

and managerial aspects of new media technology to produce, deliver and present meaningful information content in a variety of innovative interactive forms.

**COMM 7540 Multimedia Production (0,3,0)**

The course combines an interdisciplinary approach to multimedia production with emphasis on both developing students' knowledge of the issues around digitalization and convergence and the critically evaluating of multimedia development in terms of technical, business and social aspects. Students are prepared to produce and present media materials for the Internet, for CD-ROMs and other multimedia systems. In addition, the lab-based work is aimed to develop students' skills in interdisciplinary practice and problem solving methodologies.

**COMM 7550 Advertising in China (3,3,0)**

The course will help students understand the challenges in planning and implementing an advertising strategy in China. Specifically, students will develop the ability to analyze the dynamic and diverse market environment in China and to strategically plan and implement advertising solutions there. Issues relevant to developing advertising solutions in China will be discussed, such as understanding its market structure, culture, consumption patterns, branding issues in international and local business, as well as the opportunities and challenges brought on by the new media. Being an institution, business and industry, advertising has been a major force shaping market development in China. The course is designed to enhance the students' understanding of the fast-changing market environment there and to assist them in developing the strategic thinking and skills necessary to plan and implement advertising programs.

**COMM 7560 Political Communication and Public Opinion (3,3,0)**

The course introduces various aspects of political communication in modern society. It attempts to acquaint students with studies of the nature of news media coverage of politics, the effects of news coverage on the public and policy, and the relationship between news media and policy makers. A good part of the course is devoted to political communication in the digital context.

**COMM 7570 Youth, Media and Consumption (3,3,0) (E)/(P)**

Young people are a global market for products, services and ideas. "Youth" is defined as the population aged between 15 and 24. This course aims to equip students with the knowledge needed to make informed decisions about marketing to young people or to weigh suggestions made about limiting marketing to "youth". The Course will examine the interplay of the youth segment and the market environment. Based on research evidence, students will identify issues related to youth and media usage, and the roles of personal as well as marketing communication on youth consumption.

**COMM 7580 Social Media Marketing (3,3,0)**

The advent of social media and mobile media devices, such as smartphones and tablets, is rapidly changing human interaction, including business models. Millions of people worldwide are living much of their lives on SNS, such as Facebook, Twitter, Blog, YouTube and LinkedIn in the United States, and Renren, Weibo in China. Global Internet users spent more than one fifth of online time on social network sites or blogs. The trend exemplifies that human interaction, including business environment, has been deeply transformed by social media.

**COMM 7610 Social Services Marketing and Communication (3,3,0)**

This course investigates the practices and challenges of government or government-related organizations as well as non-profit organizations in the communication of social causes and the marketing of social innovations. The course discusses the characteristics of social services marketing, the design and implementation of social innovations and social entrepreneurship,

the strategic marketing communication tools, and the evaluation of marketing communication efforts.

**COMM 7620 Social Media and Online Social Networks (3,3,0)**

The purpose of this course is to familiarize students with the practical applications and the theoretical implications of social media-related technologies. The course is grounded in practice, and students will be required to participate in social networks, forums, Facebook, wikis, micro-blogs, and more. We will examine their economic, social, and cultural implications, and cover some of the latest developments in the social media area. We will also explore techniques for collecting and analyzing social media data.

**COMM 7710 Independent Readings in Communication (3,\*,\*)**

Readings are especially designed by the instructor for and tailored to the student to broaden intellectual perspective and to provide in-depth understanding of specific research areas.

**COMM 7730 Academic Research Taskforce (3,3,0)**

Prerequisite: COMM 7740 Research Methods in Communication  
The aim of this course is for research postgraduate students to master hands-on academic research skills through practice and experiential learning under the direction of faculty members. Students will carry out primary research to become familiar with step-by-step execution of specific research method(s), along with necessary fine-tuning of the operational details in one or more quantitative and qualitative research methods.

**COMM 7750 Using Social Networks: For the Communications Professional (3,3,0)**

The course introduces the science and theory of social networks, and the artful process of communicating through them. Social networks refer to the collective structure of human relationships through which we communicate. Recognizing and understanding this relationship-based structure is essential for crafting a communications strategy. Operative strategies can be developed for quickly getting a message to a target audience or thoroughly harvesting messages from them, be it through word-of-mouth, traditional media channels, or through new media technology. The communications professional must be skillfully adept at assessing the social structure of a target group and evaluating the influence specific individuals have within the structure. This course provides the student with the tools to purposefully map and quantify the network's structure and identify those individual who have social influence over the group. Students will learn how to craft a communications strategy and tactics for communicating to the entire group in a cost-effective manner. This course is combination of theory and real-world application of contemporary communication and network techniques, such as visualization, group and individual measurement, communication-effectiveness analysis, and tactical planning. Lab sessions and group activities are incorporated into the course to provide students with hands-on practice of concepts and ideas.

**COMP 1005 Essence of Computing (3,2,2)**

This course provides students with an overview of Information and Communication Technologies, together with basic knowledge of computer-oriented problem solving methodologies, algorithm development, programming concepts and design techniques.

**COMP 1006 Facets of Computing (1,1,0.5)**

This course provides students with an overview of core areas in computing, an appreciation of their potentials and limitations, and a glimpse of the career path of IT professionals.

**COMP 2005 Business in the IT Context (3,2,1)**

The course provides the concepts in different business disciplines so as to provide a foundation for students to manage IT projects and organizations.

**COMP 2006 Computer Organization (3,3,0)**

This course introduces the organization of digital computers, the different components and their basic principles and operations.

**COMP 2015 Data Structures and Algorithms (3,3,2)**

Prerequisite: COMP 2006 Computer Organization or COMP 2026 Problem Solving Using Object Oriented Programming

This course develops students' knowledge in data structures and the associated algorithms. It introduces the concepts and techniques of structuring and operating on Abstract Data Types in problem solving. Common sorting, searching and graph algorithms will be discussed, and the complexity and comparisons among these various techniques will be studied.

