COMP 2031 Group Project (1,1,2)
COMP 2032 Group Project (2,0,2)
Co-requisite: COMP 2010 Structured Systems Analysis and Design
The aim of the group project is to (1) develop students' ability to apply a methodological approach to the development of systems, by thorough analysis, good systems design and comprehensive documentation; (2) simulate a real-life working environment in the classroom, so that students gain experience of working as team members participating in systems development; and (3) improve the students' presentation and communication skills.

COMP 2040 Applied Information Systems Laboratory I (1,0,3)
Prerequisite: COMP 1180 Structured Programming
This laboratory provides practical hands-on experience on network and server administration, server-side web programming, and CASE tool.

COMP 2220 Software Engineering (3,2,1) (E)
Prerequisite: COMP 1210 Data Structures and Algorithms and MATH 1130 Discrete Structures
This course discusses principles and practical aspects of software development.

COMP 2230 Design and Analysis of Algorithms (3,3,0) (E)
Prerequisite: COMP 1210 Data Structures and Algorithms and MATH 1130 Discrete Structures
This course builds on the study of the analysis and implementation of algorithms and data structures from COMP 1210. The goal is to introduce a number of important algorithms that are interesting both from a practical and theoretical point of view. Algorithm design paradigms such as divide-and-conquer and dynamic programming will be discussed, and algorithms for e.g. sorting, searching and graph problems will be developed.

COMP 2320 Operating Systems (3,3,1) (E)
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 2330 Data Communications and Networking (3,3,1) (E)
Prerequisite: COMP 1170 Introduction to Structured Programming or COMP 1180 Structured Programming
Students will learn the principles of data communications, computer networks and network programming.

COMP 2550 Internship (0,0,0)
Prerequisite: Year II standing in BSc (Hons) in Computing Studies (Information Systems) 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 2600 Software Development Workshop II (0,2,2)
Prerequisite: COMP 1180 Structured Programming, COMP 1160 Database Management and COMP 2330 Data Communications and Networking
This workshop introduces the state-of-the-art technologies in Internet and Web applications. Practical hands-on experience on various system tools, networking tools, web programming, and modelling tools will be provided.

COMP 3005 Design and Analysis of Algorithms (3,3,1) (E)
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 3006 Software Engineering (3,2,1) (E)
Prerequisite: COMP 2015 Data Structures and Algorithms
This course discusses principles and practical aspects of software development.

COMP 3007 Systems Analysis and Design (3,3,0) (E)
Prerequisite: COMP 2016 Database Management and COMP 2007 Object Oriented Programming
In this course, students will learn some methodological approaches to the development of properly designed and documented information systems. The object oriented approach will be covered. This course is incorporated with COMP3008-9 Information Systems Development Project to let students practise the development of information systems.

COMP 3008 Information Systems Development Project I (1,1,2)
COMP 3009 Information Systems Development Project II (1,1,2)
Prerequisite: COMP 2007 Object Oriented Programming, COMP 2016 Database Management
Co-requisite *For COMP 3008*: COMP 3007 Systems Analysis and Design
This course provides a chance to students to apply a methodological approach to the development 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. They will also practise the presentation and communication skills in team management, report submission and project demonstration.

COMP 3015 Data Communications and Networking (3,3,1) (E)
Prerequisite: COMP 2007 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 3026 Digital Media Computing (3,2,2)
Prerequisite: COMP 2015 Data Structures and Algorithms, MATH 2005 Probability and Statistics for Computer Science, MATH 1005 Calculus
This course introduces basic properties of different types of digital media, namely audio, image and video in multimedia systems. As data compression is the most important enabling technology that makes modern multimedia systems possible, data compression

algorithms and the international standards of these digital media will be discussed.

COMP 3027 Enterprise Information Systems (3,2,1)
Prerequisite: Year III or above standing in Computer Science or Computing and Information Systems
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) (E)
Prerequisite: Year III or above standing in Computer Science, and Computing and Information Systems
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 3040 Internet and the World Wide Web (3,2,1) (E)
Prerequisite: COMP 2330 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 3045 Advanced Algorithm Design, Analysis and Implementation (3,2,2) (E)
Prerequisite: COMP 2007 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 problem solving techniques for implementing solutions for a variety of challenging problems. The course has two major components: (1) theory of computation: automata, language theory, and computational complexity; and (2) problem solving: programming for a variety of algorithms for real challenging problems.

COMP 3050 Distributed and Cloud Computing (3,3,0) (E)
Prerequisite: COMP 2330 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 3070 Digital Media Computing and Communications (3,2,1) (E)
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 3080 Interactive Computer Graphics (3,2,2) (E)
Prerequisite: COMP 1210 Data Structures and Algorithms and MATH 1140 Computational Mathematics
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 3090 Social Computing and Web Intelligence (3,3,0) (E)
Prerequisite: COMP 1180 Structured Programming
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 3110 Data Mining and Knowledge Discovery (3,2,1) (E)
Prerequisite: COMP 1160 Database Management, COMP 1210 Data Structures and Algorithms, and STAT 1210 Probability and Statistics
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 3140 Computer and Network Security (3,3,0) (E)
Prerequisite: COMP 1180 Structured Programming, COMP 2330 Data Communications and Networking, and Year III standing
This course introduces the fundamental concepts and techniques in computer and network security. Topics include basic encryption techniques, cryptographic algorithms, authentication and digital signature, public key infrastructure, access control, security models, as well as their applications to, for example, IP security, Web security, and trusted operating systems. In addition, it discusses other system and programming related security issues, including non-malicious errors, computer virus, and intrusion detection.

COMP 3220 Database System Implementation (3,3,0) (E)
Prerequisite: COMP 1160 Database Management and COMP 1210 Data Structures and Algorithms
This course is to provide an in-depth knowledge of relational database management systems (DBMS). Topics include 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.

COMP 3430 Information Technology Professional Practices (3,2,1) (E)
Prerequisite: Year III 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 3450 Information Systems Theory and Methodology (3,2,1) (E)
Prerequisite: Year III standing in Computer Science or Computing Studies
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 students with an integrative perspective of information systems and development.

COMP 3521-2 Final Year Project (3,0,9)
Prerequisite: Year III standing in Computer Science
Students will engage in a highly independent problem solving activity under the supervision of a faculty member and gain the practical experience of applying software systems principles and techniques acquired from the Programme to the solution of real-life problems. The project demands careful planning and creative application of underlying theories and enabling technologies. A thesis and an oral presentation are required upon successful completion of the project. This course is open to Computer Science majors only.

COMP 3551-2 Final Year Project (3,0,0)
Prerequisite: Year III standing in Computing Studies
The objective of the course is to enable students to carry out a piece of highly independent work. At the end, they will be able to demonstrate their mastery of course materials and their ability