Course list for Cross-institutional Course/Subject Enrolment Scheme for Research Postgraduate Students

(2020-21, 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
ACCT7199	Current Topics in Accounting Research	3	The course explores current topics in a specific area of accounting research. Through a combination of lectures and seminars, students discuss recent literature and academic works to enhance their knowledge and skill to conduct research in accounting utilizing tools and paradigms at the frontier of such technologies.	For students in MPhil-PhD Accountancy	A-F	English	Quota for visiting students: 4
ANTH5250	Seminars in the Anthropology of China I	3	Students in this course will read and discuss the major ethnographies and other anthropological studies on China. Readings will provide students with general knowledge of the anthropology of China, but will vary year to year depending on the teacher.	_	A-F	English	Subject to teacher's approval on individual application
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	This course is the continuation of BSA6001. The course covers selected advanced topics associated with the behavioral research process. In particular, students will learn how to apply various types of research design and statistical methods, and how to interpret the results. Sample topics include among others experimental design, measurement theory, cross-cultural research, significance tests and statistical power, interaction and moderating effects, multi-level analysis, confirmatory factor analysis, and structural equation modeling. Even though mathematical proofs and statistical derivations will be reduced to a minimum, having the knowledge of basic statistics and matrix manipulations will be helpful.	BASA6001	A-F	English	_
CHLL6231	Selected Works of the Philosophers (Zi) I	3	Critical study of works selected from pre-Qin philosophical writings. Topics focus on composition, transmission, authenticity, commentaries, and thoughts. Students are required to conduct research on a chosen topic under guidance.	_	A-F	Putonghua & Cantonese	Quota for visiting students: 10
CHLL6351	Special Topics in Pre-Modern Chinese Fiction and Drama I	3	Critical study of classical Chinese drama and fiction, with emphasis on particular authors, works, or schools.	_	A-F	Putonghua	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: 5
CSCI5010	Practical Computational Geometry Algorithms	3	This course will discuss data structures and algorithms for solving fundamental problems in computational geometry with good theoretical guarantees. Topics covered include line-segment intersection, polygon triangulation, convex hull, linear programming, orthogonal range searching, point location, voronoi diagram, delaunay triangulation, and so on.	CSCI2100 or CSCI2520 or equivalent	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	Exclusion: ENGG5102
CSCI5210	Advanced Computer Graphics and Visualization	3	This course provides in-depth treatment of the following advanced computer graphics and visualization topics: radiosity rendering and global illumination, procedure texturing and modelling, image-based rendering, stereo imaging, real-time volume graphics and interactive visualization.	CSCI3260 or equivalent	A-F	English	_
CSCI5460	Virtual Reality	3	This course introduces the fundamental and advanced research topics in virtual reality (VR), including VR tools & metaphors, multi-sensory interactions, geometric and behavior modeling, touch-enabled interfaces, real-time navigation, human factors in immersion, augmented reality systems, and internet-based VR applications. The web-based virtual reality interfaces plus 3D graphics engines build up the developing tools for testing the innovation for the advanced VR research and real-time applications.	CSCI3260 or equivalent	A-F	English	_
CSCI5570	Large Scale Data Processing Systems	3	This course introduces contemporary systems for large scale data processing. Topics to be covered include, but are not limited to: (1) advanced database systems (including distributed, parallel, columnar, in-memory systems, etc., for both OTLP and OLAP applications); (2) NoSQL and NewSQL systems; (3) distributed data stores; (4) big data analysis systems; (5) graph processing systems; (6) stream processing systems; and (7) data visualization. Advanced algorithms for data analytics (e.g., distributed machine learning algorithms, streaming algorithms, etc.) that are implemented using the systems introduced in the course will also be discussed.	_	A-F	English	_

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DSME6632	Research Sem in Operations & SCM	3	This seminar is designed to provide students with the latest knowledge on research issues, theories and methodologies in the areas of Operations and Supply Chain Management. Students will be required to read research papers, critique and synthesize other people's research work, and identify areas for future research. They are also required to present and discuss other people's research and their own research proposals. The instructor and scholars from different universities will also be invited to present their latest research. Topical areas will include Operations Supply Chain Strategy, Total Quality Management, Service Operations Management, Innovation and New Product Development, Lean Thinking, Business Process Improvement/Innovation, Relationship Management and Supply Chain Integration, Supply Chain/Logistics Network Design and other topics.	_	A-F	English	_
EASC5010	Solid and Fluid Mechanics	3	This course presents the fundamentals of continuum mechanics illustrated with earth system science applications. Background materials on matrices, vectors and differential operators are first reviewed. The following topics will be covered: tensors and their properties; stress and strain; constitutive equations for Hookean elastic solid and Newtonian viscous fluid; mechanical properties and rheology of geomaterials; Eulerian and Lagrangian kinematics; momentum equations; vorticity and divergence; applications in geomechanics, seismology, atmospheric dynamics, and oceanography.	_	A-F	English	Subject to teacher's approval on individual application.
