

**Course list for Cross-institutional Course/Subject Enrolment Scheme for Research Postgraduate Students
(2019-20, Term 2)
Institution: The Chinese University of Hong Kong**

Course Code	Course Title	Units	Keyword Syllabus or Brief Subject Description	Pre-requisites (if any)	Result Grade	Medium of Instruction	Remarks, if any
ANTH6020	Seminars in Research Methods	3	This seminar will introduce you to a range of techniques for collecting and analyzing data. The course will also seek to help you prepare for your own research and field work. Being a seminar, the course will require extensive reading; classes will be discussions rather than lectures, and you are expected to ask questions and volunteer answers. Other teachers and advanced graduate students will be invited to participate in the course.	—	A-F	English	Subject to teacher's approval on individual application
BASA6002	Research Methodology in Behavioural Studies II	3	Theory building, statistical analysis, research design	BASA6001 or equivalent or with instructor's permission	A-F	English	—
CENG5050	Hardware for Human Machine Interface	3	This course teaches topics in designing hardware for human machine interface. Principles and applications of sensors like pressure, light, sound, motion and electromagnetic transducers are introduced. Computer interfacing techniques for signal sampling, amplification, filtering, classification and interpretation are also discussed. Design examples may include Electroencephalography (EEG) signal analysis, human motion capturing, music signal interpretation and production. Functioning and control of actuators will also be studied.	—	A-F	English	Advisory: Students are expected to have taken CENG2400 or ESTR2100 or equivalent.
CHEM5620	Synthetic Methods in Organic Chemistry	2	The aim of this course is to provide students with comprehensive knowledge of synthetic methods in organic chemistry and deeper understanding of factors that control reactions and product formations. Details in retrosynthetic analysis, modern synthetic tools, named organic reactions and natural product synthesis will be discussed. Specific topics including oxidation, reduction, olefination, protecting groups, functional groups interconversion, carbonyl chemistry, cycloaddition, rearrangement and organometallic reagents will be covered.	A good understanding of organic chemistry	A-F	English	Students should be able to approach CU computer system as lecture notes are to be distributed through Web CT
CHEM5680	Introduction to Chemical Biology	2	This course will cover basic knowledge of biochemistry and bioorganic synthesis and selected topics in modern chemical biology. Part I: the first 7 weeks will be knowledge-based, lecture type classes introducing the basic knowledge of biochemistry and bioorganic chemistry of peptides (and proteins), enzymes, and other biomolecules such as carbohydrates and lipids. A Problem Set and a midterm will be used to evaluate students' learning performance. Part II: the next 6 weeks will be a training-based, literature intensive course composed of a variety of learning methods including lectures, seminar and group discussion sections. Students will be evaluated based on (1) literature reading, (2) presentations, (3) classroom performance and (4) research summary. Two of the four major biomacromolecules, peptides (and proteins) and carbohydrates will be introduced to the students through lectures. Enzymes and chemical genetics will also be introduced. Students will learn how to view protein structure through a tutorial class. The teacher expects the students to learn basic knowledge of bioorganic chemistry and biochemistry, and also grasp the recent progress in chemical biology.	A good understanding of organic chemistry and biochemistry	A-F	English	—
CHES6001	Critical Cultural History of China: Early China	3	This course will propose a multi-disciplinary approach to the study of Chinese cultural history conceived of as a succession of modes of rationality (philosophical, bureaucratic, and economic processes of rationalization). The focus will be on the moments of paradigm shift from one mode of rationality to another. For each of these moments, cultural facts and artifacts—thought, literature, ritual—will be examined in relationship to changing social, political, and economic systems. This semester will cover the periods of the Warring States (481-221 BCE) and the Six Dynasties (220-589 CE). The first laid the social and cultural foundations for the emergence of the imperial mode of rationality; the second saw the Buddhist "conquest" of China and the emergence of a rationality defined by the opposition of the Three Teachings to shamanism, that is, of a clear contrast between elite and popular culture.	—	A-F	English	Quota for visiting students: 7