**COMP 2016 Database Management (3,2,1)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming

This course introduces how to represent data in a database for a given application and how to manage and use a relational database management system (RDBMS). Topics include: entity-relationship model, relational data model, relational algebra, structured query language SQL and relation database design. In addition, hands-on RDBMS experience is included.

**COMP 2017 Operating Systems (3,3,1)**

Prerequisite: COMP 2006 Computer Organization, COMP 2026 Problem Solving Using Object Oriented Programme

This course introduces the fundamentals of operating systems design and implementation. Topics include an overview of the components of an operating system, mutual exclusion and synchronization, deadlock and starvation, implementation of processes and threads, resources scheduling algorithms, memory management, and file systems.

**COMP 2026 Problem Solving Using Object Oriented Programming (4,3,3)**

Prerequisite: COMP 1005 Essence of Computing

This course introduces the object-oriented programming concepts, principles, and techniques, including classes, objects, inheritance, and polymorphism. All these concepts are illustrated via a contemporary object-oriented programming language.

**COMP 3005 Design and Analysis of Algorithms (3,3,0)**

Prerequisite: COMP 2015 Data Structures and Algorithms, MATH 1205 Discrete Mathematics

This course is to introduce the techniques of designing efficient algorithms including divide-and-conquer strategy, dynamic programming, greedy and approximate algorithms, and so forth, and the applications of these techniques to design non-trivial algorithms, e.g. advanced data structures, graph algorithms, sorting algorithms and computational geometry. The time and space complexity of algorithms will be analysed from a theoretical point of view. Also, the issue of problem complexity will be addressed.

**COMP 3015 Data Communications and Networking (3,3,1)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming

Students will learn the principles of data communications, computer networks and network programming.

**COMP 3016 Internship (1,0,0)**

Prerequisite: Year III standing or the consent of the Department Through internship work, students are expected to acquire the following kinds of experience: (1) application of academic and professional information technology/information system knowledge to real-world problems; (2) interaction with clients and/or technical workers; and (3) the stringent requirements in the work environment. This experience prepares students for employment as professional practitioners upon graduation.

Students are required to work for at least six weeks full time or equivalent.

**COMP 3027 Enterprise Information Systems (3,2,1)**

Prerequisite: Year III or above standing in Computer Science

The course provides an advanced introduction to enterprise information systems and equips students with practical skills in the use of one type enterprise information systems.

**COMP 3035 Health Information Technology (3,3,0)**

Prerequisite: Year III or above standing in Computer Science

This course is designed to better equip computer science students for building their career in healthcare sector. After completion of this course, students will learn the structures, operations and workflow in healthcare organizations. Students are able to describe the data involved and data standards in the healthcare industry. Moreover, students can explain how IT can support and improve the healthcare systems.

**COMP 3045 Advanced Algorithm Design, Analysis and Implementation (3,2,2)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming, COMP 2015 Data Structures and Algorithms

This course aims to help students develop advanced algorithm design and analysis skills as well as efficient programming techniques for solving a variety of challenging problems. The course has three major components: (1) theory of computation: automata, language theory, and computational complexity; (2) advanced programming techniques: collections, generic programming, and Java threads; and (3) problem solving: a variety of algorithms for real challenging problems.

**COMP 3046 Advanced Programming for Software Development (3,1,3)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming

This course aims to further development students' skills in programming for software development by introducing advanced topics in programming. In addition, students' performance will be evaluated by group-project-based software application development to allow students to gain hands-on experience in working in teams. This course adopts studio-based learning approach which offers high degree of interaction, collaboration and constant feedbacks to students.

**COMP 3047 Software Engineering (4,2,2)**

Prerequisite: COMP 2015 Data Structures and Algorithms

This course discusses principles and practical aspects of software development.

**COMP 4005 Information Systems Theory, Methodology and Architecture (3,2,1)**

Prerequisite: Year IV standing in Computer Science

To extend students' knowledge of information systems and development methodology through the study of advanced theories and methodologies, and to provide students an integrative perspective of information systems and development. Also, more advanced system design related concepts will be introduced.

**COMP 4006 Information Technology Professional Practices (3,2,1)**

Prerequisite: Year IV standing in Computer Science

This course examines important professional issues in contemporary practice to help students become an effective participant in a team of IT professionals.

**COMP 4015 Artificial Intelligence and Machine Learning (3,2,1)**

Prerequisite: COMP 2015 Data Structures and Algorithms, MATH 1205 Discrete Mathematics and MATH 2005 Probability and Statistics for Computer Science

This course aims to introduce the principles and fundamental techniques of artificial intelligence, and in particular, machine learning. Students will learn the fundamentals and state-of-the-art techniques and acquire practical insights into the current development of this field.

**COMP 4016 Clinical Decision Support and Information Systems (3,2,1)**

Prerequisite: COMP 2015 Data Structures and Algorithms, COMP 2016 Database Management

In this course, students will learn the methodology and techniques of medical data information management, and the models and algorithms used in computer-based clinical decision making. They will also learn the architectural design, structure, functions and components of clinical decision support systems and health care information systems.

**COMP 4017 Computer and Network Security (3,3,0)**

Prerequisite: COMP 2015 Data Structures and Algorithms, COMP 3015 Data Communications and Networking

This course introduces fundamental concepts and techniques in computer and network security. Topics include basic encryption techniques, cryptographic algorithms, authentication and digital signature, public key infrastructure, security models, network security, as well as their applications (e.g. IP security, Web security, trusted operating systems). Popular cryptographic standards and libraries will be introduced. Other advanced topics in computer security will also be discussed (e.g. intrusion detection, access control, secure programming, computer virus).

**COMP 4025 Interactive Computer Graphics (3,2,2)**

Prerequisite: COMP 2015 Data Structures and Algorithms

Students will learn (i) the mathematical foundation and algorithms for creating computer graphics including transformation, rendering, and (ii) the algorithms for enabling Human-Object interaction in virtual environment. Students will also gain practical experience on these topics by using graphics application programming interface (API) and develop a graphics application prototype.

