarisation with the relationships between these distributions and the use of corresponding tables.
- **Estimation of Parameters**
Concepts of point estimator, unbiasedness and efficiency; Concepts of confidence interval; Point and interval estimates of a mean and the difference between two means, a proportion and the difference between two proportions, a variance and the ratio of two variances; Sample size determination; Illustrative examples of their applications in business.
- **Test of Hypotheses**
Statistical hypotheses and their tests; Type I and type II errors; One-sided and two-sided tests; Tests of significance; Levels of significance; Test statistics; Critical regions; p -values; Tests for an assumed mean, the difference between two means, an assumed proportion, the difference between two

proportions, an assumed variance, and the ratio of two variances; Illustrations of their applications in business; The use of chi-square tests for goodness of fit and for independence; Contingency tables; Illustrative examples of their applications in business.

- **Nonparametric Tests**

Nonparametric tests: the sign test, the signed rank test, the rank sum test, the Kolmogorov-Smirnov test, and the run test.

Teaching/Learning Approach

Lectures will introduce the contents of subject. Illustrative business cases will be used to strengthen students' concepts of this subject. Students are required to reinforce their knowledge through assignments.

Tutorials will provide students with the opportunity to practice their newly learnt concepts on data examples. Activities will include numerical exercises and peer discussions of data analysis results.

Assessment Approach

Effective assessment tools are adopted, including end-of-chapter type problems, written assignments and test(s) designed to reflect and review on the students' progress on their overall learning outcomes. The end-of-semester examination is used to assess the overall learning outcomes achieved by the students.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Besides the 39 class contact hours for lectures and tutorials, students are expected to spend approximately 91 additional hours on their own or with fellow students for activities such as doing assignments, group work, and self-study in preparation for lectures, tutorials, test(s) and examination(s).

Indicative Readings

Recommended Textbook

Newbold, P., Carlson, W. L. and Thorne, B.M. (2010), *Statistics for business and economics*, 7th Ed., Pearson Prentice Hall.

References

Hogg, R. V. and Tanis, E. A. (2010), *Probability and statistical inference*, 8th Ed., Prentice Hall.

Leekley, R. M. (2010), *Applied statistics for business and economics*, CRC Press.

Roussas, G. G. (2003), *Introduction to probability and statistical inference*, Academic Press.

Stapleton, J. H. (2008), *Models for probability and statistical inference: theory and applications*. Wiley-Interscience.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Exclusions	CCN2273 Operating Systems
Assessment	50% coursework 50% examination

Aims

This subject provides students with the basic concepts in computer organization and operating systems for their understanding of the functions and organisations of modern digital computers. It also equips students with the related computer system programming techniques.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the basic structure of a computer operating system
- comprehend the basic concepts of file system and management, process control, scheduling, communication and memory management
- develop programs to control the components in computer systems and operating systems

Indicative Contents

- **Operating System Overview**
OS objective and functions; Modern operating systems; Microsoft Windows, UNIX and LINUX overview.
- **File System and Management**
File organization and access; file directions and sharing; Secondary storage management; System programming for file, directory and I/O access.
- **Process Description and Control**
Definition of process; Process description, control and communication; System programming for process control and communication.
- **Threads and Scheduling**
Processes and threads; Thread management and scheduling; Thread synchronization; System programming for thread management.
- **Memory Management**

Memory management requirement; Memory partitioning; Paging; Segmentation; Dynamic Link Library (DLL); System programming for memory management.

- **Processor Scheduling**

Types of processor scheduling; Scheduling algorithms; Multiprocessor scheduling; Case Study.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of major theorems, principles and mathematics techniques of computer systems and operating systems. In addition, examples of modern computer systems and operating systems will be discussed in lectures.

Tutorials will introduce the commonly used software in performing file system management, process control, scheduling and communication, and memory management, so that students will have an opportunity to enhance their understanding of computer systems through the use of computer programs and exercises. Laboratory sessions will reinforce students' concepts and knowledge learnt in lectures.

Assessment Approach

A variety of assessment tools will be used, including assignments, group projects, programming exercises, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Stallings, W. (2011), *Operating systems: internals and design principles*, 7th Ed., Prentice Hall.