CHLL6261	Special Topics in Classical Chinese Texts II	3	Critical study of topics that pertain to compilation, transcription, transmission, commentaries, and annotations of ancient Chinese texts. Students are required to conduct research on a chosen topic under guidance.	—	A-F	Putonghua	Quota for visiting students: 10
CHLL6451	Special Topics in Modern Chinese Literature (I)	3	Critical study of issues, other than genres and authors, in modern Chinese literature. Topics may focus on research methodologies, literary thoughts, literary schools, regional literature, comparative literature, etc.	—	A-F	Putonghua & Cantonese	Quota for visiting students: 10
COMM5771	Topical Studies in Global Communication I Human Rights, Culture, and the Global Legal Imagination 全球傳播專題研究(一)	3	This course introduces students to the dynamics of human rights thinking through a combination of historical, cultural-humanistic, political, and legal perspectives. The challenge for students of communication, therefore, will be to sensitize themselves to social justice and moral judgment through multiple perspectives on human rights.	—	A-F	English	Quota for visiting students: 10
CSCI5050	Bioinformatics and Computational Biology	3	This course introduces several core topics in bioinformatics and computational biology. Each topic will be discussed from three aspects: 1) motivation and concepts, 2) computational problems and methods, and 3) available tools and data. The topics include basics in molecular biology, high-throughput experiments and data preprocessing, sequencing and alignment, motifs and domains, ontology and functional enrichment, biological networks and data mining, secondary and tertiary structures, and other latest developments in this research area.	—	A-F	English	—
CSCI5160	Advanced Algorithms	3	This course will study the design and analysis of exact and approximation algorithms using advanced techniques such as combinatorial methods, probabilistic methods, linear programming, semidefinite programming, and spectral methods.	—	A-F	English	—
CSCI5210	Advanced Computer Graphics and Visualization	3	This course provide in-depth treatment of the following advanced computer graphics and visualization topics: radiosity rendering and global illumination, procedure texturing and modeling, image- based rendering, stereo imaging, real-time volume graphics and interactive visualization.	—	A-F	English	Advisory: Students are expected to have taken CSCI3260 or its equivalent.
CSCI5320	Topics in Graph Algorithms	3	This course will discuss graph theory and graph algorithms with emphasis on the algorithmic aspects of graph theory. The course will cover classical topics such as search techniques, connectivity, colouring, matching and covering, network flows, planarity, traversability, perfect graphs, and NP-completeness of graph problems. The course will also discuss FPT algorithms for solving graph problems.	—	A-F	English	—

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CSCI5550	Advanced File and Storage Systems	3	This course aims to introduce important systems-level research topics in the design and implementation of practical file and storage systems. Topics include: (i) storage device organization (e.g., disk drives, disk arrays, RAID, solid state drives), (ii) file system design (e.g., log-structured file systems, distributed file systems), (iii) data availability (e.g., erasure coding techniques, data integrity protection), (iv) data consistency (e.g., journaling techniques), (v) data compression (e.g., deduplication), (vi) benchmarking (e.g., I/O metrics, benchmarking tools), etc. Depending on the current research trends, the course also discusses the latest applied storage topics, especially related to scalable and dependable big data management.	—	A-F	English	Advisory: Students are expected to have taken CSCI3150 or ESTR3102 or equivalent.
