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