References

Deital, H. M., Deital, P. J. and Choffness, D.R. (2004), *Operating systems*, 3rd Ed., Prentice Hall.

Hart, J. (2010), *Windows system programming*, 4th Ed., Addison Wesley.

Stallings, W. (2011), *Computer organisation and architecture*, 8th Ed., Prentice Hall.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject aims to provide students with the fundamental concepts of micro- and macro- economics related to engineering industry. The subject helps the students to develop the fundamental understanding of finance and costing for engineering operations, budgetary planning, and control. Leading-edge theories of economics and current issues in competitive environment are covered in the subject to strengthen students' knowledge on the development of the Engineering Economics.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- appreciate the factors that shape the economics environment of an engineering company
- evaluate the financial condition of a company based on the financial statements
- apply the basic cost accounting techniques in the planning and control of engineering and production activities

Indicative Contents

- **Principles of Economics**
Concept of scarcity, resources allocation, and opportunity cost; Theory of demand and supply; Utility, value, and value adding; Price system; Organisation of industry; Relationship between economics and engineering industry.
- **Firm's Competitive Environment and Economics Policies**
Firm objective; Market structure, perfect competition, monopoly, and oligopoly; Fiscal policy and monetary policy; Role of government spending and taxation; International trade; Globalization and its effects in the industry.
- **Accounting and Engineering Economics**
Financial statements such as balance sheets and income statements; Investment and source of finance; Ratio analysis; Return on investment; Cost of capital; Nature of profit; Economic profit and Accounting profit; Composition of cost, and fixed and variable costs; Cost-volume-profit analysis; Marginal costing.
- **Fundamental of Budgetary Planning and Control**

Different types of budgets for production and service operations; Approaches to budgeting and the budgeting process; Monitoring the outcomes; Budgeting planning and control techniques; Production budgets; Cash budgeting; Profit planning.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of basic economics concepts, with specific reference to Engineering Economic issues.

Tutorials provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of Engineering Economics issues. The activities in tutorials normally include group discussions and presentations of case studies, questions and problems sets.

Assessment Approach

A variety of assessment tools will be used, including group project(s) and presentations, case studies, written report(s), test(s) and examination to assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Chan, S. P. (2008), *Fundamentals of engineering economics*, 2nd Ed., Pearson.

References

Chan, S. P. (2007), *Contemporary engineering economics*, 4th Ed., Prentice Hall.

Drury, C. (2008), *Management and cost accounting*, London: Cengage Learning.

William, G, Elin M. and Koelling, C. P. (2009), *Engineering economy*, Pearson.

Mankiw, N. G. (2008), *Principles of economics*, 5th Ed., Thomson South-Western.

Parkin, M. (2008), *Economics*, 8th Ed., Addison Wesley.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	CCN2250 Engineering Mathematics
Assessment	40% coursework 60% examination

Aims

This subject equips students with fundamental knowledge of basic concepts and systems used in thermal science, including thermodynamic laws, properties and the state of substances, processes and cycles and their applications, work and heat transfer.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- find the correct phase and remaining properties for a substance of a set of properties
- find processes and compute associated heat and work transfer that is the most reasonable approximation of a physical set up
- compute heat, work transfer and change of internal energy by the First Law of Thermodynamics of a closed thermal system
- compute heat, work transfer and change of enthalpy by the First Law of Thermodynamics of an open thermal system
- evaluate heat, work transfer and efficiency for ideal heat engine cycles
- infer work output and the efficiency of power systems, engines and the COP of refrigeration cycles
- evaluate the rate of heat transfer via conduction, convection and the radiation of a one-dimensional system of a physical construction

Indicative Contents

- **Review of Basic Concepts and Properties of a Pure Substance**
Closed and open systems; Thermal properties; State and equilibrium; Temperature and the Zeroth law; Work and heat; Process and cycle; Ideal gas; Equation of state of ideal gas; Pure substance; Phase diagrams; Evaluation of thermodynamic properties.
- **The First Law of Thermodynamics**
Conservation of mass and control volume; The first law for a control mass undergoing a process/cycle; Internal energy and enthalpy; Constant volume and constant pressure specific heats; The first law for a control volume; The steady-flow energy equation and its applications.
- **The Second Law of Thermodynamics**
Heat engines and refrigerators; The second law of thermodynamics; Reversible and irreversible processes; Carnot cycle; Thermodynamic temperature scale; Inequality of Clausius; Entropy; The second law for a control mass/control volume; Isentropic efficiency.