CSCI5610	Advanced Data Structures	3	This course introduces advanced techniques for designing data structures with strong theoretical guarantees. Topics to be covered include (i) generic methods such as partial persistence, logarithmic rebuilding, weight balancing, filtering, independent sampling, bit twiddling, tabulating, etc., and (ii) specific structures such as the interval tree, the priority search tree, cuckoo hashing, the van Emde Boas structure, range min structures, locality sensitive hashing, the suffix tree, the count-min sketch, etc.	CSCI2100 or ESTR2102	A-F	English	—
CULS6070	Special Topic – Viral Memory	3	History is something we ordinarily encounter through school textbooks, period films, and nostalgia blogs. Instead of being completely objective and unimpeachable, however, history is a malleable narrative, which can assume multiple iterations through its creation, exhibition, consumption, and dissemination. This course seeks to examine how the memory of the past acts as a cultural resource and a political mechanism that could be harnessed in varied ways for the sake of producing, reinforcing, or transforming collective identity and agency. The course will start by exploring the epistemological entanglements of history and memory. It will revisit how prominent historians and genealogists such as Braudel, Hobsbawm, Foucault, White, Guha, Stoler, and Chakrabarty conceptualize their methods of knowledge production. Seeing the archive as a physical and virtual repository of the past where recollections are stored, managed, and silenced, the course will examine how it tends to record the perspectives of elite institutions, officials, and scholars. Uncovering how the official narrative of history is promulgated through public monuments and museum exhibitions, the course will look at efforts by Subaltern Studies, History from Below, Forensic Architecture, and Digital Humanities to excavate the voices of the marginalized. Lastly, it will analyze how memory takes on affective modes of nostalgia or trauma in confronting the stifled aspirations of violent repressions.	—	A-F	English	—
DSME6622	Advanced MIS Research Seminar	3	This course provides students with a broad-based exposure to research in MIS and its research methodologies, including survey, case study, experimental design, and field work. Various theories used in MIS research will also be discussed to provide students with background on approaches to theory building and theory testing. Seminal MIS articles will be reviewed to orient students to the emergence of MIS discipline and its research tradition and trend.	—	A-F	English	—
EASC5104	Advanced Topics in Atmospheric Dynamics	3	This course introduces the basics of geophysical fluid dynamics. Topics include fundamental governing equations, scale analyses of geophysical flows in the Earth's atmosphere and ocean, filtered models, waves, vorticity, quasi-geostrophic theory, barotropic and baroclinic instabilities.	—	A-F	English	Subject to teacher's approval on individual application
EASC5140	Seismology	3	This course focuses on the concepts and theory of elastic wave propagation and physics of earthquake. The topics covered include the Earth's internal structure, material elasticity, travel time tomography, seismic ray theory, ray tracing, and earthquake source parameter. Methods and field practice of seismological survey and programming methods of data processing will also be introduced.	—	A-F	English	Subject to teacher's approval on individual application
EASC5520	Numerical Methods and Modeling for Earth and Atmospheric Sciences	3	This course covers the principles of numerical methods and modeling relevant for earth and atmospheric sciences applications. Topics include: optimization; interpolation; finite differencing; numerical solutions to ordinary and partial differential equations; programming numerical models; filtered models; boundary conditions; subgrid-scale processes; data assimilation; applications in earthquake, climate, air quality, weather forecast and groundwater models. Python will be used throughout the course.	—	A-F	English	Subject to teacher's approval on individual application
ECON5150	Applied Econometrics	3	Please visit: http://www.econ.cuhk.edu.hk/econ/en-gb/student-life/programmes/course-offered/postg	Graduate Econometrics or Mathematical Statistics	A-F	English	—
ECON5160	Game Theory	3	Please visit: http://www.econ.cuhk.edu.hk/econ/en-gb/student-life/programmes/course-offered/postg	Graduate Microeconomics and Macroeconomics	A-F	English	—