**COMP 4026 Computer Vision and Pattern Recognition (3,2,1)**

Prerequisite: COMP 2015 Data Structures and Algorithms, MATH 1005 Calculus and MATH 2005 Probability and Statistics for Computer Science

This course gives students a broad knowledge on, and techniques used in contemporary research on computer vision and pattern recognition.

**COMP 4027 Data Mining and Knowledge Discovery (3,2,1)**

Prerequisite: COMP 2015 Data Structures and Algorithms, COMP 2016 Database Management and MATH 2005 Probability and Statistics for Computer Science

This course is aimed at providing an overview of concepts and techniques in knowledge discovery and data mining. Relevant applications in specific domains such as medicine and health care will be covered.

**COMP 4035 Database System Implementation (3,3,0)**

Prerequisite: COMP 2015 Data Structures and Algorithms and COMP 2016 Database Management

This course provides an in-depth knowledge of relational database management systems (RDBMSs). Topics include data storage, index structures, query evaluation and optimization, transaction management, concurrency control and crash recovery. In addition, advanced topics such as database security, access control, distributed databases and data warehouses will also be covered.

**COMP 4036 Digital Media Computing and Communications (3,2,1)**

Prerequisite: COMP 3015 Data Communications and Networking

Students will learn the properties of digital media, the principles of digital media compression, the principles of digital media communication, and the protocols and methods for transporting digital media through the Internet.

**COMP 4037 E-Technology Architectures, Tools and Applications (3,2,1)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming and COMP 3015 Data Communication and Networking

This course will develop students' understanding of recent developments in e-technologies, including XML, Web services, service-oriented architecture, Web-enabled business processes, as well as related architectures, tools, and applications. It will also enable students to acquire the capability to design and develop software systems based on e-technologies and to apply them to some domain applications.

**COMP 4045 Human-Computer Interaction (3,2,1)**

Prerequisite: COMP 3047 Software Engineering  
This course provides an introduction to and overview of the field of human-computer interaction (HCI).

**COMP 4046 Information Systems Control and Auditing (3,3,0)**

Prerequisite: COMP 3015 Data Communications and Networking

This course provides the theory, techniques and practical issues related to computer-based information systems control and auditing. Students will learn the concepts, approaches, and techniques to carry out information system auditing and security controls in organizations.

**COMP 4047 Internet and World Wide Web (3,2,1)**

Prerequisite: COMP 3015 Data Communications and Networking

Students will learn the principles of the Internet and the World Wide Web, study some real-world Internet systems and applications, and learn some current topics.

**COMP 4055 Medical Image Processing and Applications (3,2,1)**

Prerequisite: COMP 2015 Data Structures and Algorithms, MATH 1005 Calculus, MATH 2005 Probability and Statistics for Computer Science

The course focuses on two areas. First, students will learn some fundamental image processing techniques and the characteristics of different types of medical images. Students are then able to apply different classical image processing techniques to different types of medical images. In the second part, students will learn the structure and components of a medical imaging management system. Students will be able to apply the picture archiving and communication systems to the medical images.

**COMP 4056 Nature-Inspired Computing (3,2,1)**

Prerequisite: COMP 2015 Data Structures and Algorithms, MATH 1205 Discrete Mathematics

This interdisciplinary Computer Science course provides an introduction to some interesting concepts, principles, and applications of computing, which are inspired by processes and phenomena found in nature. It offers students opportunities to appreciate those concepts, develop new insights and methods, and turn them into practical problemsolving and modeling applications.

**COMP 4057 Distributed and Cloud Computing (3,3,0)**

Prerequisite: COMP 3015 Data Communications and Networking

This course introduces the techniques underlying the design and engineering of distributed systems and cloud computing systems.

Topics include distributed system models, computer clusters, virtualization, datacenters, design of cloud computing platforms, and service-oriented architectures. Students will also acquire hands-on experience in cloud programming.

**COMP 4065 Performance Modelling and Analysis (3,2,1) of Computer Systems**

Prerequisite: MATH 1005 Calculus, MATH 2005 Probability and Statistics for Computer Science

This course provides students with basic knowledge and skills of performance modelling and analysis of computer systems. Topics to be covered include queueing systems, queueing networks, and computer simulations. In addition, some case studies will be introduced to help students acquire practical insights of this field.

**COMP 4066 Principles of Programming Language (3,2,1)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming

This course introduces the concepts that underline most of the programming languages students are likely to encounter, and illustrates those concepts with examples from various languages. Topics include syntax and semantic analysis, bindings, type systems, programming paradigms, control abstraction and flow, and runnable program buildup.

**COMP 4067 Theory of Computation (3,2,1)**

Prerequisite: MATH 1205 Discrete Mathematics

This course aims to introduce some fundamental concepts in theoretical computer science. The topics include non-deterministic and deterministic finite automata, regular languages, context-free languages, pushdown automata, Church's hypothesis, Turing machines, computability, and complexity theory.

**COMP 4075 Social Computing and Web Intelligence (3,3,0)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming, MATH 2005 Probability and Statistics for Computer Science

This course introduces the fundamental concepts as well as practical applications of contemporary Artificial Intelligence (e.g. incorporating knowledge discovery and data mining, social network intelligence, and intelligent agents) and advanced information technology in the context of Web empowered social computing systems, environments, and activities. In addition, it discusses the techniques and issues central to the development of social computing and Web intelligence computing systems.

**COMP 4076 Selected Topics in Digital Media (3,2,1) and Mobile Technology**

Prerequisite: The prerequisite depends on the selected topics. The prerequisite and the selected topics will be announced before the semester starts.

Students will learn some state-of-the-art topics in digital media or mobile technology.

**COMP 4077 Selected Topics in Enterprise Systems (3,3,0) and Business Intelligence**

Prerequisite: The prerequisite depends on the specific topics covered. The prerequisite and the chosen topics will be announced before the semester starts.

Students will learn state-of-the-art topics in enterprise systems and business intelligence. Emphasis will be placed on the current issues, methodologies and/or practice. After completing this course, students will understand some current topics in and methodologies of enterprise systems and business intelligence.

