REGULATIONS FOR THE DEGREE OF BACHELOR OF COGNITIVE SCIENCE (BCogSc)

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

Definitions

BCo1[(1)] In these Regulations, and in the Syllabuses for the degree of BCogSc, unless the context otherwise requires -
'Department' means any department teaching in the degree programme;
'Course' means a course of instruction which normally carries 6 credits or in some cases 3 credits or multiples of 3, leading to one examination paper as defined in the syllabus;
'Paper' means one or more of the following tests: a theoretical examination paper, a practical examination paper, an assessment of field practice, a thesis, and a dissertation, or other assignments as prescribed in the syllabus of the course leading to it;
'Credits' means the weight assigned to each course relative to the total study load. The number of credits is indicative of the contact hours and/or study time associated with the course on a weekly basis;
'Prerequisite' means a course which candidates must have completed as specified to the satisfaction of the Head of Department before being permitted to take the course in question.

Admission to the degree

BCo2 To be eligible for admission to the degree of Bachelor of Cognitive Science candidates shall
(a) comply with the General Regulations;
(b) comply with the Regulations for First Degree Curricula; and
(c) complete the curriculum in accordance with the regulations that follow.

Length of study

BCo3 The curriculum shall normally extend over three academic years consisting of six semesters of full-time study, excluding the summer semesters. Candidates shall not in any case be permitted to complete the curriculum in more than four academic years, which being the maximum period of registration.

Completion of the curriculum

BCo4 To complete the curriculum, candidates shall:
(a) satisfy the requirements prescribed under (a)(i), (ii), (iii) and (b) of UG3 of the Regulations for First Degree Curricula;
(b) enrol in not less than 180 credits of courses, unless otherwise required or permitted under the Regulations;
(c) follow the required number of compulsory and elective courses as prescribed in the syllabuses of the equivalent of normally 60 credits for each year of study. For each semester, candidates shall select not less than 24 or more than 36 credits of courses, except for the last semester of study; and
(d) take a maximum of 66 credits of junior-level courses and the rest being senior-level courses as prescribed in the syllabuses over the entire period of studies;

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(1) This regulation should be read in conjunction with UG1 of the Regulations for First Degree Curricula.

Selection of courses

BCo5 Candidates who wish to change their selection of courses at the beginning of each semester may do so up to 2 weeks after the commencement of the semester. Requests for changes beyond the 2-week deadline will not be permitted, except for medical or other reasons accepted by the Faculty Board, and candidates' withdrawal from any course without permission will be given a failed grade.

Assessment and grades

BCo6 Candidates shall be assessed for each of the courses which they have registered. The assessment may take one or a combination of forms as prescribed in the syllabuses and shall normally include the candidates' coursework during the semester. Only those satisfactorily completed courses will earn credits.

BCo7 Candidates' performance in a course shall be assessed with the grading system as prescribed in UG5 of the Regulations for First Degree Curricula.

Failure in examination

BCo8 Candidates who fail in any course may, as directed by the Board of Examiners, be permitted to present themselves for re-assessment with or without repeating the failed course. The timing and the form(s) of re-assessment shall be decided by the Board of Examiners. Candidates shall not be allowed to repeat a course for which they have achieved a passed grade for upgrading purposes, nor shall they be permitted to repeat a course more than once. The failed grade will be recorded in the official transcripts. The new grade obtained after re-assessment of the same failed course will also be recorded and will replace the previous F grade in the calculation of the weighted grade point averages. As failed courses shall not be credited towards a degree, failed compulsory courses must be re-assessed.

Absence from examination

BCo9 Candidates who are unable because of their illness to be present for any written examinations may apply for permission to present themselves for a supplementary examination to be held before the beginning of the first semester of the following academic year. Any such application shall be made on the form prescribed within two weeks of the first day of absence from any examination. Candidates who fail to satisfy the examiners in one or more papers in such a supplementary examination shall be considered under the provisions made in these Regulations for failure at the first attempt at the examination, except that a further supplementary examination shall not be permitted.

Performance assessment

BCo10 At the end of each semester, candidates' performance shall be assessed for the purposes of determining

(a) their eligibility for progression to an award of the degree;
(b) their eligibility for the award; or
(c) whether they be required to be discontinued from the programme.

Progression of studies

BCo11 Candidates shall be permitted to progress if they have:

(a) not exceeded the maximum period of registration; and
(b) accumulated not less than 30 credits and attained a GPA of 1.00 or above over the first and second semesters; or
(c) accumulated not less than 30 credits and attained a GPA of 1.50 or above over the third and fourth semesters; or
(d) accumulated not less than 30 credits and attained a GPA of 1.50 or above over the fifth and sixth semesters; or
(e) attained a semester GPA of 1.50 or above at the end of each subsequent semester.

Those who have not been able to fulfill the requirements above shall be recommended for discontinuation from the programme under General Regulation G12.

Award of the degree

BCo12 To be eligible for the award of the degree of BCogSc, candidates shall have:

(a) achieved a weighted GPA of 1.00 or above;
(b) successfully accumulated a minimum of 180 credits; and
(c) satisfied the requirements in UG3 of the Regulations for First Degree Curricula.