ELEG5060	Applied Functional Analysis and Approximation Theory	3	This course provides graduate students with a panorama of functional analysis and approximation theory in multiple dimensions, adopting a systematic dual point of view (functions defined through a collection of measurements, weak formulations). The emphasis will be laid on the simplest, albeit modern mathematical concepts and mechanisms, with a view to avoid extraneous formalism and more abstract (e.g., topological) considerations. This knowledge will be used to model engineering problems (e.g., data acquisition, sampling), to devise methods for solving exactly or approximately the inverse problems that are related (e.g., resulting from partial differential equations), and to analyze the error resulting from the approximations. Main topics: Theory of Measure and Integration, Hilbertian Analysis, Distribution Theory and Fourier, Calculus of variations, Partial differential equations, Approximation Theory	—	A-F	English	Quota for visiting students:5
ENGE5210	Advanced Studies in Literature	3	The course provides students with an opportunity to explore the foundational genres of literature – fiction, drama, and poetry — at an advanced level. Students will be expected to understand and utilize technical terms for the study of literature as well as enrich their overall awareness of the history of Western literature from ancient times to the present.	—	A-F	English	Subject to approval by the Division Head
ENGE5230	Major Author(s)	3	An intensive study of the life, the imaginative character, and the works of a single author or authors who have played major roles in the development of Western literature. Authors studied may vary from year to year.	—	A-F	English	Subject to approval by the Division Head

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ENGE5270	Major Contemporary Novels	3	This course explores, at an advanced level, the nature of twentieth-century fiction. Topics to be considered include developments in the form of narration particularly in relation to modernism and postmodernism, the changing concerns of twentieth-century writers, and the relationship of the novel to other contemporary genres. Throughout, attention will be paid to ways in which the novel remains a powerful vehicle for the communication of ideas in our time.	—	A-F	English	Subject to approval by the Division Head
ENGE5420	Sociolinguistics	3	This course provides a survey of the relationship between social variables (e.g., age, gender, ethnicity, attitude, style, location, time, social status, power, politics, and network membership) and variations in language in use. Some key areas covered include language attitudes and choice, language maintenance and shift, code alternation, contact languages, standard and vernacular languages, language planning and policy, regional and social dialects, influences of age and gender on language in use, politeness theory, linguistic stereotyping, as well as culture and language. Sociolinguistic research methods are also introduced.	—	A-F	English	Subject to approval by the Division Head
ENGE5550	English for Specific Purposes	3	This course will introduce students to the field of teaching English for Specific Purposes (ESP) by exploring the primary context for ESP teaching and research (academic institutions of higher education, the workplace, and professional institutions and organizations). The course will examine the main issues and concepts related to the field in terms of their historical and discipline-specific relevance. Topics include the concepts of learner needs, target situation analysis, authenticity, discourse community, genres, and specialist knowledge. The course will equip students with a better understanding of how to design language programmes to suit the needs of a specific group of learners.	—	A-F	English	Subject to approval by the Division Head
ENGE5560	Second Language Teaching	3	This course provides a survey of theory and practice in the teaching of English as an additional language. Topics include current and historical views of second language instruction, a survey of factors which affect the second language learning process, and the presentation of language learning and teaching models. Issues related to English language teaching in Chinese/Asian contexts are highlighted.	—	A-F	English	Subject to approval by the Division Head
ENGE5600B	Special Topics in Applied English Linguistics	3	This course provides an opportunity for students to be exposed to some current developments in certain area of applied linguistic research in English. The topics vary according to the research expertise of the staff or the visiting academics.	—	A-F	English	Subject to approval by the Division Head
ENGE5610	Issues in Contemporary Applied English Linguistics	3	This course will focus on topics in applied English linguistics which are not discussed in depth in other AEL postgraduate courses. The topics will vary according to the expertise of the staff or visiting academics. Students will be expected to develop an understanding of the topic through reading and discussion of related research and data analysis.	—	A-F	English	Subject to approval by the Division Head