- **Power and Refrigeration Cycles**

Vapour cycles; Rankine cycle; Gas cycles; Otto cycle; Diesel cycle and refrigeration cycle.

- **Psychrometry and Mixtures**

Dalton model; Amagat model; Wet-bulb and dry bulb temperatures; Psychrometric chart; Air conditioning.

- **Introduction to Heat Transfer**

Introduction of three modes of heat transfer (conduction, convection and radiation) and their governing equations; One-dimensional steady state conduction in parallel slabs and cylinders; Thermal resistance.

Teaching/Learning Approach

Lectures will deliver the fundamental knowledge in relation to thermodynamics and heat transfer. Tutorials will illustrate the application of fundamental knowledge to practical situations. Experiments will relate the concepts to practical applications and students will be exposed to hands-on experience, proper use of equipment and application of analytical skills on interpreting experimental results.

Assessment Approach

A variety of assessment tools will be used, including assignments, written laboratory reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Çengel, Y. A., Turner, R. H., and Cimbala, J. M. (2008), *Fundamentals of thermal-fluid sciences*, New York: McGraw-Hill.

References

Eastop, T. D. and McConkey, A. (1993), *Applied thermodynamics for engineering technologists*, Essex, England: Longman and New York: Wiley.

Sonntag, R. E. and Borgnakke, C. (2009), *Fundamentals of thermodynamics*, Hoboken, N.J.: Wiley.

Wark, K. and Richards, D. E. (1999), *Thermodynamics*, Boston, Mass.: WCB/McGraw-Hill.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	50% coursework 50% examination

Aims

This subject aims to provide students with the basic chemistry of the major food constituents (water, carbohydrates, lipids and proteins) and the minor food components (vitamins, pigments and food additives) and their interaction. The chemical reactions and changes in the constituents of major food products during harvesting, handling, processing, and storage will be emphasised.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- understand basic chemistry of food components and relate that with the quality attributes of food
- understand the impacts of chemical reactions occurring in foods on their safety, sensory and nutritional qualities and control chemical reactions in food
- explain the chemistry and physical characteristics of the food components during processing, cooking, storage and handling
- demonstrate their knowledge on food chemistry on the important control points and consequences of the reactions, and apply knowledge to solve real-life problems in food preparation, processing and storage
- utilise laboratory techniques to study the chemical properties of food constituents and their reactions

Indicative Contents

- **Introduction to Food Chemistry**
Major and minor components in foods; Examples of chemical reactions occurring in foods and the impacts on their safety, sensory and nutritional qualities.
- **Water**
Structure and properties of water and ice; Influence of water activity on food spoilage, packaging and food processing; Water binding and determination.
- **Carbohydrates**
Composition and properties of cereals, fruits and vegetables; Structure and properties of different carbohydrates including monosaccharides, oligosaccharides, polysaccharides and its related compounds; Gelatinization and retrogradation of starch; Modified starches, fibres and gums, pectin and fruit pectin gels; Caramelization and Maillard reactions.
- **Lipids**

Structure, properties and classification of lipids; Deteriorative reactions of lipids: Autoxidation and lipolysis; Modification of fats: hydrogenation, interesterification, acetylation and winterizing; Rancidity and antioxidants.

- **Protein**

Structure, properties and classification of protein; Reactions during processing: denaturation, non-enzymatic browning and cross-linking; Effect of heat, acid and rennin. Food protein system: milk, cheese, meat and bread; Chemistry of meat colour and effect of cooking on meat quality; Properties of wheat protein; Chemical and physical changes during bread-making.

- **Vitamins**

Water-soluble and fat-soluble vitamins; Effect of processing and storage on vitamins; Technical roles of vitamins.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of the chemistry of foods. Real-life examples and industrial practices are cited in lectures and tutorials to integrate chemistry and its application in food. Lectures will be conducted in an interactive manner, and students will be encouraged to participate in the activities.