**COMP 4085 Selected Topics in Intelligent (3,3,0) Informatics**

Prerequisite: The prerequisite depends on the specific topics covered. The prerequisite and the chosen topics will be announced before the semester starts.

This course deals with the selected topics in intelligent informatics. Students will learn some state-of-the-art topics in intelligent informatics, through which students are able to solve the problems

in some selected domains, such as machine learning, planning, self-organization, evolutionary computing, data mining, Web intelligence, intelligent agents, brain informatics, and parallel and distributed information processing.

**COMP 4086 Selected Topics in Theoretical (3,3,0) Computer Science**

Prerequisite: COMP 3005 Design and Analysis of Algorithms

This course provides an in-depth study on a selected topic of theoretical computer science. The topic to be covered may vary from semester to semester, and is to be determined by the instructor. The topic could be a specific area of algorithmic problems (e.g. graph algorithms, combinatorial optimization, etc.), or a particular algorithm design paradigm (e.g. randomized algorithms, parallel algorithms, etc.).

**COMP 4087 Selected Topics in Web Technology (3,3,0) and Data Engineering**

Prerequisite: The prerequisite depends on the specific topics covered. The prerequisite and the chosen topics will be announced before the semester starts.

Students will learn state-of-the-art topics in web technology and data engineering. Emphasis will be placed on the current issues, methodologies and/or practice. After completing this course, students will understand some current topics in and methodologies of Internet and large scale systems.

**COMP 4096 Business Intelligence and Decision (3,2,1) Support**

Prerequisite: COMP 2016 Database Management

Students will learn the methodologies and concepts of business intelligence, including the characteristics, architectures, and development of data warehouses and data marts. After completing the course, the students will understand the features and applications of Online Analytic Processing (OLAP), and identify the different types of OLAP. Emphasis will be placed on the understanding of enabling technologies and their applications to improve business operations and decision making in business and healthcare contexts.

**COMP 4097 Mobile Computing (3,2,2)**

Prerequisite: COMP 2007 Object Oriented Programming, COMP 3015 Data Communications and Networking

This course introduces the basic concepts and principles in mobile computing. This includes the major techniques involved, and networks and systems issues for the design and implementation of mobile computing systems and applications. This course also provides an opportunity for students to understand the key components and technologies involved and to gain hands-on experiences in building mobile applications.

**COMP 4105 Web Search Principles and Technology (3,2,1)**

Prerequisite: COMP 2026 Problem Solving Using Object Oriented Programming

This course provides a comprehensive examination of different popular search systems for diverse types of data such as text, image, video and audio information. Students will be introduced to the powerful features in these systems, as well as the technology underpinning them. Students will learn how large information repositories are efficiently organized, managed and searched, and the principles of Web search engines and information retrieval.

**COMP 4106 E-Business Technology (3,3,0)**

Prerequisite: Year III standing in Computer Science

This course introduces the use of technology in many aspects of a business, with particular emphasis on concepts and practices for modeling, specifying and integrating within-enterprise and B2B business processes. Business processes related to customer relationship management, enterprise resource planning, supply chain management, etc. will be covered. Students gain a heightened awareness of emerging technologies and trends in e-business.

**COMP 4107 Software Design, Development and Testing (4,3,2)**

Prerequisite: COMP 3047 Software Engineering  
This course aims to further develop students' knowledge and skills in software engineering, and to introduce and discuss software design patterns, state-of-the-art techniques and advanced topics in developing reliable software systems.

**COMP 4115 Exploratory Data Analysis and Visualization (3,2,1)**

Prerequisite: MATH 2005 Probability and Statistics for Computer Science  
This course aims at providing basic concepts and techniques in exploratory data analysis and visualization. Hands-on experience of using data analytics software tools will also be covered.

**COMP 4116 Information Systems Management (3,2,1)**

Prerequisite: Year III or above standing in Computer Science  
The course deals with the management of information systems and technology as it is being practiced in organizations today to produce value for businesses and consumers.

**COMP 4117 Information Systems: Design and Integration (3,1,3)**

Prerequisite: COMP 3047 Software Engineering  
This course provides a chance to students to apply a methodological approach to the development and integration of information systems. Students will work as a team and go through phases in system development life cycle, and implement solutions to the identified problems with exposure to systems integration in practice. They will also practice the presentation and communication skills in team management, report submission and project demonstration.

**COMP 4868-9 Informatics Project (3,0,9)**

Prerequisite: Year IV Standing in Computer Science  
Students will carry out a piece of highly independent work, which could be a system development project, an information analytics study or an academic research project, under the supervision of a faculty member. A project report and an oral presentation/demonstration are required upon successful completion of the project. Other deliverables for research projects may be a research paper or research prototype.

**COMP 4878-9 Innovative Computing Project (3,0,9)**

Prerequisite: Year IV Standing in Computer Science  
Students will engage in a highly independent problem solving activity under the supervision of a faculty member. Students are expected to gain practical experiences of applying software systems principles and techniques acquired from the Programme to the solution of a real-life problem. The project demands careful planning and creative applications of underlying theories and enabling technologies. A final report and an oral presentation are required upon successful completion of the project.

**COMP 7010 Advanced Topics in Computer Science and Information Systems (3,3,0)**

Prerequisite: Research postgraduate student standing  
This course studies in-depth the theories and issues in some specialized areas of computer science and information systems that are of current interest.

**COMP 7030 Advanced Theory and Methodology for Information Systems Development (3,2,1)**

Prerequisite: Research postgraduate student standing  
To extend students' knowledge of information systems and development methodology through the study of advanced theories and methodologies, and to examine the critical issues of current IS research, so as to provide a student an integrative perspective of information systems and development.  
At the end of the study of this course, students should be able to develop new solutions and models for an information system. They should also have an appreciation of methodological

pluralism (that there is not one but many methods and that the 'correct' method is contingent on the problem being studied).

**COMP 7040 Computer Vision and Pattern Recognition (3,2,1)**

Prerequisite: Research postgraduate student standing  
This course gives students some advanced topics in the areas of computer vision and pattern recognition.