ENGE5630	Cognitive Linguistics and Its Applications in Language Teaching	3	This course provides an overview of the discipline of cognitive linguistics and its application in second language teaching. Cognitive linguists understand the language that we encounter every day as input from which we draw inferences about form-meaning relationships, typical patterns, and schemata. The course addresses core concepts in this area of study including: prototype, perspective, categorization, image schema, figure and ground, metaphor, metonymy, entrenchment, embodied cognition, gesture, construction grammar, attention and salience, and contingency learning. The course discusses how cognitive linguists design pedagogical methods and stimulate learners to explore the deeper meanings of grammatical forms.	—	A-F	English	Subject to approval by the Division Head
ENGE5950	Special Topic(s) in Critical Studies	3	This course is designed to investigate areas of specialisation normally not covered under generic studies or literary history. It may involve any one of the following areas in the comparative and interdisciplinary studies of literature: thematology, textual criticism and reader response, aesthetics, Western critical theories and Chinese literary studies, problems in the histories of literary criticism; twentieth-century critical theories; literature and the other arts; literature and sociology; literature and philosophy; literature and history; literature and language; literature and culture. Students are allowed to take the above course more than once and gain the units each time they pass the course. However, students cannot take courses with the same course code more than once in a single term.	—	A-F	English	Subject to approval by the Division Head
ENGG5403	Linear System Theory & Design	3	Linear system theory and design is the core of modern control approaches, such as optimal, robust, adaptive and multivariable control. This course aims to develop a solid understanding of the fundamentals of linear systems analysis and design using the state space approach. Topics covered include state space representation of systems; solution of state equations; stability analysis; controllability and observability; linear state feedback design; observer and compensator design, advanced multivariable control systems design, decoupling and servo control. This course is a must for higher degree students in control engineering, robotics or servo engineering. It is also very useful for those who are interested in signal processing and computer engineering.	—	A-F	English	—
ENGG5601	Principles of Biomechanics and Biomaterials	3	This course focuses on biomechanics (biostatics, biodynamics, mechanics of biological solids), biomaterials (metals, ceramics, synthetic polymers, natural polymers, composites; characterization of biomaterials; biomaterial scaffolds for regenerative medicine) & clinical applications in the musculoskeletal system (including, sports, traumatology, and rehabilitation), cardiovascular system, and dentistry.	—	A-F	English	—
IERG5130	Probabilistic Models and Inference Algorithms for Machine Learning	3	This course is a graduate level introduction to probabilistic models and inference algorithms, which constitute a common foundation for many methodologies in machine learning and related fields (e.g. computer vision, natural language processing, and data mining). The course begins with a detailed exposition of probabilistic graphical models, then proceeds with various inference methods, including variational inference, belief propagation, and Markov Chain Monte Carlo (MCMC). In the second part of the course, we then discuss the connections between probabilistic models and risk minimization, as well as how optimization-based methods can be used in large-scale model estimation. Finally, the course will briefly discuss nonparametric models, e.g. Gaussian processes, and their use in practical applications. Advisory: Basic knowledge on linear algebra, probability theory, optimization are required.	—	A-F	English	—

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IERG5200	Channel Coding and Modulation	3	This course covers classic and new channel coding, and related modulation schemes. Topics include Reed-Solomon codes, convolutional codes, concatenated codes, low-density parity-check (LDPC) codes, and optionally, OFDM, MIMO, and network coding.	—	A-F	English	—
IERG5590	Advanced Topics in Blockchain	3	This course aims to cover advanced topics on blockchain. The focus will be on advanced topics like permissionless blockchain, Ethereum, smart contract, mining pool, permissioned blockchain, anonymity, new consensus, sidechain, ripple, offchain and lightning network. Advisory: Students are expected to have solid foundations on operating systems and database systems.	—	A-F	English	—