Tutorials provide students with opportunities to broaden, enlighten and reinforce the general knowledge obtained in the lectures. Students will be involved in classroom activities, such as presentation and discussion, to strengthen the knowledge.

Assessment Approach

A variety of assessment tools including presentations, case studies, laboratories, group discussion, tests and examination will be used to assess the process of learning as well as analytical and communication skills. The assessment tasks including test and examination are designed to develop and assess students' achievement of the subject intended learning outcomes as well as generic skills including critical thinking, analytical skills during the process of learning.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Coulter, T.P. (2009), *Food: The chemistry of its components*, 5th Ed., The Royal Society of Chemistry.

References

Damodaran, S., Parkin, K.L. and Fennema, O.R. (2010), *Fennema's food chemistry*, 5th Ed., Boca Raton: CRC Press.

DeMan, J.M. (1999), *Principles of food chemistry*, 3rd Ed., Maryland: Aspen.

Mc Williams, M. (2005), *Food-experimental perspectives*, 5th Ed., Prentice Hall.

Owusu-Apenten, R. (2005) *Introduction to food chemistry*, 1st Ed., Boca Raton: CRC Press.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject provides students with basic skills for analysing and improving working methods with ergonomic considerations as well as the use and compilation of work measurement data, thereby allowing them to measure the work content of typical jobs. It also equips student with the ability to use statistical sampling techniques to measure effectively the utilised resources and to estimate their corresponding work content, and working knowledge on systematic layout planning for the productivity improvement in manufacturing and service industries.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- examine an existing work situation and conduct a work improvement program in order to identify low productivity in a manufacturing or service company
- apply appropriate recording techniques, or redesign new work methods and procedures, for a manufacturing or service company
- suggest an appropriate measurement technique to measure the standard time for the work involved
- design a work sampling study for various work situations
- identify the objectives of layout planning in both manufacturing and service companies
- evaluate the effectiveness and limitations of layout planning techniques under different constraints

Indicative Contents

- **Productivity**
Productivity; Causes of low productivity in organizations; Resources and outputs, their importance, and how they are measured.
- **Work Improvement**
Benefits, the systematic approach, identifying improvement areas in enterprises; Terms of reference; Approach to personnel, techniques of recording information; Systems flowchart; Design of documents in both hard and electronic format; Principles of computer screen layout; Examination of existing working methods and development of new methods and procedures; Implementation and continuous improvement.
- **Work Measurement**
Purposes in the manufacturing and service sectors; Techniques for industrial and clerical work, self-recording, and time study; Work sampling with observations at random and fixed time intervals;

Introduction to predetermined motion time systems for manufacturing and clerical works; Summary of work measurements; Selection of appropriate techniques; Factors that influence choice, including time, cost, accuracy, and purpose.

- **Layout Planning**

Objectives, types of layout found in the manufacturing industry and the clerical sector; Systematic layout planning, as applied to manufacturing and clerical work; Introduction to the design of flowlines in manufacturing; Line balancing techniques; Efficiency of assembly lines; Balance loss.

Teaching/Learning Approach

Lectures focus on the introduction and explanation of relevant concepts, theories and practices in quality engineering. Group discussions and activities might be arranged to stimulate students' interests and their awareness of practical implications of several concepts in industrial engineering techniques and methods.

Tutorials provide students with the opportunity to deepen their understanding and to further explore the applications of concepts and theories taught. The activities in tutorials normally include student presentations and discussions of problem sets.

Laboratory and case studies are used to integrate the taught topics, thus demonstrating to students how the various concepts and theories are interrelated and how they can be applied in real work situations.

Assessment Approach

A variety of assessment tools will be used, including presentation(s), case studies, written report(s), test(s) and examination. The assessments are designed to assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Badiru, A. B. (ed.). (2006), *Handbook of industrial and systems engineering*, CRC Press.

Meyers, F. E. and Stephens, M. P. (2005), *Manufacturing facilities design and material handling*, 3rd Ed., Prentice Hall.

Meyers, F. E. and Stewart, J. R, *Motion and time study for lean manufacturing*, 3rd Ed., Prentice Hall.