**COMP 7050 Advanced Topics in Distributed Computing (3,2,1)**

Prerequisite: Research postgraduate student standing  
This course offers a study of the design and implementation issues of distributed computing systems. It revisits the designs and approaches used by traditional centralized systems and proposes relevant solutions based on the distributed computing environment. The topics for discussion include distributed computing in communications, process management, synchronization, consistency and replication, fault tolerance, file systems and case studies.

**COMP 7060 Advanced Topics in Intelligent Systems (3,3,0)**

Prerequisite: Research postgraduate student standing  
This course deals with the advanced topics in intelligent systems. Through a systematic training, students will be able to conduct independent intelligent systems research and develop theoretical or practical solutions in some selected domains, such as learning, planning, self-organization, soft-computing, adaptive computation, evolutionary computation, and intelligent agents.

**COMP 7070 Advanced Topics in Machine Learning (3,2,1)**

Prerequisite: Research postgraduate student standing  
This is an advanced course that will not only focus on the recent literature on the applications of machine learning to problems from a range of different areas, including image/signal processing, robotics, information retrieval and data mining, but also let students learn the state-of-the-art learning theories and techniques based on statistics, neural networks and information theory.

**COMP 7080 Postgraduate Seminar (1,0,0)**

Students are exposed to the current IT research, development and practice via seminars, IT forum and presentations given by academic scholars, IT professionals and research students. After completing this course, students will: (1) learn the frontier knowledge of IT research and development; (2) broaden their mind; (3) understand the current IT practice; and (4) share their experience with academic scholars and IT professionals.

**COMP 7090 Ubiquitous Computing (3,2,2)**

Prerequisite: Research postgraduate student standing  
This course discusses the concepts of ubiquitous/pervasive computing. This includes location-based services provided by the ubiquitous environment, positioning techniques for localization, and networks and systems issues for the design and implementation of ubiquitous/pervasive computing systems and applications. Students need to understand the key components, devices and technologies involved and recognize research issues in ubiquitous computing. This course also provides an opportunity for students to gain hands-on experiences in building applications that realize the usefulness of ubiquitous computing.

**COMP 7100 Computer Graphics and Animation (3,2,2)**

Prerequisite: Research postgraduate student standing  
Students will learn (1) the mathematical foundation and algorithms for creating computer graphics including transformation, rendering, and (2) the algorithms for animation. Students will also gain practical experience on these topics by using graphics application programming interface (API) and develop a graphics application prototype.

**COMP 7110 Analytic Methods for Computer Science Research (3,3,0)**

Prerequisite: Research postgraduate student standing  
This course studies the various analytic methods and provides the mathematical knowledge and skills necessary for computer science students to approach the study of advanced topics in the discipline of computer science at the graduate level.

**COMP 7320 Professional Methodologies for Information Systems (3,2,1)**

Prerequisite: Postgraduate student standing  
This course provides students with an integrative perspective of information systems and development by introducing different kinds of information systems and describing the underlying methodologies for such development. Topics include, but not limited to: model of information system, integrated view of different methodologies, methodology framework, soft systems methodology, and object-oriented methodologies. Through this course, students will be able to develop new models and solutions for an information system.

**COMP 7330 Information Systems Security and Auditing (3,3,0)**

Prerequisite: Postgraduate student standing  
This course aims to introduce students to the fundamental concepts and techniques in computer and network security, and giving students an overview of information security and auditing, and to expose students to the latest trend of computer attack and defense. Other advanced topics on information security such as mobile computing security, security and privacy of cloud computing, as well as secure information system development will also be discussed.

**COMP 7340 Enterprise Application Architecture and Integration (3,2,1)**

Pre/Co-requisite: COMP 7320 Professional Methodologies for Information Systems  
This course aims to cover key concepts and design principles related to enterprise application architecture and enterprise application integration. It includes topics like layering structure, business logic organization, patterns for object/relational access layers, model-view-control patterns for Web, message-based enterprise application integration, and recent advances in enterprise application architecture.

**COMP 7350 Enterprise Information Systems Development (3,3,0)**

Prerequisite: Postgraduate student standing  
This course provides an in-depth knowledge of development of enterprise information systems (EISs). Topics include alternative development strategies, agile development, software maintenance and functionalities of EISs.

**COMP 7360 Enterprise Networking and Cloud Computing (3,3,0)**

Prerequisite: Postgraduate student standing  
This course provides an in-depth knowledge of enterprise networking and cloud computing. Topics include Ethernet LANs, wireless LANs, MANs, WANs, TCP/IP internetworking, network security, network management, cloud computing architecture, cloud computing services, design and implementation of cloud computing.

**COMP 7370 Information Processing in Financial Services (3,3,0)**

Prerequisite: Postgraduate student standing  
This course provides an in-depth knowledge of technology applications in financial industry. After completing the course, students will understand the financial operations and the impacts of information technology to the financial sector. Students will also practise the use of selected financial software and learn how to develop an application to support financial processes.

**COMP 7390 Algorithms for Financial Information Systems (3,2,1)**

Prerequisite: Postgraduate student standing and basic knowledge in probability and statistics

This course is to introduce algorithms in financial markets. Interest rates, term structure, bonds, and bond markets will be studied. Factors affecting bond price volatility will be discussed. In addition, financial market mechanics such as stocks, options, and futures will be covered. Basic algorithms of hedging and trading strategies using options and futures will be examined. Hands-on computer techniques for these calculations will be given.

**COMP 7400 Financial Analysis and Decision Making (3,2,1)**

Prerequisite: Postgraduate student standing  
This course aims to introduce basic concepts in operational finance, such as financial statements concepts, financial ratio analysis, and etc., and to describe the techniques and tools that support financial decision making. Students will learn how to apply the decision analysis and making techniques and tools to various phases of financial processes.

