REGULATIONS FOR THE DEGREES OF
MASTER OF SCIENCE IN ENGINEERING (MSc[Eng])
MASTER OF SCIENCE IN COMPUTER SCIENCE (MSc[CompSc]), AND
MASTER OF SCIENCE IN ELECTRONIC COMMERCE AND INTERNET COMPUTING (MSc[ECom&IComp])

(Applicable to students admitted in the academic year 2016-17 and thereafter)

(See also General Regulations and Regulations for Taught Postgraduate Curricula)

The degrees of MSc(Eng), MSc(CompSc) and MSc(ECom&IComp) are each a postgraduate degree awarded for the satisfactory completion of a prescribed curriculum in the Faculty of Engineering.

For the MSc(Eng) degree, the major part of the curriculum must include courses offered in one of the following fields: building services engineering, electrical and electronic engineering, energy engineering, environmental engineering, geotechnical engineering, industrial engineering and logistics management, infrastructure project management, mechanical engineering, structural engineering, and transportation engineering.

The MSc(Eng), MSc(CompSc) and MSc(ECom&IComp) curricula are offered in part-time and full-time modes.

MSc 1 Admission requirements

To be eligible for admission to the curriculum leading to the degree of MSc(Eng) / MSc(CompSc) / MSc(ECom&IComp), a candidate shall:

(a) comply with the General Regulations;
(b) comply with the Regulations for Taught Postgraduate Curricula;
(c) hold (i) a Bachelor's degree of this University in a relevant field; or
(ii) a relevant qualification of equivalent standard from this University or from another university or comparable institution accepted for this purpose; and
(d) satisfy the examiners in a qualifying examination if required.

MSc 2 Qualifying Examination

(a) A qualifying examination may be set to test the candidate's academic ability or his/her ability to follow the curriculum prescribed. It shall consist of one or more written papers or their equivalent and may include a dissertation.

(b) A candidate who is required to satisfy the examiners in a qualifying examination shall not be permitted to register until he/she has satisfied the examiners in the examination.

MSc 3 Period of Study

The curriculum of the degree of MSc(Eng)/MSc(CompSc)/MSc(ECom&IComp) shall normally extend over one academic year of full-time study or two academic years of part-time study.
Candidates shall not be permitted to extend their studies beyond the maximum period of registration of two academic years of full-time study or three academic years of part-time study, unless otherwise permitted or required by the Board of Faculty. For both full-time and part-time modes, the period of study shall include any assessment to be held during and/or at the end of each semester.

**MSc 4 Curriculum Requirements**

To complete the curriculum, a candidate shall, within the prescribed maximum period of registration stipulated in Regulation MSc3 above:

(a) satisfy the requirements prescribed in TPG6 of the Regulations for Taught Postgraduate Curricula;
(b) take not fewer than 72 credits of courses, in the manner specified in these regulations and syllabuses and pass all courses as specified in the syllabuses;
(c) follow courses of instruction and complete satisfactorily all prescribed practical/laboratory work; and
(d) satisfy the examiners in all forms of assessment as may be required in either
   (i) 72 credits of courses which must include a dissertation of 24 credits or a project of 12 credits as capstone experience; or
   (ii) at least 60 credits of courses successfully completed at this University (which must include a dissertation of 24 credits or a project of 12 credits) and not more than 12 credits of courses successfully completed at this or another university before admission to the MSc(Eng) / MSc(CompSc) / MSc(ECom&IComp) and approved by the Board of the Faculty.

**MSc 5 Dissertation or project report**

(a) A candidate who is permitted to select a dissertation or a project is required to submit the dissertation or the project report by a date specified by the Board of Examiners.
(b) All candidates shall submit a statement that the dissertation or the project report represents his/her own work undertaken after the registration as a candidate for the degree.

**MSc 6 Selection of Courses**

(a) A candidate shall select courses according to the guidelines stipulated in the syllabuses for the degree of MSc(Eng)/MSc(CompSc)/MSc(ECom&IComp).
(b) Selection of study patterns, as stipulated in the respective syllabus, shall be subject to the approval of the Head of the Department concerned.
(c) Candidates shall select their courses in accordance with these regulations and the guidelines specified in the syllabuses before the beginning of each academic year.
(d) Changes to the selection of courses may be made only during the add/drop period of the semester in which the course begins, and such changes shall not be reflected in the transcript of the candidate.
(e) Subject to the approval of the Committee on Taught Postgraduate Curricula on the recommendation of the Head of the Department concerned, a candidate may in exceptional circumstances be permitted to select additional course(s).
Requests for changes after the designated add/drop period of the semester shall be subject to the approval of the Committee on Taught Postgraduate Curricula. Withdrawal from courses beyond the designated add/drop period will be subject to the approval of the Committee on Taught Postgraduate Curricula.