IERG6120	Advanced Topics in Information Engineering I	3	This course aims to introduce to postgraduate students the important, promising, and exciting area of smart grid. After the study of this course, the students are expected to understand the basic physical and mathematical concepts, the fundamental components, the substantial objectives and tasks, and the underpinning control and operation mechanisms of smart grid. Furthermore, through literature review, the students will learn about state of the art in smart grid system design and deployment and form initial ideas regarding the current limitations, urgent needs, and difficult challenges in various smart grid research areas. The students will also develop a deep understanding about the interdisciplinary nature of smart grid research across electrical engineering, control theory, operations research, data analytics, and information technology. The background knowledge, the critical thinking process, and the academic training throughout this course will lay a solid foundation and plant a vibrant seed for students to prepare for and carry on a future career that contributes to the broad endeavor of academia, industry, and government on smart grid, smart city, energy efficiency, and sustainability. This course features a synergy of lectures, student presentations, and literature reviews. Specifically, the instructor will spend 30% of in-class time to give lectures on fundamentals and selected topics of smart grid and the other 70% of time on student presentations. Every week, there will be 2-4 classic or recent papers on related topics assigned to the students as reading materials. Students are required to write reviews for the papers they read. They are also scheduled to give presentations in class to introduce the papers they read and demonstrate their thoughts about the contributions and limitations of these papers and their ideas to improve. The final grade of every student is composed of homework assignments on fundamentals (20%), weekly paper reviews (40%), in-class presentations (15%), and a final literature review on a selected topic of smart grid (25%). The topics to be covered by this course tentatively include: power grid fundamentals, economic dispatch and optimal power flow, frequency and voltage control, renewable energy integration, demand response and load management, electric vehicle operations, power grid state estimation and situation awareness, information and communication technologies in smart grid, data analytics in smart grid, and interconnected smart city infrastructure.	—	A-F	English	—
IERG6130	Advanced Topics in Information Engineering II	3	This course covers fundamental topics relevant to reinforcement learning, a computational approach to learning whereby an agent tries to maximize the total amount of reward it receives while interacting with a complex and uncertain environment. Recent progress and advance topics for deep reinforcement learning will be also discussed.	—	A-F	English	—
LING6903	Syntactic Theory	3	This course provides students with a concise and critical introduction to the central issues and perennial problems in syntactic theory, with special focus on the Government and Binding Theory and the Minimalist Program. Through exercises, class discussions, and presentations, students will gain a solid understanding of the concepts and principles which have been of central significance in the recent development of syntactic theory. Whenever relevant, data from Mandarin and other languages will be used to motivate and instantiate the analyses that pertain to the central issues in syntactic theory.	—	A-F	English	—
LING6904	Topics in Phonetics	3	This course introduce major theories and research topics in phonetics. Issues in both speech production and perception will be introduced. Both segmental and suprasegmental aspects of speech sounds will be investigate. Emphasis will be placed on the acoustic nature of speck sounds. Phonetic interfaces with other sub-branches of linguistics will also be discussed. Students will gain a good understanding of the complex of speech communication.	—	A-F	English	—
LING6940	Linguistics Research Seminars	1	This course aims to engage students in the Department's Linguistics Research Seminars and in-house research activities. These activities will deepen students' knowledge of various fields of specialization, and help prepare them for their future academic and professional careers.	—	A-F	English	—
LING6953	Topics in Neurolinguistics & Psycholinguistics	3	This course introduces students to selected topics concerning neurobiology of language as well as language representation, processing and production. Major theoretical debates and contemporary issues that address different aspects of language will be discussed. The selected topics vary from term to term, but may include syntactic and phonological priming as evidence for language representation, computational modeling of language phenomena, neural correlates of first and second language acquisition, explanatory neurolinguistics, comparative studies of language processing ,models of speech production, lexical tone processing, cross-modal studies of language processing, and the bilingual brain.	—	A-F	English	—
LING6970	Special Topics in Linguistics	3	From time to time, a course focusing on a specific area of linguistics or applied linguistic research that is not covered in the regular linguistic programme may be offered. Students are allowed to take this course more than once (but not within the same term), and gain the units each time they pass the course. However, students cannot take the same topic twice.	—	A-F	English	—