**COMP 7410 Medical Image Processing, Analysis and Applications (3,2,1)**

Prerequisite: Postgraduate student standing  
In this course, students will learn fundamental image processing techniques, characteristics of different types of medical images, and how to apply different classical image processing techniques to different types of medical images. Students will also learn the basic concept, structure as well as the components in Picture Archiving and Communication Systems (PACS).

**COMP 7420 Decision Analysis and Support in Healthcare Systems (3,2,1)**

Prerequisite: Postgraduate student standing  
In this course, students will learn the advanced techniques and methodology of health information management, and the models and algorithms used in computer-based public health and clinical decision making. They will also learn the related architectural design, structure, functions and components of decision support systems.

**COMP 7430 Health Information Systems: Architecture and Technologies (3,3,0)**

Prerequisite: Postgraduate student standing  
This course provides a comprehensive study of the key architectural principles, open standards and development technologies behind healthcare information systems. At the same time, it introduces the present state of the art as well as the future trends in the development of electronic health record systems, and discusses several core technical issues in acquiring, integrating, analyzing and utilizing healthcare data.

**COMP 7440 Web-based and Ubiquitous Health Care (3,2,1)**

Prerequisite: Postgraduate student standing  
This course covers the healthcare systems applicable to Web, social media, and ubiquitous environment. It will explain to students how the healthcare system can monitor patients and elderly as they maintain their normal everyday activities, through body sensors and home environment sensors. It will further introduce how the data are collected to make trend analysis, determine state of well-being and warn health workers of potential problems.

**COMP 7450 User Interface Design and Usability Testing (3,2,1)**

Prerequisite: Postgraduate student standing  
This course provides an introduction to and overview of user interface design and usability testing. It integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. Issues include: command languages, menus, forms, and direct manipulation, graphical user interfaces, computer supported cooperative work, information

search and visualization, World Wide Web design, input/output devices, and display design.

**COMP 7460 MSc Practicum for Information Systems (3,\*,\*)**

Prerequisite: Postgraduate student standing  
Students work on group or individual system development projects. Each project is supervised by an academic staff, and it may be co-supervised by practising professionals. The project demands careful planning and creative application of underlying theories and enabling technologies. Students can select project in consultation with their project supervisors. A written report and an oral presentation are required upon successful completion of the project. Each project will be assessed by the supervisor(s) and one additional academic staff on four aspects: (1) project management and progress, (2) methodologies and results, (3) report writing, and (4) oral presentation. Through these projects, students will develop (1) mastery of integrating concepts with practice in information systems, (2) creative and systematic problem solving skills for analysing, designing, and implementing information systems, and (3) report writing and presentation skills for effective communication in IT enterprises.

**COMP 7470 Health Information Privacy (3,3,0)**

Prerequisite: Postgraduate student standing  
This course introduces health information privacy from legal, ethical, technical and economic aspects. Students will learn conceptions and legal foundations of health information privacy, security primitives, different privacy models, different anonymization algorithms, privacy technologies for biometrics, and privacy solutions for extended health data sharing scenarios. Students will also learn the economics of health information privacy. This course provides opportunities to explore cutting-edge privacy solutions in the context of health information and apply privacy technologies to real-life applications.

**COMP 7480 Programming for Web and Mobile Information Systems (3,2,1)**

Prerequisite: Postgraduate student standing  
This course aims at providing students with the opportunities to improve their understanding of the web and mobile information system developments. Through this course, students will learn: (1) how to install, manage and maintain the information systems, (2) the web programming and the database techniques, as well as hands-on experience, for developing web information systems, and (3) how to extend the information systems to mobile platforms.

**COMP 7490 Special Topics in Advanced Information Systems (3,3,0)**

Students will learn state-of-the-art topics in advanced information systems. Emphasis will be placed on the current issues, methodologies and/or practice. After completing this course, students will understand the selected topics in advanced information systems.

**COMP 7510 Foundations of Information Technology (3,3,0)**

This course introduces the basic structures and operations of the computer systems. Various components of operating systems are studied in detail. Basic concepts of data networks and LANs with respect to the OSI and TCP/IP models are examined. Students who complete this course will be suitably prepared for the other courses offered in the MSc in IT Management curriculum.

**COMP 7520 Foundations of Management in the IT Context (3,3,0)**

The course overviews the concepts in different business management disciplines so as to provide a foundation for students in managing IT projects and organizations.

**COMP 7530 IT Forum (1,1,0)**

Students are exposed to the current IT practices through seminars given by IT professionals and academic staff, interacting in small

groups with IT practitioners, and/or company visits. After completing this course, students will understand the current IT practice.

**COMP 7540 IT Management: Principles and Practice (3,2,1)**

This course deals with the management of information systems and technology as it is being practised in organizations today to produce value for businesses and consumers.

**COMP 7550 IT Project Management (3,3,0)**

This course deals with project management and addresses issues in information technology project development. On completion of the course, students should (1) have acquired basic skills for project managers, (2) be able to develop and prepare project plans for effective resource utilization, and (3) be able to manage IT development projects.

**COMP 7560 Information Systems Auditing (3,3,0)**

This course is to give students a thorough grounding in the theory, techniques and practical issues involved in computer-based information systems auditing. The students will have an in-depth understanding of auditing concepts and methods after taking this course.

**COMP 7570 IT Laws and Ethics (3,3,0)**

This course examines legal and ethical issues in the use of information technology. On completion of the course, students should (1) understand privacy, intellectual property rights, contracts and licenses as well as common criminal issues, (2) understand the legal obligations of a computer professional, (3) understand computer ethics and the importance of professional codes of conduct, and (4) be able to derive and justify a personal position on moral and ethical matters related to computers in society.

**COMP 7580 Electronic Transformation in Business (3,3,0)**

This course covers the use of technology in many aspects of a business, with particular emphasis on concepts and practices for modeling, specifying and integrating within-enterprise and B2B business processes. How the business process related to customer relationship management, enterprise resource planning, supply chain management, etc. could be transformed in the Internet era will be covered. Some case studies related to e-transformation in Business will also be discussed. Students after taking this course should be able to (1) understand how e-technologies can facilitate process/application integration with and across enterprise, and (2) evaluate the cost and benefit that e-transformation can bring to different business processes of an enterprise.