EASC5101	Advanced Topics in Geophysics	3	Recent advances in theoretical and applied geophysics, with focus on geodesy, seismology, geoelectricity, geomagnetism and gravity, and their applications in natural hazard reduction, energy resources and environmental issues.	_	A-F	English	Subject to teacher's approval on individual application.
EASC5220	Tropical Meteorology	3	This course introduces the phenomena and motions in the tropical atmosphere. The topics covered include the role of the tropics in the global energy and momentum balance, ITCZ, subtropical high, upper-level anticyclones, weather and climate phenomena including meso-scale convective systems, tropical waves, the Hadley and the Walker circulation, El Nino-Southern Oscillation, tropical cyclones, Madden Julian Oscillation, and monsoons.	_	A-F	English	Subject to teacher's approval on individual application.
EASC5240	Air Pollution Science and Engineering	3	This course will cover a variety of topics related to air pollution science and engineering. Topics include: indoor and outdoor air quality (including particulate matters (PM) and gases pollutants); air pollution measurement and statistics; air quality meteorology and dispersion models; principles and challenges of air pollution control and measurement.	_	A-F	English	Subject to teacher's approval on individual application.
EASC5510	Statistical Methods and Data Analysis for Earth and Atmospheric Sciences	3	This course covers the theoretical basis and practical applications of data analysis relevant for earth system science. This course aims to introduce students to Earth and environmental data manipulation, from sampling, reading and writing, to statistical analysis and parameter estimation, to time series analysis, to plotting and visualization. Topics include: digital signal processing, sampling techniques; probability distributions; hypothesis testing; correlation analysis; linear and nonlinear regression; statistical forecasting, harmonic analysis and spectral analysis; principle component analysis; and geostatistics. Tutorials will be based on real geophysical examples including remote sensing and in situ observations, as well as model data.	_	A-F	English	Subject to teacher's approval on individual application.