MSc 7 Assessment

(a) The written examination for each course shall be held after the completion of the prescribed course of study for that course, and not later than January, May or August immediately following the completion of the course of study for that course unless otherwise specified in the syllabuses.

(b) A candidate, who is unable to complete the requirements within the prescribed maximum period of registration specified in Regulation MSc3 because of illness or circumstances beyond his/her control, may apply for permission to extend his/her period of studies.

(c) A candidate who has failed to satisfy the examiners in any course(s) is required to make up for failed course(s) in the following manners:

(i) undergoing re-assessment/re-examination in the failed course(s); or

(ii) repeating the failed course(s) by undergoing instruction and satisfying the assessments; or

(iii) taking another course in lieu and satisfying the assessment requirements.

(d) A candidate who has failed to satisfy the examiners in his/her dissertation or project report may be required to submit or resubmit a dissertation or a project report on the same subject within a period specified by the Board of Examiners.

(e) In accordance with G9(h) of the General Regulation and TPG8(d) of the Regulations for Taught Postgraduate Curricula, there shall be no appeal against the results of examinations and all other forms of assessment.

MSc 8 Grading system

Individual courses shall be graded according to the following grading system as determined by the Board of Examiners:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade</th>
<th>Grade Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>A+</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>Good</td>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>B-</td>
<td>2.7</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>Pass</td>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>Fail</td>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>
MSc 9  Discontinuation of Studies

Unless otherwise permitted by the Board of the Faculty, a candidate will be recommended for discontinuation of their studies in accordance with General Regulation G12 if he/she has:

(a) failed to pass 12 credits in an academic year; or
(b) failed to satisfy the examiners at a second attempt in his/her dissertation or project report within the specified period; or
(c) exceeded the maximum period of registration specified in Regulation MSc3.

MSc 10  Advanced Standing

Advanced standing may be granted to candidates in recognition of studies completed successfully before admission to the curriculum in accordance with TPG3 of the Regulations for Taught Postgraduate Curricula. Candidates who are awarded Advanced Standing will not be granted any further credit transfer for those studies for which Advanced Standing has been granted. The amount of credits to be granted for Advanced Standing shall be determined by the Board of the Faculty, in accordance with the following principles:

(a) a candidate may be granted a total of not more than 20% of the total credits normally required under a curriculum for Advanced Stranding unless otherwise approved by the Senate; and
(b) credits granted for advanced standing shall not be included in the calculation of the GPA but will be recorded on the transcript of the candidate.

MSc 11  Award of Degree

To be eligible for the award of the degree of MSc(Eng) / MSc(CompSc) / MSc(ECom&IComp), a candidate shall:

(a) comply with the General Regulations and the Regulations for Taught Postgraduate Curricula; and
(b) complete the curriculum and satisfy the examiners in accordance with the regulations set out.

MSc 12  Assessment results

On successful completion of the curriculum, candidates who have shown exceptional merit may be awarded a mark of distinction, and this mark shall be recorded on the candidates’ degree diploma.
SYLLABUSES FOR THE DEGREE OF
MASTER OF SCIENCE IN COMPUTER SCIENCE

(Applicable to students admitted to the curriculum in the academic year 2016-17 and thereafter)

Definition and Terminology

Stream of study – a specialisation in the curriculum selected by a candidate which can be General, Financial Computing, Information Security and Multimedia Computing.

Discipline course – any course on a list of courses in the discipline of curriculum which a candidate must pass at least a certain number of credits as specified in the Regulations.

Subject group – a subset of courses in the list of discipline courses which have the same specialisation.

Stream specific course – any course in a subject group which corresponds to the specialisation of the stream of study.

Elective course – any Taught Postgraduate level course offered by the Departments of the Faculty of Engineering for the fulfilment of the curriculum requirements of the degree of MSc in Computer Science that are not classified as discipline courses.

