

**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)**

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)**

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

This course discusses principles and practical aspects of software development.

**COMP 3007 Systems Analysis and Design (3,3,0)**

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)**

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)**

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.