Degree classification

BCo13 A list of candidates who have successfully completed all the degree requirements shall be published in five divisions: First Class Honours, Second Class Honours Division One, Second Class Honours Division Two, Third Class Honours, Pass. The classification of honours shall be determined by the Board of the Faculty at its full discretion by taking the overall performance of candidates and other relevant factors into consideration.

SYLLABUSES FOR THE DEGREE OF BACHELOR OF COGNITIVE SCIENCE

1. Curriculum requirements

Regulations BCo1 to BCo4 specify the requirements with which candidates have to comply for completion of the BCogSc degree programme. For the fulfillment of Regulation UG3 "Requirements for Graduation", candidates shall complete successfully the three language studies courses as well as a 3-credit broadening course of either Science and Technology Studies or Humanities/Social Sciences Studies, depending on their Arts or Science background and the streams of courses they select.
Furthermore, they should fulfill the Information Technology requirement as stipulated under Regulation UG3 by:

(a) taking a 3-credit course in Information Technology or
(b) taking LING1002 or
(c) obtaining a pass in an Information Technology proficiency test

2. Course registration

Course registration will take place before the commencement of each semester. In course registration, candidates should pay special attention to the pre-requisite and co-requisite requirements of courses as specified in the syllabuses. A prerequisite is a course which candidates must have completed in accordance with the conditions stipulated by the Head of Department before being permitted to take a course in question. A co-requisite is a course which candidates must take at the same time as the course in question.

3. Coursework and examination ratio

All courses in the curriculum, except the language studies courses and the broadening courses, are of 6 credits. Unless otherwise specified, the examination for each 6-credit course consists of one two-hour written paper and the final grading will be determined by performance in the examination and an assessment of coursework in the ratio of 75:25, unless otherwise specified. For courses offered by the School of Business, the assessment ratio will be announced by teachers at the beginning of each semester.

4. Course structure

a. In the first and second semesters, candidates should take a total of 60 credits of courses comprising the following:

COGN1001.	Introduction to cognitive science	(6 credits)
CSIS1117.	Computer programming	(6 credits)
CSIS1119.	Introduction to data structures and algorithms	(6 credits)
LING1001.	Introduction to linguistics	(6 credits)
MATH0801.	Basic mathematics I or	(6 credits)
MATH0802.	Basic mathematics II	
PHIL1002.	The human mind: an introduction to philosophy	(6 credits)
PSYC1001.	Introduction to psychology or	(6 credits)
PSYC1002.	How the mind works: explorations in basic thinking processes	
STAT0301.	Elementary statistical methods or	(6 credits)
STAT1301.	Probability & statistics I or	
STAT1306.	Introductory Statistics	
ECEN1901.	Academic English for social sciences	(3 credits)
CSSC1001.	Practical Chinese language course for social sciences students	(3 credits)

Candidates without a pass in Pure Mathematics at the HKALE must take either MATH0801 or MATH0802 as appropriate.

The remaining credits of junior-level courses should include the UG3 requirement courses and other junior-level courses offered by departments in the Faculties of Arts or Social Sciences subject to the permission of the department concerned and of the Programme Director.

Candidates should complete the following courses in or before the fourth semester:-

Science and Technology Studies or Humanities and Social Sciences studies	(3 credits)
Information Technology course or test as stipulated in the syllabuses	(3 credits or 0)

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b. In the third and subsequent semesters, candidates should take a total of not less than120 credits of courses comprising the following:

In the third and fourth semesters

Two out of the following three courses		(12 credits)
LING2001.	Computational linguistics	
LING2050.	Grammatical description	
LING2003.	Semantics: meaning and grammar	
PSYC0007.	Cognitive psychology	(6 credits)
PSYC0022.	Biological psychology or	(6 credits)
PSYC0051.	Perception	
ECEN2902.	English for professional communication for social sciences	(3 credits)

In the third and subsequent semesters

CSIS0270.	Artificial intelligence	(6 credits)
PHIL2230.	Philosophy and cognitive science	(6 credits)
PHYO2001.	Advanced cognitive neuroscience	(6 credits)
PSYC0008.	Advanced cognitive psychology	(6 credits)
PSYC0030.	Computational models of perception and behaviour	(6 credits)
STAT2311.	Computer-aided data analysis	(6 credits)

In the fifth or sixth semester

COGN3001.	Thesis in cognitive science	(12 credits)

All other courses should be selected from the list below, or from any senior-level course offered by departments in the Faculties of Arts or Social Sciences subject to the permission of that department and of the Programme Director. Candidates are expected to stream their courses according to whether their background is in Arts or Science subjects. Advice on this will be given by the Programme Director.

JUNIOR-LEVEL COURSES

Language Studies Courses

Department of Chinese

CSSC1001. Practical Chinese language course for social sciences students (3 credits)

This course aims at enhancing students' knowledge and skills in practical Chinese writing in the social sciences. Students will be introduced to simplified Chinese characters, and will be trained to write letters, proposals, reports, press releases and announcements. They will also acquire the skills in making public speeches and presentations. The course involves extensive use of Chinese IT applications.
Assessment: 50% coursework, 50% examination.