Capstone Experience – a 24-credit dissertation which is a compulsory and integral part of the curriculum.

Curriculum Structure

Candidates are required to complete 72 credits of courses as set out below, normally over one academic year of full-time study or two academic years of part-time study:

<table>
<thead>
<tr>
<th>Course Category</th>
<th>General Stream</th>
<th>Financial Computing / Information Security / Multimedia Computing Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline Courses</td>
<td>Not less than 36</td>
<td>Not less than 36 [Include at least 24 credits in Stream Specific Courses in the candidate’s corresponding stream of study]</td>
</tr>
<tr>
<td>Elective Courses</td>
<td>Not more than 12</td>
<td>Not more than 12</td>
</tr>
<tr>
<td>Capstone Experience</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>72</td>
</tr>
</tbody>
</table>
The curriculum provides advanced education and training in the philosophy, methods and techniques of Computer Science. It has four different streams of study: General Stream, Information Security, Multimedia Computing, and Financial Computing. Each discipline course is classified as one of the four subject groups as follows:

A. General

COMP7103. Data mining
COMP7201. Analysis and design of enterprise applications in UML
COMP7203. Modern software design
COMP7205. Enterprise architecture
COMP7303. High-performance computing
COMP7304. The wireless Internet and mobile network
COMP7305. Cluster and cloud computing
COMP7306. Web technologies
COMP7307. Advanced real-time embedded systems and applications
COMP7403. Computational molecular biology
COMP7404. Computational intelligence and machine learning
COMP7506. Smart phone apps development
COMP7604. Game design and development
COMP7801. Topic in computer science
COMP7805. Topic in computer network and systems

B. Information Security

COMP7301. Computer and network security
COMP7804. E-commerce security cases and technologies
COMP7806. Topic in information security
COMP7901. Legal protection of digital property
COMP7903. Digital investigation and forensics
COMP7904. Information security: attacks and defense

C. Multimedia Computing

COMP7502. Image processing and computer vision
COMP7503. Multimedia technologies
COMP7504. Pattern recognition and applications
COMP7505. User interface design and development
COMP7507. Visualization and visual analytics
COMP7605. Advanced multimedia data analysis and applications
COMP7807. Topic in multimedia computing

D. Financial Computing

COMP7405. Techniques in computational finance
COMP7406. Software development for quantitative finance
COMP7407. Securities transaction banking
COMP7802. Introduction to financial computing
COMP7808. Topic in financial computing
Course Selection

Candidates shall select courses in accordance with the regulations of the degree. Candidates must complete 8 courses and a dissertation. To qualify as a graduate of Information Security, Multimedia Computing, or Financial Computing Stream, candidates must pass at least 4 stream specific courses (at least 24 credits in total) in the corresponding subject group, and undertake a dissertation (COMP7704) in the area of the corresponding stream. For General Stream, candidate can choose any discipline courses from any subject group, and undertake a dissertation (COMP7704) in any area in computer science.

Candidate may select no more than 2 courses offered by other taught postgraduate curricula in the Faculty of Engineering as electives. All course selection will be subject to approval by the Programme Director and Course coordinators concerned.

MSc(CompSc) Course descriptions

The following is a list of discipline courses offered by the Department of Computer Science for the MSc(CompSc) curriculum. The list below is not final and some courses may not be offered every year.

All courses are assessed through examination and / or coursework assessment, the weightings of which are subject to approval by the Board of Examiners.

COMP7103. Data mining (6 credits)

Data mining is the automatic discovery of statistically interesting and potentially useful patterns from large amounts of data. The goal of the course is to study the main methods used today for data mining and on-line analytical processing. Topics include Data Mining Architecture; Data Preprocessing; Mining Association Rules; Classification; Clustering; On-Line Analytical Processing (OLAP); Data Mining Systems and Languages; Advanced Data Mining (Web, Spatial, and Temporal data).

COMP7201. Analysis and design of enterprise applications in UML (6 credits)

This course presents an industrial-strength approach to software development based on the object-oriented modelling of business entities. Topics include overview of object-oriented concepts; Unified Modelling Language (UML); object modelling using use cases and class diagrams; dynamic modelling using sequence, interaction and state diagrams; mapping object models to implementation models such as relational databases; and current trends in object technologies, such as components, design patterns and XML. Emphasis will be given on hands-on exercises with the use of CASE tools.