Salvendy, G. (ed.). (2001), *Handbook of industrial engineering: technology and operations management*, 3rd Ed., John Wiley & Sons, Inc.

Turner, W. C., Mize, J. H., Case, K. E. and Nazemetz, J. W. (1993), *Introduction to industrial and systems engineering*, 3rd Ed., Prentice Hall.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	60% coursework 40% examination

Aims

This subject provides students with the fundamental concepts in the study of the environment from an interdisciplinary perspective. Students will be introduced to the key environmental problems, the ways how natural balances are maintained within limits, and how human beings apply the knowledge to preserve and manage the environment. It equips students to tackle environmental problems in scientific ways.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- recognise the inter-relation among organisms and between organisms and the environment
- understand environmental pollution and its causes and impacts on nature and mankind
- understand how nature restores from pollution with limitations and once it deviated outside the limits, the preventive and remedial measures that humans can help
- apply their knowledge of general environmental science to protect the environment and improve the quality of life as a member of a society as well as a citizen in the “global village”

Indicative Contents

- **Our Limit Planet**
Understanding our environment; Ecological footprints; Environmentally sustainable society.
- **Inter-relation of Organisms in Ecosystem**
Ecosystems and ecological communities; Biological diversity and their inter-relation; Niche and ecological pyramids; Biological productivity and conservation.
- **Biogeochemical Cycles**
Cycles and flow of carbon, nitrogen, oxygen, phosphorus and sulphur.
- **Human Population Ecology**
Age structure; Factors influencing population size; Zero population growth.
- **Environmental Geology and Geospheric Pollution Control**
Land pollution; Ways of control and clean up.
- **Energy**

Human energy consumption, resources, limitation and the pollution associated with energy consumption, particularly the over-exploitation of fossil fuel in industry and transport; Renewable and sustainable energy sources.

- **Air Environment**

The atmosphere, climate, global warming, air pollution, photochemical smog, suspended particles, acid rain, and ozone depletion.

- **Water Environment**

Water quality, supply and distribution of drinking water, management of clean water resources, water pollution and treatment.

- **Waste Management**

Generation and classification of waste; 3R (Reduction, Recycling and Reuse) concept in waste management, treatment and the disposal of different types of municipal wastes.

- **Environment and Society**

Local laws and reinforcement agents of environmental protection; Current issues in Hong Kong or/and mainland China.

Teaching/Learning Approach

The subject comprises three parts: lectures, tutorials, field visits or/and laboratory sessions. Lectures will focus on the introduction and explanation of concepts and theories, which will be supported by hypothetical and real examples wherever appropriate. Tutorials will reinforce the general knowledge obtained in lectures to clarify queries and broaden the scope of topics covered in lectures. The activities in tutorials will normally include student presentations and discussions of problem sets and case studies. Field visits or/and laboratory sessions will provide students with the opportunity of applying theoretical knowledge and learning about the environment through first hand observations.

Assessment Approach

A variety of assessment tools will be used, including presentations, field trip participation, case studies, written reports, test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes as well as their generic skills, including critical thinking, analytical skills and communication skills.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Cunningham, W. P. and Cunningham, M. A. (2009), *Principles of environmental science: Inquiry and*

application, 5th Ed., McGraw Hill.

Tyler Miller, D. G. and Spoolman, S. (2008), *Environmental science: Problems, concepts, and solutions*, 12th Ed., Thomson.

References

Agriculture, Fisheries and Conservation Department, HKSAR.— Retrieved from <http://www.afcd.gov.hk/eindex.html>

Botkin, D. B. and Keller, E. A. (2010), *Environmental science: Earth as a living planet*, 8th Ed., NY: Wiley.

Cunningham, W. P. and Saigo, B. W. (2006), *Environmental science: A global concern*, 9th Ed., McGraw Hill.

Environmental Protection Department, HKSAR.— Retrieved from <http://www.epd.gov.hk/epd/eindex.html>

Miller, G. T. and Spoolman S. E. (2009), *Living in the environment*, 16th Ed., Cengage learning.