**COMP 7590 Information Management Systems Development (3,2,1)**

To extend the student's knowledge of information management systems and development methodology through the study of advanced theories and methodologies, and to examine the critical issues of current information systems (IS) research, so as to provide a student an integrative perspective of information management systems and development.

**COMP 7630 Web Intelligence and Its Applications (3,3,0)**

This course introduces the fundamental concepts as well as practical applications of Web Intelligence (WI) which combines contemporary Artificial Intelligence and advanced Information Technology in the context of Web-empowered systems, environments, and activities. Also, advanced topics related to Web Intelligence (WI) and their impact to different sectors of the society will be covered. After taking this course, students should be able to (1) identify the possible impact of Web Intelligence in the society, and (2) apply WI related techniques to advance existing Web-based systems and on-line business platforms.

**COMP 7640 Database Systems and Administration (3,3,0)**

This course is to provide an in-depth knowledge of relational database management systems (RDBMS). Topics include: conceptual modeling of a database, relational data model, relational algebra, database language SQL, relational database design, data storage, index structures, query evaluation, transaction processing, concurrency control, and crash recovery. In addition, advanced topics such as distributed databases and data warehouses will also be covered. The students will have a thorough understanding of RDBMS after taking this course.

**COMP 7650 Data Mining and Knowledge Discovery (3,2,1)**

Prerequisite: Basic knowledge in probability and statistics, basic database concepts

This course aims to introduce fundamental issues of knowledge discovery and the common data mining techniques including statistical methods and machine learning methods. Furthermore, their potential applications to a variety of areas such as business, finance, medicine, and so forth, are shown via some case studies.

**COMP 7680 Internet and World Wide Web (3,3,0)**

Students will learn the principles of the Internet and the World Wide Web and study some advanced/current topics. After completing this course, students will understand the principles of the Internet and the World Wide Web and be able to develop and manage Internet systems.

**COMP 7700 E-Technology Architectures, Tools and Applications (3,2,1)**

This course will develop students' understanding of recent developments in e-technologies, including XML, Web services, service-oriented architecture, Web-enabled business processes, as well as related architectures, tools, and applications. It will also enable students to acquire the capability to design and develop software systems based on e-technologies and to apply them to some domain applications.

**COMP 7730 MSc Project (3,\*,\*)**

Pre/co-requisite: COMP 7950 IT Project Skills

Students work on the projects proposed by themselves. Each project is supervised by an academic staff, and it may be co-supervised by practicing professionals. After completing the projects, students will submit written reports and present their results (e.g. new methodologies, IT systems, or critical surveys). Each project will be assessed by the supervisor(s) and one additional academic staff on four aspects: (1) project management and progress, (2) methodologies and results, (3) report writing, and (4) oral presentation. Through these projects, students will develop (1) mastery of integrating concepts with practice in IT Management, (2) creative and systematic problem solving skills for designing, analysing, managing or developing IT systems, (3) self-learning capability for sustainable self-development in the rapidly changing IT field, and (4) report writing and presentation skills for effective communication in IT enterprises.

**COMP 7740 Supplementary Programming (0,\*,\*)**

This course provides students with basic knowledge of computer-oriented problem solving methodologies, algorithm development, structured programming concepts and design techniques, and implementation tools that facilitate debugging and testing. In particular, structured programming skills will be illustrated with a contemporary programming language. This course is open to MSc in Information Technology Management students with inadequate programming background.

**COMP 7750 Information and Knowledge Management (3,3,0)**

This course introduces the basic principles and technologies of information and knowledge management. Information storage and retrieval systems, knowledge management solutions, and knowledge management systems will be covered. Students will be able to understand the impacts of information and knowledge

management in business and organization. They will be able to utilize information and knowledge management to maximize productivity.

**COMP 7760 Special Topics in Business Analytics (3,3,0)**

Prerequisite: The pre-requisite depends on the specific topics covered. The pre-requisite and the chosen topics will be announced before the semester starts.

Students will learn state-of-the-art topics in business analytics. Emphasis will be placed on the current issues, methodologies and/or practice. After completing this course, students will understand some current topics in and methodologies of business analytics.

**COMP 7770 Special Topics in IT Management (3,3,0)**

Prerequisite: The pre-requisite depends on the specific topics covered. The pre-requisite and the chosen topics will be announced before the semester starts.

Students will learn state-of-the-art topics in IT management. Emphasis will be placed on the current issues, methodologies and/or practice. After completing this course, students will understand some current topics in and methodologies of IT management.

**COMP 7780 Special Topics in Knowledge and Information Management (3,3,0)**

Prerequisite: The pre-requisite depends on the specific topics covered. The pre-requisite and the chosen topics will be announced before the semester starts.

Students will learn state-of-the-art topics in knowledge and information management. Emphasis will be placed on the current issues, methodologies and/or practice. After completing this course, students will understand some current topics in and methodologies of knowledge and information management.

**COMP 7790 Special Topics in Internet and Web Technologies (3,3,0)**

Prerequisite: The pre-requisite depends on the specific topics covered. The pre-requisite and the chosen topics will be announced before the semester starts.

Students will learn state-of-the-art topics in Internet and Web technologies. Emphasis will be placed on the current issues, methodologies and/or practice. After completing this course, students will understand some current topics in and methodologies of Internet and Web systems.

**COMP 7800 Analytic Models in Information Technology Management (3,2,1)**

This course aims to introduce different analytic models used in the management of information technology. These include practical applications of quantitative analysis techniques in business decision making, process modeling, planning and evaluation. The course focuses on the ability to recognize the appropriate models applicable to diverse information technology management situation, and to identify solutions to them. Emphasis will be placed on problem formulation and solution application rather than mathematical derivations.

**COMP 7810 Business Intelligence (3,2,1)**

Students will learn the methodologies and concepts of business intelligence, including the characteristics, architectures, and development of data warehouses and data marts. After completing the course, the students will understand the features and applications of Online Analytic Processing (OLAP), and identify the different types of OLAP. Emphasis will be placed on the understanding of enabling technologies and their applications to improve operations and decision making in business and healthcare contexts.