EASC5602	Selected Topics in Earth and Atmospheric Sciences	2	Recent research methods, experimental, and computational techniques applied in selected, advanced topics in Earth and Atmospheric Sciences.	_	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	_
ECON5480A	Industrial Organization	3	Please visit: http://www.econ.cuhk.edu.hk/econ/en-gb/student-life/programmes/course-offered/postg	Graduate Microeconomics and Econometrics	A-F	English	_
ELEG5060	Applied Functional Analysis and Approximation Theory	3	This course will provide 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 modelise 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 analyse the error resulting from the approximations.	_	A-F	English	Quota for visiting students: 5

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ELEG5491	Introduction to Deep Learning	3	http://dl.ee.cuhk.edu.hk/	–	A-F	English	Quota for visiting students: 5
ENGE5210	Advanced Studies in Literature	3	This course surveys key texts from the western literary canon in order both to introduce you to the concept of literary canonization and to interrogate its lasting significance to contemporary writing. In the first instance, our concern is to recognize the chronology (and with it, the genealogy) of western writing. This will demonstrate to you the various evolutions of literary writing, as writers of different generations concern themselves with very different aspects of writing – from how best to tell a (moral) story, to questioning the very capacity of language to capture our experience of the world. From this, you will begin to recognize the way in which the western literary canon can serve as an important spine to your future work in literary studies. It will certainly allow you to understand the broad context of any work that you will subsequently read, and because of this enrich your reading.	–	A-F	English	Subject to approval by the division head
ENGE5230	Major Author(s) Shakespeare in Performance	3	This course will examine some of the enduring controversies in literary critical analyses of Shakespeare's plays, and explore the ways in which these might be addressed in performance. Students will be provided with techniques of interpreting Shakespearean texts from both literary critical and dramaturgical perspectives with a view to performing them in front of an audience. More particularly, students will learn how to use movement, and vocal expressiveness to formulate different interpretations of various key scenes and speeches from Shakespeare. Given the practical nature of the course, students will occasionally be asked to volunteer to workshop short scenes in the lectures. They will also be asked to contribute directorial suggestions. Students need not have any experience of acting or directing.	–	A-F	English	Subject to approval by the division head
ENGE5310	Science Fiction and Utopia	3	This course examines the political and social dimension of science fiction writing. It does so by interrogating the differing forms of utopia presented in the work of the celebrated English science fiction writer, H.G. Wells. The course begins by tracing the concept of utopia back to its early literary origins in order to reveal its fundamentally political nature. Following this, we think about the different forms of utopia (and inevitably dystopia) presented in four novels by H.G. Wells. We do so in order to begin to develop an understanding of utopia and utopian thinking as the product of an eminently situated critique of society. To this end, the course looks to examine the many ways in which Wells looked to challenge the society of his day.	–	A-F	English	Subject to approval by the division head
ENGE5430	Second Language Acquisition	3	In a multilingual society, individuals grow up speaking multiple languages and learn additional languages after their first language(s). Second language acquisition (SLA) is a field of study which focuses on how individuals learn second/additional languages in their life span. This course introduces students to the key concepts, theories and approaches to SLA, with a specific focus on factors contributing to learning a second language (s) in both natural and instructed settings. The course includes the contents related to historical, cognitive, socio-cultural, multilingual and interactionist perspectives of SLA and the empirical research studies on various topics of second language learning, including instructed SLA. In addition, the course covers how various factors such as motivation, age, emotion and environment influence second language learning. The goal of the course is to help students develop a repertoire of SLA research findings and examine how they can be applied to various language teaching contexts in order to discover ways to effectively teach a second language for promoting successful language acquisition. Through readings, discussions and other related activities, students will relate second language acquisition theories with their own understanding and experience of learning additional languages and begin critical and reflective conversations. Overall, the course aims to promote multilingual perspectives in SLA.	–	A-F	English	Subject to approval by the division head