English Centre

ECEN1901. Academic English for social sciences (3 credits)

The course introduces students to features of speaking and writing in English in an academic context. Through small group work related to language and disciplinary issues the course develops abilities to produce clear and coherent spoken and written discourse for university study in the social sciences.
Assessment: 100% coursework.

ECEN2902. English for professional communication for social sciences (3 credits)

The course prepares students to communicate effectively and accurately and prepare themselves for workplace situations which entail the use of English. It requires students to investigate an issue relevant to their studies, improve their interview and presentation skills, and write various professional documents.
Assessment: 100% coursework.

Core Courses

Department of Computer Science

CSIS1117. Computer programming (6 credits)

The goal of this course is for students to learn the general principles of programming, including how to design, implement, document, test, and debug programs.
Assessment: 50% coursework, 50% examination.
Examination: One three-hour written paper.

CSIS1119. Introduction to data structures and algorithms (6 credits)

Arrays, linked lists, trees and graphs; stacks and queues; symbol tables; priority queues, balanced trees; sorting algorithms; complexity analysis.
Assessment: 40% coursework, 60% examination.
Examination: One three-hour written paper.
Prerequisite: CSIS1117 or CSIS0396 or CSIS0911 or ELEC1501.

Department of Linguistics

LING1001. Introduction to linguistics (6 credits)

This course is a prerequisite for all courses taught in the department, and a requirement for all students majoring in linguistics. It is an introduction to the basic topics of linguistics: the nature of human language, speech sounds and sound patterns, word formation, sentence structure, and the study of meaning and use.
Students will learn about the general structure that underlies all language as well as the great variety of existing human languages. The course gives plenty of practice in solving problems, analysing languages, including Chinese and English, and dealing with linguistics data.
Assessment: 50% coursework, 50% examination.

LING1002. Language.com: language in the contemporary world (3 credits)

The 21st century will be the Age of the Internet. What is the Internet all about? Essentially, it is about information and communication. Language is by far the most important means of communication and information exchange amongst human beings. To fully appreciate our own place in the contemporary world and to make the best of the many opportunities presented by new forms of communication, we need to know more about language. This course is an introduction to language: its nature and its relationship with facets of life in the contemporary world.

- Natural Language Processing: Can computers be trained to understand and produce human language?
- Machine Translation: Can computers do translations automatically and accurately?
- Corpus Linguistics: What kinds of language data are available on the Internet? How can they be used to make grammars and dictionaries?
- Chinese Language Computing: How many kinds of Chinese inputting methods are there? Which one suits you best?
- Internet Tools: What tools are available on the Internet for the learning of languages and linguistics?
- Human-Computer Interfaces: What is "ergonomics"? What is currently being done to improve the quality of communication between people and their computers?
- Speech analysis: What computer programs are available to analyse speech signals? How can computer speech analysis help language learners?

Assessment: 100% coursework.

LING1003. Language, Thought, and Culture (6 credits)

This course offers a survey of the study of language, with a focus on the relationship between language structure on the one hand and thought and culture on the other. It is designed as a complementary course to LING1001 'Introduction to Linguistics', and covers topics which cannot be dealt with in the other course due to the limitation of time. Through reading and participation in regular discussions on a selection of topics, students will gain a deeper understanding of the ways in which language is structured, learned, processed and used.
Assessment: 50% coursework; 50% examination.

Department of Mathematics

MATH0801. Basic mathematics I (6 credits)

Aim/Follow-up: To provide students with a basic background of calculus that can be applied in various disciplines, aiming at students not having done much mathematics beyond HKCEE mathematics. It can be followed by MATH0802/1803 or MATH1811/1812.

Contents:
- Sets, real numbers.
- Equations and inequalities.
- Functions, graphs and inverses.
- Exponential and logarithmic functions.
- Limits and continuity.
- Differentiation, chain rule, implicit differentiation.
- Higher order derivatives, curve sketching, maxima and minima.
- Definite and indefinite integrals, change of variables.

Examination: One 2½ hour written paper.
Assessment: 40% coursework, 60% examination.
Prerequisite: HKCEE Mathematics (Additional Mathematics or AS Mathematics and Statistics or Mathematics at higher level not allowed; Mathematics students (MATH, MAEF, CMOR & MAPH) are not allowed to take this course unless prior approval has been obtained from the Department for special reasons.) Students who have taken any one of the following: MATH1101, MATH1102, MATH1201, MATH1202 and MATH1803 are not allowed to take this course.

MATH0802. Basic mathematics II (6 credits)

Aim/Follow-up: To provide students with a more solid background of calculus of one and several variables and of matrices that can be applied in various disciplines, aiming at students having taken an elementary calculus course. It can be followed by MATH1803.

Contents:
- Set and functions.
- Limits and continuity.
- Differentiation, application, Taylor approximation.
- Integration, techniques, improper integrals.
- Functions of several variables, partial differentiation.
- Maxima and minima, Lagrange multipliers.
- Double integrals.
- Matrices, systems of linear equations, inverses, determinants.
- Eigenvalues and eigenvectors.

Examination: One 2½ hour written paper.
Assessment: 40% coursework, 60% examination.