Wright, T. R. and Boorse, D. F. (2011), *Environmental science: Toward a sustainable future*, 11th Ed., Pearson Education.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

The aim of this subject is to provide students with a basic understanding of the nature of operations research and of the types of problems that it can solve. It enables students to choose the correct techniques to suit a particular problem with applications in resource management, network models, decision analysis and project management.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- implement several basic deterministic and stochastic operations research models
- synthesise the mathematical knowledge and techniques required in operations research model formulation
- execute and appraise the main algorithms for solving such operations research problems
- interpret the results of findings under the application of the algorithms
- evaluate critically for improvement of findings

Indicative Contents

- **The Nature of Operations Research**
The history and development of operations research; Art of modeling; Phases of operations research.
- **Linear Programming**
Formulation of linear programming models; Graphical solution of linear programs in two variables; Simplex methods; Dual problem in linear programming; Transportation problem.
- **Game Theory**
Two-person zero-sum game with applications.
- **Project Scheduling by PERT-CPM**
Arrow/network diagram representation; Critical path calculations, Construction of the time chart and resource leveling; Project control.
- **Dynamic Programming**
Mathematical formulation; Functional recursion equation; Bellman's Principle of Optimality; Multistage decision-making problem; Relationship between dynamic programming and linear programming.

Teaching/Learning Approach

The first learning outcome will be achieved via lectures. The second and the third will be developed via lectures, demonstration and exercises. The fourth and the fifth will be acquired via lectures and exercises.

Assessment Approach

Quizzes, short tests and assignments will be used to assess the second and the third learning outcomes. All the outcomes will be assessed in the examination.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Reading

Recommended Textbook

Taha, H.A. (2011), *Operations research - An introduction*, 9th Ed., Prentice Hall.

References

Hillier, F.S. and Lieberman, G.J. (2010), *Introduction to operations research*, 9th Ed., McGraw-Hill.

Winston, W.L. (2004), *Operations research: Applications and algorithms*, 4th Ed., Duxbury Press.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	CCN2042 Computer Programming
Assessment	100% coursework

Aims

This subject provides students with an opportunity to integrate and apply their IT knowledge and skills acquired in earlier semesters through a practical programming group project to obtain the Associate Degree of Information Technology award. It aims to develop and measure the capabilities of students to analyse and solve a complex problem during the course.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- conduct a search of the relevant literature, materials or sources relating to their selected problem area leading to an awareness, precise definition and specification of the problem
- think critically in the formulation of models and solutions, in the analysis of approaches, and in the evaluation of the outcomes
- implement a feasible software solution to the problem by using one or more high-level programming languages
- communicate and present their software product both in oral and written assignments clearly and concisely
- manage their group project efficiently, effectively and collaboratively

Indicative Contents

Under the guidance of the subject lecturer, students will be expected to work in groups on a feasible software solution for a particular problem. The total effort required from each student is 39 staff contact hours, 26 hours for unsupervised laboratory work and approximately 103 hours for independent study, which includes the total time spent on literature search, background reading, fact findings, project development, and report writing.

Projects will normally be proposed by the subject lecturer. However, students may propose projects in their areas of interest. Projects should be problem-oriented. There is no restriction to the nature of the problem but it should require a reasonably sophisticated software solution from students.

Teaching/Learning Approach

- Lectures will focus on the delivery of information related to project requirements and development environment.

- Tutorials will review students' architectural design of the software solution and approve work allocation proposed by students. Tutorial hours will also be used for progress monitoring and students' presentations of their design and the completed software solutions.
- Supervised laboratory hours will be used for environment familiarisation, progress demonstrations and guidance for problem solving in the laboratory environment.
- Each project group will be required to present their architectural design formally and demonstrate the operational features of their software product.

Assessment Approach

The deliverables required from each project group are: an initial project proposal, an architectural design of a software product, and a final report (including the software product).