ENGE5560	Second Language Teaching	3	This course is designed to help students develop robust understanding about how instruction can facilitate second language acquisition. It begins with theories underlying implicit and explicit second language instruction. Then, various pedagogical approaches to second language grammar and vocabulary development are introduced, highlighting the differences between input-based and output-based instruction. In addition, this course reviews empirical findings on the effects of various pedagogical interventions on second language learning so that students can understand the importance of theoretically supported pedagogical approaches in second language teaching.	–	A-F	English	Subject to approval by the division head
ENGE5570	Discourse and Pragmatics	3	The objective of this course is to give students an overview of the field of Discourse Studies and to introduce fundamental concepts within Pragmatics which inform the study of discourse. The course will look at how theoretical insights can help us to understand real-life problems. In the first part of the course, students will be introduced to the concept of discourse and various established approaches with which it is studied such as Conversation Analysis, Corpus Analysis, Ethnography, and Critical Discourse Analysis. From Pragmatics we will see how Speech Act Theory, Politeness Theory, and the study of facework inform our understanding of discourse and underwrite all the discourse analytical approaches. In the second half of the course, the intersections of discourse with identity, gender, politics, and intercultural communication will be explored, with the theorists Bourdieu, Foucault, and Butler introduced into the discussions. Throughout the course, students will be invited to use their own experiences to inform their work and group discussions.	–	A-F	English	Subject to approval by the division head

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ENGE5610	Issues in Contemporary Applied English Linguistics	3	The course aims to help students acquire a new perspective on the English language in its *totality* -- not as the language of a few traditionally English-speaking countries, but as a bona fide **world language** with several old and new varieties ('World Englishes') which exhibit their own distinctive linguistic features and functions. It provides students with the necessary concepts and tools to understand and analyse the linguistic as well as social, political, cultural and educational issues arising from the emergence of English as a world language.	_	A-F	English	Subject to approval by the division head
ENGE5660	Digital Literacies: Theory, Research, and Practice	3	Recognizing digital literacies as a social practice, this course highlights the differentiated, situated, and enculturated ways in which technology is used for diverse relational, informational, expressive, and recreational purposes. Beyond being a set of skills that support the needs of the knowledge economy, digital literacies are understood as practices that address new modes of productivity, representation, and sociality. Through the interplay of human and non-human interactants, technology has reshaped identities, communities, and relations of power, enabling social mobility, while also constructing new forms of inequality. By discussing current theory and research around digital literacies, this course illuminates how technology continues to transform the social landscape, and examines the implications of these changes on language and literacy learning and the conceptualisation of 21st century competences.	_	A-F	English	Subject to approval by the division head
ENGE5750	Special Topics in Genre Studies Literature and the Environment	3	Literature has always been useful for presenting and thinking about pressing issues, and there are few issues more pressing than human impact on the Environment today. This module looks at how English literature has thought about, and continues to think about Environment. Ranging from Romantic poetry to contemporary post-apocalyptic literature, and from representations of transcendental nature to modern urban spaces, "Literature and the Environment" challenges students to reflect on relations between humans, the spaces they occupy, and the other bodies, living and unliving, with which we share the world.	_	A-F	English	Subject to approval by the division head
ENGE5950	Special Topic(s) in Critical Studies: The Gothic in the Romantic Era	3	The course provides an opportunity to study the Gothic writing in the Romantic period, a very popular yet much contested category in literary history. We will cover the early Gothic writers, Walpole, Radcliffe, and Lewis, and read Mary Shelley's *Frankenstein* as a key Romantic Gothic text. We will also consider the Gothic from other perspectives, including reading Austen's *Northanger Abbey* as a parody of the Gothic, studying Romantic tales of vampire by Byron and Polidori, as well as sampling Poe's two short stories that gothicise Romanticism. The course aims to study the Gothic from a historical perspective and to explore its impact upon contemporary culture. The course will emphasise close reading and draw attention to the relationship between text and context, literary creation and critical reception, and between convention and transformation of the Gothic tradition.	_	A-F	English	Subject to approval by the division head