Prerequisite: Additional Mathematics or AS Mathematics and Statistics or MATH0801 or MATH0803 or MATH0805 (AL Mathematics not allowed; Mathematics students (MATH, MAEF, CMOR & MAPH) are not allowed to take this course unless prior approval has been obtained from the Department for special reasons). Students who have taken any one of the following: MATH1101, MATH1102, MATH1201, MATH1202 and MATH1803 are not allowed to take this course.

Department of Philosophy

The final grade of courses offered by the Department will be determined by coursework assessment only which may include in-class tests.

PHIL1002. The human mind: an introduction to philosophy (6 credits)

This course is an introduction to philosophical issues about the mind. These include metaphysical questions about what minds are, whether the mind is something non-physical or whether it is some kind of a computer. Then there are the epistemological questions about the limitation of human knowledge, such as whether we can really know what other people's experiences are like, or whether there is a God.

Department of Psychology

PSYC1001. Introduction to psychology (6 credits)

Discussion of basic concepts in psychology and a preliminary survey of representative work carried out in various areas of psychological investigation, together with an investigation at some length of one such area.
Assessment: 40% coursework, 60% examination.
Eligibility: Students taking or having taken PSYC1002 or PSYC1003 are not allowed to take this course.

PSYC1002. How the mind works: explorations in basic thinking processes (6 credits)

We are all fascinated by the achievements of the human mind or brain. But we may also often ask ourselves how we can do things better, for example, remember more efficiently. This course will help us to understand more about the ways in which we solve problems, how we develop our abilities to communicate through language, and how we think creatively. It will help us to answer questions about why we forget things, how we manage to see things in the world around us, why we sleep and what our dreams mean. We will look at the ways in which the human brain operates, and how it manages to do such amazing things, through reference to research findings, theories and our own practical work. Lectures will include class demonstrations and activities, as well as videos, presented in a way to enhance your interest in, and memory of, what is already a fascinating area.
Assessment: 50% coursework, 50% examination.
Eligibility: Students taking or having taken PSYC1001 are not allowed to take this course.

Department of Statistics & Actuarial Science

STAT0301 (old code STAT1001). Elementary statistical methods (6 credits)

Research findings are often fully or partly supported by data. Data, which are often concerned with situations involving variability and uncertainty, are collected from an experiment or a survey. They are used to estimate the true value of a certain quantity or to test the acceptability of a certain new

hypothesis. Valid methods of analysing the data are thus essential to any successful investigation. The course presents the fundamentals of statistical methods widely used by researchers. There is no demand of sophisticated technical mathematics. Topics include: Presentation of data, Variability and Uncertainty, Measures of Central Tendency, Measures of Dispersion, Basic Probability Laws, Binomial Distribution, Poisson Distribution, Normal Distribution, Random Sampling, Sampling Distribution of the Mean, Central Limit Theorem, Point Estimation, Confidence Interval, Sample Size Determination, Hypothesis Testing, Inferences for Mean and Proportion, Simple Linear Regression and Correlation.
Assessment: 25% coursework, 75% examination.
Examination: One 2-hour written paper.
Prerequisites: HKCEE Mathematics. Not available to students with a pass in A-level Pure Mathematics. (Students taking or having taken STAT1301 or STAT1306 or STAT0302 or STAT1000 or STAT1003 or STAT1006 or STAT1007 or STAT1008 or STAT1801 or STAT0601 or STAT0602 are not allowed to take this course.)

STAT1301. Probability & statistics I (6 credits)

The discipline of statistics is concerned with situations in which uncertainty and variability play an essential role and forms an important descriptive and analytical tool in many practical problems. Against a background of motivating problems this course develops relevant probability models for the description of such uncertainty and variability and provides an introduction to the concepts, principles and methodology of statistical analysis. Topics include: Counting; selection with or without replacement; probability model; conditional probability; Bayes' Theorem; random variables; distribution functions; densities; examples of distributions; joint distributions; independence of random variables and of events; expectation; variance; covariance; correlation coefficient; moments; conditional distributions; conditional expectation; transformation of random variables; bivariate normal distributions; simple inference based on normal samples: one-sample and two-sample problems, hypothesis tests and confidence intervals for means and variances.
Assessment: 25% coursework, 75% examination.
Examination: One 2-hour written paper.
Prerequisites: A-level Pure Mathematics or AS-level Mathematics & Statistics or equivalent. (Students taking or having taken STAT0301 or STAT0302 or STAT1306 or STAT1001 or STAT1003 or STAT1006 or STAT1007 or STAT1008 or STAT1801 or STAT0601 or STAT0602 are not allowed to take this course.)

