

MATH 7060 Complexity of Numerical Problems (3,3,0)

Prerequisite: Postgraduate standing or consent of instructor
This course is concerned with a branch of complexity theory, the information based complexity theory. It studies the intrinsic complexity of numerical problems, that means, the minimum effort required for the approximate solution of a given problem up to a given error. Based on a precise theoretical foundation, lower bounds are established, i.e. bounds which hold for all algorithms. We also study the optimality of known algorithms, and describe ways to develop new algorithms if the known ones are not optimal.

MATH 7070 Pseudospectral Methods and Radial Basis Functions (3,3,0)

Prerequisite: Postgraduate standing or consent of instructor
Spectral methods and radial basis function methods are two modern numerical techniques which have been studied extensively by scientists and engineers in the past two decades. There exist many differences between the modern numerical methods and the classical approaches such as finite element and finite difference methods. This course will provide students with a sound understanding of the highly accurate and efficient numerical schemes and a useful training on how to implement these methods.

MATH 7080 Probability and Stochastic Processes (3,3,0)

Prerequisite: Postgraduate standing or consent of instructor
This course provides the elements of the modern theory of stochastic processes. Stochastic processes and probability theory in its modern form have found wide application in the natural sciences, engineering and the finance sector. Emphasis is placed on probabilistic thinking, and applications will demonstrate the introduced concepts throughout.

MATH 7090 Advanced Numerical Methods and Algorithms (3,3,0)

Prerequisite: Postgraduate standing or consent of instructor
This course will mainly study several modern numerical methods developed in the last one or two decades. These methods will be applied to simple model problems as well as some problems with strong physical applications, such as nonlinear conservation laws and the Navier-Stokes equations. This course will provide students with a sound understanding of the highly accurate and efficient numerical schemes and a useful training on how to implement these methods.

MATH 7110 Numerical Analysis of Delay Differential and Volterra Functional Equations (3,3,0)

Prerequisite: Postgraduate standing or consent of instructor
Collocation and Galerkin methods in piecewise polynomial spaces play a fundamental role in modern numerical analysis. This course introduces the students to the application of these methods to standard integral (and integro-differential) equations of Volterra and Fredholm type, and to analogous problems with singular kernels (including boundary integral equations). While the focus of the course is on the analysis of the convergence and stability properties of these projection methods, various aspects of the practical implementation of the methods are also studied in detail.

MATH 7120 Special Topics in Mathematics (3,3,0)

Prerequisite: Postgraduate standing or consent of instructor
This course is devoted to the study of up-to-date and important topics in different areas of applied mathematics. Emphasis is laid on the continuation and consolidation of those fundamental applied courses offered in the programme. It is specifically designed with the flexibility to take advantage of visiting scholars from other institutions to introduce topics that are under current research.

MATH 7130 Advanced Topics in Mathematics (3,3,0)

This course is devoted to the study of up-to-date and important topics in different areas of applied mathematics. Emphasis is

laid on the continuation and consolidation of those fundamental applied courses offered in the programme. It is specifically designed with the flexibility to take advantage of visiting scholars from other institutions to introduce topics that are under current research.

MATH 7620 Business Intelligence and Decision Support (2,2,0)

The aims of this course are to study the concepts and tools of business intelligence, to explore the process, contents and context of managerial decision making and to look at how business intelligence can enhance a company's competitive advantage and improve its top management decision-support effectiveness.

MCCP 7001-11 Mandatory Common Core Programme (3,*,*) for Research Postgraduate Students

Research postgraduate students are required to complete a mandatory common core programme (MCCP) before confirmation of candidature. The programme aims to equip students with the necessary skills and knowledge to better prepare themselves for their academic career at HKBU and beyond. The MCCP comprises two credit-bearing courses, namely, Advanced English for Academic Purposes and Teaching University Students. Others are still mandatory yet non-credit bearing, including research ethics, Academic Integrity Online Tutorial, research support skills and laboratory safety. For details, please refer to the Graduate School website (http://gs.hkbu.edu.hk/en/current/rpg/coursework_enrol/).

MCCP 7002 Advanced English for Academic Purposes (2,4,0)

This course is a compulsory course offered to all research postgraduate students at HKBU and it has two principal components. The first component aims to develop postgraduates' competence to present their research ideas effectively and to equip them with the skills to answer questions appropriately in seminar presentations. The second component focuses on the language needed to report on the various stages of a thesis. It also analyses thesis organization and stresses the importance of avoiding plagiarism.

MCM 7010 Clinical Applications of the Different Theories of Chinese Medicine (3,3,0) (P)

The course will allow students to study and master the thoughts and experiences of distinguished physicians in different dynasties with a view to improving students' knowledge structure and enhancing their ability in comprehensive application of fundamental Chinese medicine knowledge. Students will also be able to cure diseases by various methods and to handle practical cases by applying Chinese medicine according to different situations. Students may also learn from the experience of the famous physicians in order to save time from exploring in clinical practice in order to achieve twice the result with making only half the effort.

MCM 7030 Thinking Approach and Methodology of Chinese Medicine (3,3,0) (P)

This course will allow students to learn the thinking approach and methodology of Chinese medicine in a systematical way, and hence enhances their ability in handling practical cases by applying thinking approach and methodology of Chinese medicine.

MCM 7040 Research Methodology and Practices in Chinese Medicine (3,3,0) (P)

This course will allow students to learn master the basic programmes and methods of scientific research in Chinese medicine in order to lay a foundation for scientific research work in Chinese medicine.