ENGG5104	Image Processing and Computer Vision	3	This course will cover fundamental knowledge and advanced topics in image processing and computer vision, including feature detection, segmentation, motion estimation, panorama construction, 3D reconstruction, scene detection and classification, color image processing and restoration. Applications in computer graphics will also be introduced, including image transformation, and camera calibration. Basic concepts of related algorithms and mathematic background will be discussed.	_	A-F	English	Exclusion: CMSC5711
ENGG5105	Computer and Network Security	3	This course aims to introduce important topics in computer and network security from an applied perspective. Topics include: (i) applied cryptography (e.g., cryptographic primitives, programming with OpenSSL), (ii) network security (e.g., unauthorized accesses, large-scale network attacks, firewall & intrusion detection systems), (iii) web security (e.g., HTTP session management and web attacks), and (iv) system security (e.g., buffer overflow, passwords, file system security), (v) wireless security (e.g., WiFi security, wireless broadband network security). The course also discusses latest applied security topics depending on the current research trends.	Advisory: Students are expected to have taken both CSCI3150 and CSCI4430, or their equivalence in course descriptions	A-F	English	Exclusion: CMSC5726
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	_

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GDRS5020	Gender Studies : Methodology	3	"Gender" is not only a social category but also a perspective of seeing the world. As a discipline, gender studies draws on a variety of knowledge in humanities and social science and shapes its methodology and methods to challenge existing hegemonic knowledge that is considered being produced scientifically. The purpose of this course is to acquaint students with the intellectual debate between feminist epistemology and scientific knowledge production as well as to equip them with the abilities of critical thinking about their methodologies and conducting research with proper methods. Topics include: 1) critical questioning of the validity of knowledge production, the power relations between the researcher and his or her research subjects, and the representation of the research and the researcher; 2) cautiously examining the influence of globalization on feminist research and the intersectionality among race, class and gender; and 3) innovatively connecting theory with praxis through participatory action and writing. We will begin with a brief introduction to the history and development of feminist research, followed by discussions on feminist methodologies by exemplary researchers. In the final weeks, we will shift our focus to the application of theory and groundbreaking feminist writing through collaboration. To make sure students are capable of conducting their own research using a feminist framework, this course also requests students to conduct a mini study and engage in narrative analyses. After taking this course, students are expected to be familiar with feminist approaches of conducting research and able to reflect on the knowledge production of their own research in the future.	–	A-F	English	Quota for visiting students: 5
GDRS5040	Advanced Topics in Gender Studies II	1.5	This seminar aims at engaging students in the most current researches in gender studies, providing them with intellectual stimulation and support for the preparation of the M.Phil./ Ph.D. thesis. The content of the course will cover a wide range of topics including theory of gender analysis, gender and culture, gender and language, etc.	–	A-F	English	Quota for visiting students: 5
HIST6100	Reading Seminar: The Birth and Development of Neo-Confucianism in China: Song Yuan xue'an 史學著作研討會早期道學之誕生與發展：《宋元學案》導讀	3	The course examines the major interpretations and scholarly works in a particular field of history. 本課討論有關歷史領域重要課題之詮釋及主要學術論著。 https://www.history.cuhk.edu.hk/course/202021_hist6100-2/	For students in MPhil History	A-F	Putonghua & Cantonese	Quota for visiting students: 1
HIST7100	Reading Seminar: The Birth and Development of Neo-Confucianism in China: Song Yuan xue'an 史學著作研討會早期道學之誕生與發展：《宋元學案》導讀	3	The course examines the major interpretations and scholarly works in a particular field of history. 本課討論有關歷史領域重要課題之詮釋及主要學術論著。 https://www.history.cuhk.edu.hk/course/202021_hist7100-2/	For students in PhD History	A-F	Putonghua & Cantonese	Quota for visiting students: 1
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.	–	A-F	English	–
IERG6120	Advanced Topics in IE I (Quantum Information Processing)	3	Recently, there has been quite some progress in various areas of quantum information processing, and so it is timely to offer a course on this exciting topic. Topic-wise, we will follow popular books like the book by Nielsen and Chuang ("Quantum Computation and Quantum Information") and the book by Wilde ("Quantum Information Theory"). A special feature of this course is that it uses, as far as possible, graphical models. This will allow for a unified and more accessible treatment of various topics, along with highlighting the differences between classical and quantum information processing. Required background: the course is planned to be accessible to a broad audience. Therefore, we only require a solid understanding of linear algebra. Relevant background from quantum physics, graphical models, etc., will be introduced as necessary to make this course as self-contained as possible.	–	A-F	English	–