STAT1306. Introductory statistics (6 credits)

The discipline of statistics is concerned with situations involving uncertainty and variability. The interpretation of data needs special techniques when variability plays a role, as it usually does. Thus statistics forms an important descriptive and analytical tool of many scientific disciplines. Candidates with a mathematical background will find this course suitable, because the language of mathematics allows the subject of statistics to be presented with economy and clarity. Topics include: Presentation of data, Variability and Uncertainty, Measures of Central Tendency, Measures of Dispersion, Basic Probability Theory and Techniques, Random Variables and Probability Distributions, Random Samples, Point Estimation, Normal Sampling Theorem, Confidence Intervals, Hypotheses Testing, Simple Linear Regression and Correlation.
Assessment: 25% coursework and 75% examination.
Prerequisite: A-level Pure Mathematics or AS-level Mathematics & Statistics or MATH0801 or MATH0802. Students without these qualifications, but with grade C or better in A-level Physics, are deemed to have sufficient mathematical training to enrol in this course. Students who intend to major in "Risk Management" or "Statistics" should take STAT1301 instead of this course. (Students taking or having taken STAT1301 or STAT0301 or STAT0302 or STAT1801 are not allowed to take this course.)

All Departments

COGN1001. Introduction to cognitive science (6 credits)

This course allows students to gain an understanding of the workings of the mind in the context of the technological advances that are increasingly shaping our lives and our society. The course introduces students to the domain, goals and methods of Cognitive Science, showing how different disciplines converge in their enquiry into how the brain works. With integration as the overall objective, there will be a series of lectures given by specialists within each of the major disciplines (Computer Science and Information Systems, Linguistics, Philosophy, Physiology and Psychology) that contribute to Cognitive Science. Each series of lectures will present case studies highlighting research findings which show how similar questions about the functioning of the human mind are answered from the perspective of each contributing discipline.
Assessment: 40% coursework, 60% examination.

Faculty of Social Sciences

FOSS1002. Appreciating social research (6 credits)

Social science researchers investigate social phenomena from different perspectives using different research methodologies. This course will provide a chance for students to take a close look at social science research, and attain a general understanding of the different research orientations taken by social sciences researchers. After taking the course, students will be more knowledgeable and equipped to understand general research findings in social sciences. Emphasis will be on nurturing critical thinking skills and aptitudes for appreciating research evidences encountered in future studies and daily experiences.
Assessment: 100% coursework.

FOSS1003. Masters in social thought (6 credits)

Over time, outstanding master thinkers in different social scientific disciplines have produced landmark studies and ingenious conceptual frameworks to illuminate the world we live in. This course introduces students to the works and ideas of selected 'masters' in social sciences, in particular how they continue to enlighten us, by applying their insights to examine the pressing social issues that surround us in the intricately globalized world of today. The basis for our enquiries will be from the works of writers as diverse as Sigmund Freud, Erich Fromm, J.S. Mill, Emile Durkheim, and Karl Marx amongst others.

1. After taking the course, students will learn the ways of thinking and major insights of selected masters of social sciences.
2. Students will also be able to make use of their insights to reflect on some of the major issues they face in life.

Assessment: 100% coursework.

SENIOR-LEVEL COURSES

Department of Architecture

ARCH1007. Visual communications I (3 credits)

This course covers exercises in two- and three-dimensional spatial elements, i.e. dynamics of visual form; perspectives, projections and basic graphic techniques. The content of the course serves as an

introduction by dealing with the clarification of certain fundamental areas of visual enquiry and to develop an awareness, inquisitiveness and a sensitive appreciation of this field.
Assessment: 100% coursework.

ARCH2008. Visual communications IV (3 credits)

The course is an extension of Visual communications I dealing with fundamental areas of visual enquiry. Specialized options such as photography, pen and ink, line drawings, life and figure drawings, Chinese calligraphy and painting are offered.
Assessment: 100% coursework.

School of Business

BUSI0059. Information systems analysis and design (6 credits)

This course examines the application of information technology to business and analyses the various stages of a systems life cycle with the development of computer-based information systems. Techniques for modeling data and process requirements will be discussed.
Prerequisite: BUSI1003 or CSIS1127.

Department of Computer Science

CSIS0250. Design and analysis of algorithms (6 credits)

The course studies various algorithm design techniques, such as divide and conquer, and dynamic programming. These techniques are applied to design highly non-trivial algorithms from various areas of computer science. Topics include: advanced data structures; graph algorithms; searching algorithms; geometric algorithms; overview of NP-complete problems.
Assessment: 50% coursework, 50% examination.
Examination: One three-hour written paper.
Pre/Co-requisite: CSIS0912 or CSIS1119 or ELEC1501.

CSIS0270. Artificial intelligence (6 credits)

AI programming languages; logic; theorem proving; searching; problem solving.
Assessment: 50% coursework, 50% examination.
Examination: One three-hour written paper.
Prerequisite: CSIS0912 or CSIS1119.

CSIS0271. Computer graphics (6 credits)

Overview of graphics hardware, basic drawing algorithms, 2-D transformations, windowing and clipping, interactive input devices, curves and surfaces, 3-D transformations and viewing, hidden-surface and hidden-line removal, shading and colour models, modelling, illumination models, image synthesis, computer animation.
Assessment: 50% coursework; 50% examination.
Examination: One three-hour written paper.
Prerequisite: CSIS1119 or CSIS0912.

CSIS0278. Introduction to database management systems (6 credits)

This course studies the principles, design, administration, and implementation of database management systems. Topics include entity-relationship model, relational model, relational algebra and calculus, database design and normalization, database query languages, indexing schemes, integrity, concurrency control, and query processing.
Assessment: 60% coursework, 40% examination.
Examination: One three-hour written paper.
Prerequisites: CSIS0912 or CSIS1119 or ELEC1501.
Eligibility: Students taking or having taken BUSI0052 are not allowed to take this course.