Students will be assessed by the subject lecturer based on the following set of criteria and weighting:

i. Problem Identification and Specification (Literature Search)	20%
ii. Problem Solving (Critical Thinking)	40%
iii. Communication and Presentation (Demonstration and Reports)	30%
iv. Project Management and Self-Discipline	10%

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

The subject provides students with knowledge of the modern concept of quality, the appreciation of functions served by a quality management system, the ability to design quality products to satisfy both internal and external customers, the ability to control process performance by using appropriate statistical tools, and the ability to diagnose quality problems and develop sustainable improvement. The subject also helps students to develop their critical thinking and problem solving skills for their life-long learning.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- explain the basic concepts of quality
- apply the modern concepts of quality and a quality management system to solve the existing quality problems of a company
- obtain design quality from internal and external customers and formulate plans thereof
- use appropriate statistical tools for better process control
- diagnose quality problems and develop sustainable improvement

Indicative Contents

- **Quality Management Process**
Modern quality concepts; Quality planning, quality control and quality improvement; New and old 7-QC tools.
- **Design for Quality**
Reliability fundamental, life distribution, failure rate prediction and estimation; Failure mode, effects and criticality analysis (FMECA); Fault tree analysis (FTA); Taguchi approach to achieving quality; Design reviews.
- **Statistical Quality Control**
Process variation; Process capability study; Control charts; Statistical tolerancing; Acceptance sampling plans.
- **Partnership with Suppliers**
Vendor evaluation; Joint planning with suppliers; Best practices of partnership with suppliers.

- **Quality Management Systems**
ISO 9000 series of standards; Quality audits; Product and system certification programs.
- **Quality Improvement**
Project approach to quality improvement; Diagnostic techniques for identifying root causes; Implementing change and sustaining gains.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of relevant concepts, theories and practices in quality engineering. Group discussions and activities may be arranged to stimulate students' interests and their awareness of practical implications of different quality concepts.

Tutorials will provide students with the opportunity to deepen their understanding and to further explore the applications of concepts and theories taught. Activities in tutorials will normally include student presentations and discussions of problem sets.

Case studies will integrate the topics taught and explain to students how the various concepts and theories are interrelated and how they can be applied in real work situations.

Assessment Approach

A variety of assessment tools will be used, including presentation(s), case studies, written report(s), test(s) and an examination. The assessments are designed to assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

References

Gryna, F. M. (2001), *Quality planning and analysis: From product development through use*, 4th Ed., McGraw-Hill.

ISO 9001: 2000, *Quality management systems – Requirements*.

Montgomery, D. C. (2009), *Introduction to statistical quality control*, 6th Ed. John Wiley & Sons, Inc.

Neubeck, K. (2004), *Practical reliability analysis*, Prentice Hall.

Summers, D. C. S. (2006), *Quality*, 4th Ed., Prentice Hall.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	Nil
Assessment	40% coursework 60% examination

Aims

This subject provides students with basic concepts and techniques for the modelling and analysis of continuous-time signals and systems. It also provides students with an analytical foundation for further studies in Communication Engineering and Digital Signal Processing.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- describe the representations and classifications of the signals and systems
- produce mathematical model of linear continuous-time systems
- analyse signals and systems using time-domain, frequency-domain, and s-domain techniques
- identify the advantages and disadvantages of using different representations and modelling approaches
- apply software tools to analyse the design of continuous-time signals and systems

Indicative Contents

- **Signal Representation**
Signal classification; Continuous-time and discrete-time signals; Time-domain and frequency-domain representations.
- **Continuous-Time Systems**
Impulse representation; Linear time-invariant (LTI) systems; Properties of systems: causality, time invariance, linearity, systems with memory; Convolution representation.
- **Fourier Representations for Continuous-Time Signals**
Concept of frequency and spectrum; Frequency-domain representation of continuous-time signals; Continuous-time Fourier series and transform.
- **System Analysis**
Frequency response of LTI continuous-time systems; Ideal filters classification and frequency responses; Bandwidth; Examples of filters; Bode diagram; Applications of filters.
- **Laplace Transform**

Definition and properties; Inverse Laplace transform; Transform analysis of LTI systems; Poles and zeros; Relationship of Laplace Transform and Fourier Transform.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of basic concepts and essential knowledge in linear systems and signals, and how these can be applied to analyse and design continuous-time signals and systems. Tutorials will provide students with the opportunity to deepen their understanding of the concepts taught in lectures. Laboratory sessions provide students with the opportunity to use software tools in assisting the analysis and design of signals and systems.