Prerequisites: A course in object-oriented programming and a course in software engineering or systems analysis and design.

COMP7203. Modern software design (6 credits)

The practice of software design has changed markedly in recent years as new approaches to design have gained broad acceptance and several have progressed to become mainstream techniques themselves. This course introduces the principles and practical application of these modern
approaches. It first reviews the goals of software design and the qualities that differentiate good designs from bad ones. From this foundation it teaches elemental design patterns, classic design patterns and anti-patterns, refactoring, refactoring to patterns, test-driven design and design for test. Implementation issues, programming idioms and effective use of the language are introduced and discussed where appropriate.

Prerequisites: A course in software engineering or analysis and design of software systems. The course also requires the ability to program in Java and a basic understanding of the UML class and sequence diagrams.

**COMP7205. Enterprise architecture (6 credits)**

This course aims to teach students the practical skills in modeling and developing enterprise IT architectures. It covers different enterprise architecture frameworks, methodologies and practices (such as TOGAF and Zachman). Students will also learn common enterprise integration patterns for implementation of complex enterprise applications based on Service-Oriented Architecture (SOA). New architecture trends (e.g., cloud computing, shared-nothing architecture, column-based database) will also be introduced.

**COMP7301. Computer and network security (6 credits)**

The aim of the course is to introduce different methods of protecting information and data in computer and information systems from unauthorized disclosure and modification. Topics include introduction to security; cryptographic algorithms; cryptographic infrastructure; internet security; secure applications and electronic commerce.

**COMP7303. High-performance computing (6 credits)**

This course offers an overview of state-of-the-art parallel architectures and programming languages. The students will learn the issues related to the performance of parallel algorithms, and how to design efficient parallel algorithms for parallel machines. Topics include milestones in the history of HPC and its applications; high-performance computing architectures; performance law; modern CPU design; interconnection network and routing techniques; memory hierarchy and cache coherence protocol; parallel algorithm design; parallel programming models and case studies of supercomputers.

**COMP7304. The wireless Internet and mobile network (6 credits)**

In the recent few years, many new kinds of wireless network such as mobile ad-hoc network and wireless sensor network are under intensive research by researchers worldwide. These networks enhance the quality of human life as they not only facilitate efficient communications among people, they also let people learn more about their surrounding environments. However, have you ever thought of the potential problems induced by these new kinds of networks?

This course aims at introducing to you various kinds of next generation wireless and mobile networks. We will highlight the scenarios, the characteristics and the technologies behind each kind of network. Then based on their design, we will discuss the potential issues that can appear or even be caused by them. Next we will demonstrate how these issues can be resolved by computer science methodologies.
COMP7305. Cluster and cloud computing (6 credits)

This course offers an overview of current cluster and cloud technologies, and discusses various issues in the design and implementation of cluster and cloud systems. Topics include cluster architecture, cluster middleware, and virtualization techniques (e.g., Xen, KVM) used in modern data centers. We will discuss three types of Cloud computing platforms, including SaaS, PaaS, and IaaS, by providing motivating examples from companies such as Google, Amazon, and Microsoft; and introduce Hadoop MapReduce and Spark programming paradigms for large-scale data analysis.

Prerequisites: Students are expected to have taken the undergraduate operating system course, and proficient at Java programming language. Some experiences in using Linux commands or administration tools for system configuring and troubleshooting in a Linux-based system could save significant time in your term project. We assume the students are at least familiar with the basic commands for network administration (e.g., ssh, VPN, ifconfig), system configuration (e.g., tar, sudo, make), and text files editing (e.g., vi or nano) under the Linux environment.

COMP7306. Web technologies (6 credits)

This course aims to give students a basic understanding of various Web technologies and their industry applications. Fundamental XML concepts and techniques, such as XML Schema, XSLT, SAX, and DOM, will be introduced. New technologies related to Web 2.0, web services, service oriented architecture (SOA), and cloud computing will be studied, including RSS, ATOM, Ajax, SOAP, WSDL, ebXML.

Prerequisites: basic web programming knowledge, e.g. HTML, JavaScript, and Java.

COMP7307. Advanced real-time embedded systems and applications (6 credits)

This course’s objective is to introduce students to the fundamental problems, concepts and approaches in the design and analysis of real-time embedded systems. It covers topics on real-time scheduling algorithms, microcontroller architecture, Digital Signal Processors (DSP) architecture, System-on-Chips (SoC), real-time operating systems, and case studies on real-time applications.