CSIS0297. Introduction to software engineering (6 credits)

This course introduces the fundamental principles and methodologies of software engineering. It covers the software process and methods and tools employed in the development of modern systems. The use of CASE tools and the UML are emphasized. The course includes a team-based project in which students apply their new knowledge to a full development lifecycle, including maintenance.
Assessment: 50% coursework, 50% examination.
Examination: One three-hour written paper.
Pre-requisite: CSIS0911 or CSIS1117 or CSIS0396 or ELEC1501.
Eligibility: Students taking or having taken CSIS1401 are not allowed to take this course.

CSIS0311. Legal aspects of computing (6 credits)

To introduce students to the laws affecting computing and the legal issues arising from the technology. Contents include: the legal system of Hong Kong; copyright protection for computer programs and databases; intellectual property issues on the Internet; patent protection for computer-related inventions; computer contracts and licences; electronic transactions; data protection.
Assessment: 30% coursework; 70% examination.
This course may not be taken with LLAW3065.
Examination: One three-hour written paper.
Prerequisite: CSIS1117 or CSIS0396 or CSIS0911 or ELEC1501.

CSIS0315. Multimedia computing and applications (6 credit-units)

This course introduces various aspects of the interdisciplinary and multidisciplinary field of multimedia computing. Current developments of technologies and techniques in multimedia will also be covered. Applications of multimedia techniques are also highlighted through a media production course project. Major topics include: what are media, audio, acoustics and psychoacoustics, MIDI, basic compression techniques, video compression techniques, standards, and current multimedia technologies.
Assessment: 50% coursework; 50% examination.
This course may not be taken with BUSI0068.
Examination: One three-hour written paper.
Prerequisite: CSIS1119 or CSIS0912.

CSIS0317. Computer vision (6 credits)

This course introduces the principles, mathematical models and applications of computer vision. Topics include: image processing techniques, feature extraction techniques, imaging models and camera calibration techniques, stereo vision, and motion analysis.
Assessment: 50% coursework, 50% examination.
Examination: One three-hour written paper.
Prerequisites: CSIS1119 or CSIS0912 or ELEC1501.

CSIS0320. Electronic commerce technology (6 credits)

This course aims to help students to understand the technical and managerial challenges they will face as electronic commerce becomes a new locus of economics activities. Topics include Internet and WWW technology, information security technologies, public-key crypto-systems, public-key infrastructure, electronic payment systems, and electronic commerce activities in different sectors.
Assessment: 40% coursework; 60% examination.
Examination: One three-hour written paper.
Prerequisite: CSIS0278 or CSIS0912.

CSIS0322. Internet and the World Wide Web (6 credits)

Introduction and history; networks, internetworking, and network protocols; TCP/IP and related protocols; client-server model and programming; distributed applications; Domain Name System; Internet applications: TELNET, mail, FTP, etc.; Internet security; intranet and extranet; virtual private networks; World Wide Web; Web addressing; HTTP; HTML, XML, style sheets, etc.; programming the Web: CGI, Java, JavaScript, etc.; Web servers; Web security; Web searching; push technology; other topics of current interest. This course may not be taken with BUSI0063.
Assessment: 40% coursework, 60% examination.
Examination: One three-hour written paper.
Prerequisite: CSIS1117 or CSIS0396 or CSIS0911 or ELEC1501.

CSIS0396. Programming methodology and object-oriented programming (6 credits)

Introduction to programming paradigms; abstract data types and classes; object-oriented program design; object-oriented programming; program development, generation and analysis tools; scripting and command languages; user interfaces and GUIs; program documentation.
Assessment: 50% coursework; 50% examination.
This course may not be taken with CSIS1422.
Examination: One three-hour written paper.
Co-requisite: CSIS1117 or CSIS0911 or ELEC1501.

CSIS0521. Concepts and tools for software development (6 credits)

This course will introduce the following concepts and techniques for software development: key steps in a software development life cycle; software development methodologies; components of a web-based software tools; installation of servers (e.g. web server, database server etc.); web programming (e.g. PhP, mySQL); key issues in human-user interface; data visualization (e.g. visualization on the web with SVG). Examples will be drawn from practical cases such as bioinformatics software tools development. The emphasis is on how to formulate the computational problem based on the user requirements and the related practical concerns for the development of the software.
Assessment: 50% coursework; 50% examination.
This course is open to non-Engineering students only.
Pre-requisite: CSIS1117.

Department of Linguistics

LING2001. Computational linguistics (6 credits)

How can the computer help us analyse sentences? Can a computer really understand language? These are some of the questions explored in this course. The course will introduce basic concepts and techniques of natural language understanding and Chinese language information processing.
Assessment: 100% coursework.

LING2002. Conversation analysis (6 credits)

How is it that we manage to have conversations in which lots of different people take part and everyone has a chance to speak as well as to listen? At least, most of the time we manage that all right. What rules are followed when we have conversations? On this course you will discover what these rules are and learn how to describe the structure of conversations.
Assessment: 100% coursework.