LING6980	Research Methodology	3	The course adopts an interactive, problem-based approach, with an aim to training students in conducting linguistics research on a topic of their interest. Focus will be on linguistic analysis and empirical methods in language research. Students may be required to conduct linguistic research through field trips.	—	A-F	English	—

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MAEG5070	Nonlinear Control Systems	3	This course consists of two parts. The first part is analysis of nonlinear systems, which includes state space description of nonlinear control systems, phase plane analysis of second order dynamic systems, Lyapunov's stability theory such as Lyapunov's first method, second method, Barbalat's lemma, and total stability. The second part is design of nonlinear control systems, which includes Jacobian linearization, feedback linearization, sliding mode control, and backstepping method.	—	A-F	English	—
MAEG5080	Smart Materials and Structures	3	The contents of this course include overview of smart materials technology, characteristics of smart materials such as piezoelectric materials, magnetorheological fluids, and shape memory alloys. It covers smart actuators and sensors; structural modelling and design; dynamics and control for smart structures; integrated system analysis; and applications in biomedical devices, precision machinery, transportation, and buildings.	—	A-F	English	—
MAEG5090	Topics in Robotics	3	This course aims to teach students a range of classical and state-of-the-art topics through a series of examples. The focus will be on how different fundamental topics, such as linear and non-linear control, optimization, path planning, visual servo control, robot kinematics and dynamics, and machine learning, are applied through practical applications within robotics. Different application scenarios that may be used to show different fundamental topics include: mobile manipulation, bio-inspired and humanoid robots, robotic walking, rehabilitation robotics, medical and surgical robots, cable-driven robots, and autonomous ground, water and aerial vehicles.	—	A-F	English	—
MAEG5110	Quantum Control and Quantum Information	3	The field of quantum information science includes quantum control and quantum information. It is a new area of interdisciplinary research involving physicists, computer scientists, mathematicians and engineers. The course is an introduction to this rapidly expanding field. It covers basic quantum mechanics including quantum entanglement and quantum measurement; the modeling and control of quantum mechanical systems; quantum error correction; quantum communication and quantum information theory.	—	A-F	English	—
MEDP6003	Biostatistics	1	This is a course in biostatistics which is compulsory to be taken during the course of studies for M.Phil. or Ph.D. students in the Faculty of Medicine, CUHK. This course will cover below topics: - ANOVA I - ANOVA II / Nonparametric tests - Correlation / Linear regression I - Linear regression II / Logistic Regression	Passed MED6002 Biostatistics in Term 1	A-F	English	Quota for visiting students: 10
MKTG6152	Advanced Seminar in Marketing – Behavioral Studies	3	This seminar covers major behavioral research areas in marketing. It is focused on the development and selected current research topics in areas such as service marketing, consumer behavior, strategic marketing and cross-cultural marketing. It also introduces the on-going research projects of faculty members in the Department of Marketing.	MKTG2010 & MKTG3020 or equivalent or with instructor's permission	A-F	English	—
MKTG6192	Advanced Cultural Psychology for Business Research	3	This course is designed to survey the major theories and research in understanding human behaviors in cultural contexts.		A-F	English	—
MKTG7162	Advanced Seminar in Marketing – Models & Technologies	3	This seminar course emphasizes on analytical and technical aspects of marketing studies. It will cover a wide range of topics including consumer choice modeling, marketing-mix models, competitive marketing strategies, data mining, and research advances in e-marketing. The course will also introduce some basic analytical tools from areas of decision science, economics, and statistics.	MKTG2010 & MKTG3020 or equivalent or with instructor's permission	A-F	English	—
MUSC6201	Ethnomusicology II: Methods and Fieldwork	3	Extensive training in fieldwork research methods relevant to music via readings and student-directed ethnographic projects.		A-F	English	Quota for visiting students: 2
PHYS5320	Photonics: Materials and Devices	3	A broad survey of the materials used and the generation, transmission, modulation, detection and harvesting of light by various optoelectronic devices. Emphases are placed on the operational principles and applications of both devices and materials in communications, data processing, light emission, lasing, light control, photovoltaics and photodetection, as well as on related state-of-the-art scientific research.	—	A-F	English	—