Prerequisites: Students should have basic knowledge about operating systems.

COMP7403. Computational molecular biology (6 credits)

To introduce computational methods and data structures for analyzing biological data (e.g. DNA, RNA and protein sequences). Typical topics include basics of molecular biology; biological sequence analysis; indexing data structures; RNA secondary structure alignment/prediction and phylogeny.

COMP7404. Computational intelligence and machine learning (6 credits)

This course will teach a broad set of principals and tools that will provide the mathematical and algorithmic framework for tackling problems using Artificial Intelligence (AI) and Machine Learning (ML). AI and ML are highly interdisciplinary fields with impact in different applications, such as, biology, robotics, language, economics, and computer science. AI is the science and engineering of making intelligent machines, especially intelligent computer programs, while ML refers to the changes in systems that perform tasks associated with AI.
Topics may include a subset of the following: problem solving by search, heuristic (informed) search, constraint satisfaction, games, knowledge-based agents, supervised learning, unsupervised learning; learning theory, reinforcement learning and adaptive control.

Pre-requisites: Nil, but knowledge of data structures and algorithms, probability, linear algebra, and programming would be an advantage.

COMP7405. Techniques in computational finance (6 credits)

This course introduces the major computation problems in the field of financial derivatives and various computational methods/techniques for solving these problems. The lectures start with a short introduction on various financial derivative products, and then move to the derivation of the mathematical models employed in the valuation of these products, and finally come to the solving techniques for the models.

Pre-requisites: No prior finance knowledge is required. Students are assumed to have basic competence in calculus and probability (up to the level of knowing the concepts of random variables, normal distributions, etc.). Knowledge in at least one programming language is required for the assignments/final project.

COMP7406. Software development for quantitative finance (6 credits)

This course introduces the tools and technologies widely used in industry for building applications for Quantitative Finance. From analysis and design to development and implementation, this course covers: modeling financial data and designing financial application using UML, a de facto industry standard for object oriented design and development; applying design patterns in financial application; basic skills on translating financial mathematics into spreadsheets using Microsoft Excel and VBA; developing Excel C++ add-ins for financial computation.

Pre-requisites: This course assumes basic understanding of financial concepts covered in COMP7802. Experience in C++/C programming is required.

COMP7407. Securities transaction banking (6 credits)

The course introduces the business and technology scenarios in the field of Transaction Banking for financial markets. It balances the economic and financial considerations for products and markets with the organizational and technological requirements to successfully implement a banking function in this scenario and is a crossover between studies of economics, finance and information technology.

COMP7502. Image processing and computer vision (6 credits)

To study the theory and algorithms in image processing and computer vision. Topics include image representation; image enhancement; image restoration; mathematical morphology; image compression; scene understanding and motion analysis.

COMP7503. Multimedia technologies (6 credits)

To study selected topics of multimedia technologies in depth. Topics vary, and may include compression algorithms, psychoacoustics, psychovision, storage systems, and media streaming.
COMP7504. Pattern recognition and applications (6 credits)

To study techniques in pattern recognition. Topics include statistical decision theory; density estimation; dimension reduction; discriminant functions; unsupervised classification and clustering; neural network; hidden Markov model; and selected applications in pattern recognition such as characters and speech recognition.

COMP7505. User interface design and development (6 credits)

For technology products and services, the user experience is the key to success. With the advanced development of processors, sensors, devices, algorithms and software tools, more possibilities of user interface can be created to improve or solve the human machine interface and operations. The course will study various input and output devices, software and hardware considerations, use case investigations.

COMP7506. Smart phone apps development (6 credits)

Smart phones have become very popular in recent years. For iPhones alone, 50,000,000 pieces were sold worldwide in 2009. In addition to iPhones, there are also Android phones, Symbian phones as well as Windows phones. Smart phones play an important role in mobile communication and applications.

Smart phones are powerful as they support a wide range of applications (called apps). Most of the time, smart phone users just purchase their favorite apps wirelessly from the vendors. There is a great potential for software developer to reach worldwide users.