LING2003. Semantics: meaning and grammar (6 credits)

This course focuses on structural and cognitive aspects of meaning which are relevant to the description and theory of grammar. Examples will be drawn from Cantonese, Mandarin and English together with some other European and Asian languages.
Assessment: 100% coursework.

LING2027. Phonology: an introduction to the study of sound systems (6 credits)

The notion of the phoneme and its place in phonology; distinctive features; phonological processes and their description; rules and representations.
Assessment: 100% coursework.

LING2031. Phonological theory (6 credits)

Current theories of phonology, including Autosegmental phonology, Metrical theory, Lexical phonology, Optimality theory and other models.
Assessment: 100% coursework.

LING2032. Syntactic theory (6 credits)

The course explores recent theoretical approaches to syntax, focusing on generative grammar.
Assessment: 100% coursework.

LING2050. Grammatical description (6 credits)

This course aims at giving the students a comprehensive introduction to basic concepts used in the description of morphology and syntax, independent of any model of grammar. Exercises accompany the topics introduced. Example analyses are drawn from various languages. The following topics in morphology and syntax will be covered: words, morphemes and morphs, word classes, immediate constituents, phrase structure, functional relations, sentence structure.
Assessment: 100% coursework.

Department of Philosophy

The final grade of courses offered by the Department will be determined by coursework assessment only which may include in-class tests.

PHIL2220. The mind (6 credits)

This course will focus on some central issues in the philosophy of mind, issues which arise when we think of the relations between mind and the world. Among the issues to be discussed in the course are the following: What does having a mind enable us to do? Do non-human animals have minds? What is the relationship between mind and rationality?

PHIL2230. Philosophy and cognitive science (6 credits)

We shall look at some of the philosophical issues involved in studying minds and behaviour scientifically. We might discuss questions such as: Can we explain all mental phenomena in computational terms? What is consciousness? What is the role of language in thinking? How useful are neural networks in understanding the mind?

PHIL2240. Consciousness in philosophy and neuropsychology (6 credits)

Consciousness has become a huge research topic in philosophy and cognitive science in recent years. Scientists have uncovered all kinds of interesting phenomena related to consciousness, and yet there is no consensus as to what a proper theory of consciousness should look like. In this course we focus on recent studies on consciousness in neuropsychology, and consider whether consciousness correlates with particular physical events in the brain, and how the empirical studies bear upon philosophical problems about consciousness. We might also investigate the topic of self-consciousness, discussing split-brain patients and the evidence for and against self-consciousness in infants and primates.

PHIL2510. Logic (6 credits)

This is an introductory course on basic formal logic. We shall study basic logical concepts, as well as formal systems of logic including sentential and predicate logic. We shall learn how logical notations can be used to identify logical truths, and to formalize and evaluate arguments. If we have time we might discuss more advanced topics such as the connection between computation and logic, and Gödel's Theorems. Students are expected to know some elementary formal logic before studying this course. To prepare for the course, they can either take PHIL1006 Elementary Logic, or study the online material on logic produced by the Department. For further details, please contact the Department.

PHIL2610. Philosophy of language (6 credits)

What is a language, and what is involved in knowing or understanding a language? In this course we will see how philosophers and linguists answer such questions as the following: What can logic tell us about the grammar of natural languages? Are human beings born with a universal grammar? What makes a word meaningful? What is the difference between what we mean and what we convey when we say something? How does a metaphor work? Can we learn something from slips of the tongue about the nature of language?

Department of Physiology

PHYO2001. Advanced cognitive neuroscience (6 credits)

An advanced course concerning the structural and functional organisation of the human cerebral cortex and its role in cognition. Focus on recent experimental evidence from neurophysiology and other techniques aimed at elucidating the relationships between neural activity and cognitive events.
Assessment: 40% coursework; 60% examination.

Department of Psychology

PSYC0007. Cognitive psychology (6 credits)

This course covers how humans learn to deal with information from the environment. Topics include various aspects of perception, memory, concept structure and learning, and thinking. Students will be involved in conducting experiments on cognitive functioning as part of the coursework.
Assessment: 40% coursework, 60% examination.
Prerequisite: PSYC1001 or PSYC1002.

PSYC0008. Advanced cognitive psychology (6 credits)

This course covers some recent approaches in the field of cognitive psychology. Topics may include the cognitive unconscious in perception and memory, conditioning versus cognitive learning in humans, neural networks and information processing, as well as other topics reflecting the interests of the teacher.
Assessment: 40% coursework, 60% examination.
Prerequisites: PSYC0007.

PSYC0022. Biological psychology (6 credits)

This course provides an introduction to biological aspects of behaviour. The topics include: biological bases of behaviour, development, learning, memory, and abnormal psychology; the nervous system; processes of brain maturation; genetic influences; psychophysiology.
Assessment: 70% coursework, 30% examination.
Prerequisite: PSYC1001 or PSYC1002.