PHYS5420	Classical Electrodynamics	3	This course is intended to provide an introduction to the theory of classical electrodynamics at the graduate level. The emphasis is on the problems of electromagnetic radiation and the covariant formulation of electrodynamics. Selected topics of current research interest will also be discussed.	—	A-F	English	Quota for visiting students: 3
PHYS5510	Advanced Statistical Mechanics	3	This course provides an introduction to the major ideas and methods in equilibrium statistical mechanics as well as in nonequilibrium statistical physics. Topics will be selected from the statistical mechanics of magnetic systems; interacting fluids and soft matter; theory of critical phenomena and the renormalization group; stochastic dynamics and nonequilibrium processes; introduction to quantum statistical mechanics; and other topics of current interest in statistical physics.	—	A-F	English	—
PHYS5610	Introduction to Biophysics	3	Biophysics investigates biological phenomena using theoretical and experimental approaches derived from physics, such as statistical mechanics, fluid mechanics, and optics. This course provides an introduction to biophysics for postgraduate students with no biology background. Students will be introduced to basic biology and physics concepts relevant to the course, followed by topics including the functions of biomolecules, dynamics of regulatory networks, physics of cellular behavior, and recent development of live-cell manipulation techniques. Through this course, students will become familiar with the scope and basic approaches of biophysics research, learn how to perform computer simulations on biomolecules, and develop interest in exploring new territories of biophysics. Students should have undergraduate level thermodynamics and statistical mechanics before taking this course.	—	A-F	English	—

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PUBH6004	Environmental Health and Risk Assessment	1	Through a few selected important topics, this course examines how environmental factors have an impact to the health of people and the community, and what we can do to prevent or minimize the negative impacts. This course will cover below topics: - Environment and health - Work and health - Air pollution and health - Risk assessment in environmental health	—	A-F	English	Quota for visiting students: 5
SEEM5160	Advanced Data Science for Systems Engineering	3	This graduate level course introduces the basic concepts of statistical pattern processing and machine learning algorithms.	—	A-F	English	—
SEEM5570	Numerical Methods in Finance	3	Monte Carlo simulation, Computational dynamic programs and reinforcement learning, applications in derivatives pricing, risk management, and economics.	Knowledge of calculus, linear algebra, probability and stochastic models.	A-F	English	—
SEEM5650	Integer Programming	3	General concepts: total unimodularity, relaxations, bounds, duality Solution methods: branch-and-bound, cutting planes, branch-and-cut, Lagrangian relaxation, local search, metaheuristics Application areas: logistics and supply chain management	—	A-F	English	—
SEEM5680	Text Mining Models and Application	3	text retrieval, text classification, machine learning for text data, latent semantic indexing, topic modeling	—	A-F	English	—
SOCI6003	Advanced Statistical Analysis	3	Please refer to Department website http://www.soc.cuhk.edu.hk/MPhil-PhD/en/courselist.html	—	A-F	English	—
SOCI6004	Advanced Qualitative Methods	3	Please refer to Department website http://www.soc.cuhk.edu.hk/MPhil-PhD/en/courselist.html	—	A-F	English	—
STAT5020	Topics in Multivariate Analysis	3	This is an advanced course on multivariate analysis. Topics may include: Multivariate central theorem, and its applications, factor analysis, structural equation models, and latent variable models.	For students in MPhil, or PhD Statistics or permission of Instructor	A-F	English	Subject to teacher's approval on individual application. Quota for visiting students: 10
STAT5030	Linear Models	3	This course introduces fundamental elements related to linear statistical models. The major substance of this course covers: classical distribution theory; full-rank linear models; non-full-rank linear models; advanced topics related to modern linear models, including penalized regression, variable selection and screening methods, etc.	For students in MPhil, or PhD Statistics or permission of Instructor	A-F	English	Subject to teacher's approval on individual application. Quota for visiting students: 10
STAT6040	Studies on Selected Topics II	3	This is a graduate-level seminar course. Recent topics on computer-intensive statistical method are selected for discussion. For this semester, we will focus on probabilistic models and statistical methods in computational biology/Bioinformatics.	Undergraduate level probability and statistical inference	A-F	English	Quota for visiting students: 10