Assessment Approach

A variety of assessment tools will be used, including assignments, laboratory report(s), test(s) and an examination designed to develop and assess students' achievement of the subject intended learning outcomes.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Roberts, M. J. (2008), *Fundamentals of signals and systems*, McGraw Hill.

References

Haykin, S. and Veen, B. V. (2003), *Signals and systems*, Wiley.

Kamen, E. W. and Heck, B. S. (2000), *Fundamentals of signals and systems: Using the Web and MATLAB*, 2nd Ed., Prentice Hall.

McClellan, James H., Schafer, Ronald W. and Yoder, Mark A. (2003), *Signal processing first*, Prentice Hall.

McClellan, James H., Schafer, Ronald W. and Yoder, Mark A. (1999), *DSP first: A multimedia approach*, Prentice Hall.

Level	3
Credits	3
Medium of Instruction	English
Prerequisites	CCN2042 Computer Programming
Assessment	50% coursework 50% examination

Aims

This subject aims to provide students with knowledge of software engineering, with a focus on the issues of software development processes – requirements analysis and specification, system and software design, implementation, testing and maintenance. In addition to the knowledge gained, students are given an opportunity to analyse system and user requirements, and apply appropriate software engineering techniques in software development. Students are also given an opportunity to practice how to apply the theories, concepts and techniques acquired during lectures through the actual accomplishment of a case study project.

The Subject Team is required to refer to the relevant Programme Curriculum Map(s) for the role of this subject in helping students achieve Programme-level Intended Learning Outcomes when preparing for the delivery and assessment of the subject.

Learning Outcomes

On successfully completing this subject, students will be able to:

- apply software engineering techniques in systems specifications and the design stages of software projects
- acquire concepts in software quality assurance and be able to test software applications
- apply software engineering techniques to real-life case study projects
- solve complex problems in groups and be able to communicate effectively through project presentations
- communicate in writing with technical documentation throughout the various stages of project development

Indicative Contents

- **Software Processes**
Software process models; Process iteration; Computer-aided software engineering (CASE).
- **Specification and Requirement Analysis**
Software requirements; Requirements analysis; Requirements specifications; Requirements validation; System models; Software prototyping.
- **Software Analysis and Design**
System analysis and models; Overview of software design process and strategies; Function-oriented design; Objected-oriented design.
- **Software Verification and Validation**
Software testing techniques; Static analysis; Design and code reviews.

- **Project Metrics**

Function point; Line of code; COCOMO models; Effort estimation.

Teaching/Learning Approach

Lectures will focus on the introduction and explanation of key software engineering concepts, techniques and methodologies, with specific reference to related software engineering cases in order to develop students' solid understanding of software engineering concepts, techniques and methodologies.

Tutorials will provide students with an opportunity to consolidate and enhance their knowledge in software engineering concepts, techniques and methodologies, through presentations and discussions of some software engineering cases and exercises. Assignments and project(s) allow students to deepen their understanding of the concepts taught in class and apply the theories and techniques to software design and testing. Students will be encouraged to work in groups to share and present ideas, review other's work, and develop teamwork skills.

Assessment Approach

A variety of assessment tools, including assignments, group project(s), test(s) and an examination will be designed to assess students' understanding of software engineering concepts and applicability of software engineering techniques. Also, students' critical and creative thinking, problem-solving and analytical skills are assessed through their practical software development project.

The actual weighting of individual coursework assessment components will be specified in the Teaching Plan for each class. The subject intended learning outcome(s) assessed in each coursework component will be communicated to students when the coursework assignment is given out.

Study Effort Required

Students are expected to spend approximately a total of 130 hours on activities such as attending lectures and tutorials, doing assignments, reading, revision and assessment.

Indicative Readings

Recommended Textbook

Sommerville, I. (2011), *Software engineering*, 9th Ed., Addison Wesley.

References

Lamsweerde, A. V. (2009), *Requirements engineering: From system goals to UML models to software specifications*, John Wiley.

Pfleeger, S. L. and Atlee, J. M. (2010), *Software engineering: Theory and practice*, 4th Ed., Prentice Hall.

Pressman, R. S. (2010), *Software engineering - A practitioner's approach*, 7th Ed., McGraw-Hill.

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