IERG6130	Advanced Topics in IE II (Special Topics in Information Theory)	3	Motivated by practical delay-constrained communication scenarios, this course covers various finite-blocklength settings in information theory. It starts with topics on compression, for example, prefix-free codes, Huffman coding, universal codes for integers, and lossy source coding. Then it covers the noisy channel coding setting. Finite-blocklength and refined asymptotic results (second order and error exponent) are examined. Miscellaneous topics such as joint source-channel coding, channels with state and channel simulation will also be discussed.	–	A-F	English	–

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IERG6154	Network Information Theory	3	The course introduces the basic tools and techniques used in Network Information Theory. In particular the following topics are addressed: Multiple Access Channels, Broadcast Channels, Interference Channels, Channels with State, Relay Channels, and other topics. The course will be mathematical with an emphasis on proving theorems.	–	A-F	English	–
IERG6200	Advanced Topics in Computer Networks (Decision and Control on Networks)	3	This course aims to introduce theories, algorithms, and applications of control and optimization for decision-making in network systems, such as Internet and smart grid. After the study of this course, the students will understand a set of mathematical concepts and tools that can be utilized to analyze performance of network systems, such as stability and efficiency. They will also learn about recent advances in research fields such as distributed control of network systems, real-time optimization, etc., and build up visions about difficult challenges in various network-related research areas. This course is a combination of lectures, paper reading, presentations, homework assignments, and course projects. The topics to be covered by this course tentatively include: introduction to dynamical systems and feedback control; introduction to convex optimization; control and optimization algorithms; Internet congestion control and network utility maximization; smart grid control and optimization.	–	A-F	English	–
IERG6210	Advanced Topics in Information Processing	3	This course is going to provide end-to-end hands-on experience on modern deep learning. Particularly, this course begins with a brief overview of basic knowledge in deep learning, and then unfolds the practical aspects through a number of well-crafted mini projects. PyTorch and popular open source algorithmic frameworks will be introduced along with these projects. In the second half of the course, we will delve into specific advanced topics, such as parallel training, model compression, quantization, and robust training etc.	–	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	–
LING6905	Topics in Semantics	3	This course aims at exploring various semantic phenomena and examining the relation between meaning and structure in human languages. Emphasis will be given to current topics that are central to research in semantics. The discussion will also help students appreciate the relation between semantics and other sub-fields such as pragmatics, syntax and philosophy of language. The study of the related literature will help student develop the ability to carry out semantic analysis.	–	A-F	English	–
LING6940	Linguistics Research Seminars	1	This course aims at 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	–
LING6971	Special Topics in Experimental Methods	3	This course is a continuation of LING 6980 (Research Methodology). Selected experimental methods will be discussed in depth. Students will learn about the mechanics of the methods as well as how they can be used to address theoretical issues in linguistics. Topics may include EEG, fMRI, eye-tracking, advanced behavioral methods and data analytics and computational mathematics. Students will learn hands-on techniques and will complete a research project using the methods introduced.	–	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	–
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	–

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MAEG5120	Nanomaterials and Nanotechnology: Fundamentals and Applications	3	This course provides both fundamental knowledge of nanomaterials and nanotechnology and advanced topics related to applications. These topics cover basic principles, which include the scaling law, the surface science for nanomaterials, observation and characterization tools for nanomaterials, the nanofabrication techniques, building blocks for nanodevices and systems, etc. In the second half of this course, advanced topics on applying nanomaterials and nanotechnology for applications in mechanical engineering, energy engineering and biomedical engineering will be covered.	_	A-F	English	_