**COMP 7820 Decision Analysis and Support (3,2,1)**

To provide a study of decision analysis and support processes and relevant tools that provide support to such processes. Students will learn the challenges and techniques of decision making in an environment of imperfect and changing information. Both the qualitative and the quantitative aspects of decision analysis and support will be covered.

**COMP 7850 Information Security Management (3,2,1)**

This course studies the principles of information security management. The course content is compatible with current industrial standard in information security (e.g. CISSP certification). The students will also learn the current topics and issues in information security management. On completion of the course, students should be able to (1) understand the principles of information security management, (2) acquire the knowledge equivalent to current industrial standard in information security (e.g. CISSP certification), and (3) identify practical information security principles and guidelines with the consideration of legal and privacy issues.

**COMP 7870 IT Innovation Management and Entrepreneurship (3,3,0)**

The development of information technology and innovations plays an increasingly important role in enhancing the competitiveness of countries, organizations, and individuals. This course prepares students for the technology and information economy by providing the knowledge and skills necessary for innovation management and entrepreneurship. With particular emphasis on information technology-related activities, this course aims to (1) introduce students to the fundamental concepts, practices, opportunities, and challenges related to innovation management and entrepreneurship, (2) provide students with frameworks and tools for the successful management of innovation from idea generation to market exploitation, and (3) stimulate students' interest in entrepreneurship and thus cultivating an entrepreneurial spirit.

**COMP 7880 E-Business Strategies (3,3,0)**

E-business offers real and abundant opportunities for small, medium and large companies throughout the world. However, success in e-business rarely happens without strategy. This course exposes students to contemporary management thinking, methods, and strategies necessary to effectively build and manage e-business systems. This course aims to; (1) introduce students to the fundamental concepts and approaches of strategic management, (2) provide students with a comprehensive framework for understanding the business models and strategies for e-business, and (3) prepare students to be active participants in formulating and implementing e-business strategies for organizations.

**COMP 7930 Big Data Analytics (3,2,1)**

Prerequisite: Basic knowledge in probability and statistics, basic database concepts

This course aims to introduce the basic knowledge of big data analytics as well as the common data analytics techniques and tools. Furthermore, their potential applications to a variety of domains such as business, finance/banking industry, and health care are shown via case studies.

**COMP 7940 Cloud Computing (3,2,1)**

This course provides comprehensive and in-depth knowledge of cloud computing concepts and technologies. Topics include cloud computing models, cloud-enabling technology, cloud computing mechanisms, cloud computing architectures, and real-world considerations of working with clouds.

**COMP 7950 IT Project Skills (1,\*,\*)**

Student will learn and master information searching skills and writing skills and presentation skills for undertaking IT projects.

**COMP 7960 MSc Research I (3,\*,\*)**

Pre/Co-requisite: COMP 7950 IT Project Skills

Each student is required to work on an academic research project independently under the supervision of an academic staff. After completing the research projects, students will submit written research papers and present their research results. Each project will be assessed by the supervisor and one observer on four aspects: (i) project management and progress, (ii) methodologies and results, (iii) paper writing, and (iv) oral presentation. Through these research projects, students will learn and practise how to

identify research problems, conduct literature reviews, criticize and analyze existing solutions, propose and evaluate new solutions, write and present research papers.

**COMP 7970 MSc Research II (3,\*,\*)**

Prerequisite: COMP 7960 MSc Research I with grade B+ or above

Each student is required to work on an academic research project independently under the supervision of an academic staff. After completing the research projects, students will submit written research papers and present their research results. Each project will be assessed by the supervisor and one observer on four aspects: (i) project management and progress, (ii) methodologies and results, (iii) paper writing, and (iv) oral presentation. Through these research projects, students will practise how to carry out independent research, propose and evaluate new solutions, write and present research papers.

**COMP 7980 Dynamic Web and Mobile Programming (3,2,1)**

Prerequisite: Basic knowledge on database and computer programming

This course aims to cover key concepts, technologies and skills on server-side and client-side Web and mobile programming, including HTML, CSS, JavaScript, basic server-side scripting language, database connectivity and session management. Through this course, students will learn how to develop Web and mobile applications with dynamic and interactive contents.

**CRWG 3005 Creative Writing for New Media I (3,3,0) (C)**

This course is aimed to train students with the practical skills for writing scripts, especially for E-books, E-magazine, mobile phone films/video and digital radio broadcasting creatively. The general principle in creative writing for new media will be introduced from week 1 to 5. The second part will focus on writing scripts for mobile phone film/video, and digital radio broadcasting. A new way of interactive storytelling, creative mindset and grammar are highly emphasized.

**CRWG 3006 Introduction to Film and New Media (3,3,0)**

This course introduces students to the fundamentals of film and new media as the modern media forms and meaning-making entities in the era of media convergence. The course consists of two modules. The first module considers film as an art and cinematic practices by which viewers make sense of images and stories on screen. It provides a critical introduction to the basic film elements and critical approaches of film. The second module will engage students with an understanding of new media with a range of phenomena that underpin the critical discussions in the new media age. It will examine an array of key themes that preoccupied new media scholars, for example, identity, intelligence, ownership, surveillance, digital narrative by stressing on the Web-based entities such as blogs, online social networks, video-sharing sites, etc. Students will learn how new media serve as a tool for creative expression and cultural production that mediate the everyday interactions.

**CRWG 3015 Television Writing Workshop I (3,3,0) (C)**

This course will train students in professional scriptwriting for different TV programmes like Talk Show, Late Night Show, Reality TV, Children's Programme and TV News Magazine Show with Sit-com as the main focus. At the end of the course students will be able to write Sit-com scripts.

**CRWG 3016 Television Writing Workshop II (3,3,0) (C)**

This course will train students in professional scriptwriting for TV drama series and Made-for-TV movies. At the end of the course students will be able to write scripts for TV dramas.