This course aims at introducing the design issues of smart phone apps. For examples, the smart phone screen is usually much smaller than the computer monitor. We have to pay special attention to this aspect in order to develop attractive and successful apps. Different smart phone apps development environments and programming techniques (such as Java for Android phones and Objective-C for iPhones) will be introduced to facilitate students to develop their own apps.

Prerequisites: Students should have basic programming knowledge, e.g. C++ or Java.

COMP7507. Visualization and visual analytics (6 credits)

This course introduces the basic principles and techniques in visualization and visual analytics, and their applications. Topics include human visual perception; color; visualization techniques for spatial, geospatial and multivariate data, graphs and networks; text and document visualization; scientific visualization; interaction and visual analysis.

COMP7604. Game design and development (6 credits)

The course studies the basic concepts and techniques for digital game design and development. Topics include: game history and genres, game design process, game production, 2D/3D graphics, physics, audio/visual design, artificial intelligence.

Prerequisites: Basic programming skill, e.g. C++ or Java, is required
COMP7605. Advanced multimedia data analysis and applications (6 credits)

This course’s objective is to introduce advanced multimedia data analysis techniques, and the design and implementation of signal processing algorithms. It covers topics on Digital Filter Realization, Recursive and Non-Recursive filters, Frequency Domain Processing, Two-Dimensional Signal Processing, and application of multimedia signal processing to speech production and analysis, image and video processing.

COMP7704. Dissertation (24 credits)

Candidate will be required to carry out independent work on a major project that will culminate in the writing of a dissertation.

COMP7801. Topic in computer science (6 credits)

Selected topics that are of current interest will be discussed.

COMP7802. Introduction to financial computing (6 credits)

This course introduces the students to different aspects of financial computing in the investment banking area. The topics include yield curve construction in practice, financial modelling and modern risk management practice, etc. Financial engineering is an area of growing demand. The course is a combination of financial product knowledge, financial mathematics and computational techniques. This course will be suitable for students who want to pursue a career in this fast growing area.

Prerequisites: This course does not require any prior knowledge in the area of finance. Basic calculus and numeric computational techniques are useful. Knowledge in Excel spreadsheet operations is required to complete the assignments and final project.

COMP7804. E-commerce security cases and technologies (6 credits)

This course provides students knowledge about modern e-commerce security, through the study of various cases. It covers fundamental concepts in security technology so as to equip the students with enough background knowledge in security, and then covers the impact of the modern e-commerce environment to the changing demand of security. After that a bundle of cases will be covered, such as cases in communication security, cases in Internet security, cases in data security including personal data protection in both client-side and server-side, and application security cases. With the experience of studying these cases, the students will be asked to assess or design security solutions to some given e-commerce security problems, so as to acquire the ability to apply the learnt security technology to real-life cases.

COMP7805. Topic in computer network and systems (6 credits)

Selected topics in computer network and systems that are of current interest will be discussed.

COMP7806. Topic in information security (6 credits)

Selected topics in information security that are of current interest will be discussed.
COMP7807. Topic in multimedia computing (6 credits)

Selected topics in multimedia computing that are of current interest will be discussed.

COMP7808. Topic in financial computing (6 credits)

Selected topics in financial computing that are of current interest will be discussed.

COMP7901. Legal protection of digital property (6 credits)

This course introduces computer professionals to the various legal means of protecting digital property including computer software, algorithms, IP addresses in the form of domain names, and any work or innovation in digital form. Focus is on the main issues in protecting digital property arising from developments in information technology, and their legal solutions. Topics covered include, but are not limited to, the following: 1) Copyright protection of software and websites, 2) Patent protection of software and algorithms, 3) Legal protection of domain names and metatags, 4) Criminal sanctions against offences involving the digital technology.

COMP7903. Digital investigation and forensics (6 credits)

This course introduces the fundamental principles of digital investigation and forensics. The course starts with a brief introduction to common computer crimes and digital evidence, and then moves on to the computer basics and network basics pertaining to digital forensics, and finally comes to the techniques for digital investigation and forensic examination.

COMP7904. Information security: attacks and defense (6 credits)

This is an introductory course for some preliminary techniques in computer security and simple attacks for security protocols and schemes. Both the theoretical (e.g. the mathematics behind an encryption system and the attacks) and the practical (e.g. introduction of password cracking software tools) aspects of these techniques will be covered.

Prerequisites: Students are expected to have university level mathematics background and some programming experience.