MAEG5140	Materials Characterization Techniques	3	This course focuses on a suite of materials characterization techniques that are useful in energy and environmental sciences. The main targets of these techniques include functional materials that are used in energy and environmental applications as well as solid, liquid, and gas samples that are involved in energy production and conversion, and pollution monitoring and control. The techniques include mass spectrometry (MS), gas chromatography (GC), high performance liquid chromatography (HPLC), nuclear magnetic resonance (NMR), infrared (IR) spectroscopy, Raman spectroscopy, X-ray diffraction (XRD), X-ray photoelectron spectroscopy (XPS), electron microscopy, and X-ray absorption fine structure (XAFS) spectroscopy. Students will receive lectures on the theory and operation principle of each technique as well as its limitations, and obtain hands-on experience with some of the techniques in supplemental lab sessions.	_	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
MGNT6022	Advanced Seminar in Organizational Behaviour and Human Resources Management	3	This course is about organizational dynamics in managing human resources at the individual and group levels of analysis. We are particularly interested in outcomes such as performance, citizenship behaviors, job satisfaction, organizational commitment, and turnover and their managerial implications. Individual, relational, and organizational factors affecting these outcomes, including individual characteristics, justice, leadership, team dynamics, motivation, and interpersonal relationship at work, will be discussed.	_	A-F	English	_
MGNT6252	Research Methods in Strategic Management	3	This course is meant for M.Phil and PhD students in the department of management. The purpose of this course is to introduce students to a variety of empirical approaches that are employed to investigate questions of interest in strategic management discipline as well as enable students learn about the relevance of the several methodologies that are widely used in the field. In this regard, the course will mainly discuss about the links between research questions and designs, and will also lay emphasis on how to review empirical research in strategic management.	_	A-F	English	_
MKTG7163	Advanced Seminar in Marketing- Empirical Models	3	This seminar course emphasizes on empirical quantitative models of marketing research. It will cover a wide range of topics including consumer choice modeling, Bayesian modeling, structural modeling, dynamic modeling, data mining, and research advances in marketing. The course will also introduce some basic analytical tools from areas of network analysis, economics, and statistics.	_	A-F	English	Quota for visiting students: 10 Please ask intended students to submit transcript as supporting document for application.
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	Quota for visiting students: 3
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	Topics in Theoretical Physics (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	_
PHYS5520	Topics in Theoretical Physics (Introduction to Many-body Theory)	3	This course provides an introduction to the basic concepts and theoretical techniques of the quantum theory of many-body systems at zero-temperature as well as at finite temperature. Topics covered include: second quantization, Green's functions at zero-temperature, Green's functions at finite temperature, perturbation theory and Feynman diagram, equations of motion of the Green's functions, linear response theory, and applications of many-body theory in condensed matter physics.	_	A-F	English	_

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
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
SEEM5410	Optimal Control	3	This course focuses on dynamic stochastic control problems, in which agents make decisions under uncertainty dynamically. It introduces the stochastic control theory and computational methods in discrete time.	–	A-F	English	–
SEEM5580	Advanced Stochastic Models	3	The course introduces basic stochastic models. We will discuss Poisson Process, Discrete and Continuous time Markov Chains, Martingales and Brownian motions. Applications including queueing models, inventory models and financial models will also be discussed.	–	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	–
SEEM5670	Advanced Models in Financial Engineering	3	The course introduces some basic concepts of stochastic calculus, an important mathematical tool used in financial engineering, and based on it, treats systematically the theory of risk neutral pricing. It will discuss extensively various applications in option pricing and financial modeling.	–	A-F	English	–
SEEM5680	Text Mining Models and Application	3	Introduction to Information Retrieval and Natural Language Processing	–	A-F	English	–
SOCI6003	Advanced Statistical Analysis	3	Please see the URL http://www.soc.cuhk.edu.hk/postgraduate/mphil-phd-programme/mphilphd-course-list/	–	A-F	English	–
SOCI6004	Advanced Qualitative Methods	3	Please see the URL http://www.soc.cuhk.edu.hk/postgraduate/mphil-phd-programme/mphilphd-course-list/	–	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	Quota for visiting students: 10 Subject to teacher's approval on individual application.
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	Quota for visiting students: 10 Subject to teacher's approval on individual application.