PSYC0030. Computational models of perception and behaviour (6 credits)

An advanced course that explores some areas of psychological research where computational models can usefully be developed. Computer models, constrained by neurobiological data, can help reveal how networks of neurones subserve perception and behaviour. Detailed attention will be given to computational analysis of problems in visual perception, biological sensing more generally, and motor behaviour. Computational theories of human visual perception, in particular David Marr's seminal work, will also be discussed. While not an essential prerequisite, students are recommended to have taken Perception (PSYC0051) or a course in sensory neuroscience.
Assessment: 100% coursework.
Prerequisite: either PSYC1001 or PSYC1002.

PSYC0051. Perception (6 credits)

An introduction to sensation and perception, with an emphasis on the psychology of seeing. Specific topics include the following: examination of the functional properties of sensory systems (e.g., auditory system, color vision, vestibular system, touch and kinaesthesia); phenomenology of sensation and perception; psychophysical limits of perceptual systems; goals of sensory coding; structure and evolution of sensory systems; theories of perception. Perceptual experiments will be conducted by students in laboratory classes.
Assessment: 100% coursework.
Prerequisite: either PSYC1001 or PSYC1002.

Department of Sociology

SOCI0042. Social research methods (6 credits)

The aims of this course are to introduce the basic principles and procedures which form the foundation of social research, to review the main types of research designs and methods of data collection used in social research, and to provide a set of criteria for analysing and evaluating the products of social research. The types of research covered will include participant observation, experimental design, survey methods and documentary analysis. Ethical and political issues in social research will also be discussed.
Assessment: 60% coursework, 40% examination.

Department of Statistics & Actuarial Science

STAT2311 (old code STAT0401). Computer-aided data analysis (6 credits)

A wide range of statistical analyses and methods are presented using data sets generated from social sciences research and scientific studies. These analyses deal with designed experiments in the laboratory or field-work setting together with data from less-rigorously planned observational studies. Measuring uncertainty, describing patterns of variability, and describing the inter-relationship between several variables are therefore essential aspects of social science and scientific investigations. These aspects require a good understanding of statistics. This computer-oriented but non-mathematical course develops the important concepts and methods of statistics. Although no knowledge of a programming language is required, the course makes extensive use of computers. This is made possible by high-quality, but user friendly statistical software like JMP or SPSS. Topics include: Data exploration, formulation of testable hypotheses, the evaluation of evidence and forecasting on the basis of past experience.
Assessment: 40% coursework, 60% examination.
Examination: One 2-hour written paper.
Prerequisites: STAT1306 or STAT0301 or STAT0302 or ECON1003 or ECOL2006 or STAT1001 or STAT1003 or STAT1006 or STAT1008 or STAT2001 or STAT0602 or (CogSc students having taken STAT1000 or STAT1301). (Students taking or having taken STAT0603 are not allowed to take this course.)

All departments

COGN3001. Thesis in cognitive science (12 credits)

This course comprises an independent research study or dissertation in an area of cognitive science of the candidates' choice, subject to availability of supervision.
Assessment: 100% coursework.

COGN3002. Seminars in cognitive science (6 credits)

This course is a tutorial-based reading course in specialist areas of cognitive science research and interest. It will include presentations and group discussion of research and issues of interest within cognitive science, providing an opportunity for students to examine critically the cognitive science approach to understanding intelligent systems.
Assessment: 100% coursework.

Faculty of Social Sciences

FOSS0007. Policy/Practice research project (9 credits)

This course is under the Social Exposure Programme of the Faculty which aims at assisting students to develop critical thinking, analytic ability, and to improve their effective interpersonal and communication skills. A student or a group of students of not more than 3 may choose a policy/practice research project of individual interest from a list provided. The responsible teacher of the project will provide supervision to the student(s). The work involved should not be less than 160 hours during term time and/or summer time. The works involved can be literature review, data collection, data analysis, report writing, or a combination of the above work.
Assessment: project involvement: journal: 25%, 30%, project presentation: 15%, seminar participation: 15%.

FOSS0008. Social science internship (9 credits)

This course is under the Social Exposure Programme of the Faculty which aims at preparing students to develop a good understanding of social issues through first-hand practical experience and applying knowledge and skills learned to real life situations. Students are expected to become more socially aware, develop critical thinking and analytic ability, and improve their effective interpersonal and communication skills. A pair of students will be placed in an NGO, a public authority or a Centre affiliated to the Faculty for a period of not less than 160 hours during term time or summer time. Students will work for the organization under the supervision of its relevant staff. The work may involve preparation of reports, carrying out research work or other relevant activities.
Assessment: journals: 25%, project involvement: 30%, seminar participation: 15%, project presentation: 15%, group report: 15%.

FOSS0009. Social justice summer internship (9 credits)

This Internship is similar to the Social Science Internship except that a social science student will pair up with a law student. They will work full time in the internship organization during summer for a period of not less than 160 hours. The pair will work for the organization at the supervision of its relevant staff. They may help with preparation of reports, carrying out research work or other relevant activities. The uniqueness of this scheme is for social science students to acquire the knowledge and understanding of the socio-legal aspects of different social issues through the collaborations and interaction with law students.
Assessment: journal: 25%, project involvement: 30%, seminar participation: 15%, project presentation: 15%, individual report: 15%.