COMP 1150 Object-Oriented Programming (3,3,2) (E)
Prerequisite: COMP 1170 Introduction to Structured Programming or COMP 1180 Structured Programming
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 1160 Database Management (3,2,1) (E)
This course introduces how to represent the data in a database for a given application and how to manage and use a database management system. Topics include: conceptual modelling of a database, relational data model, relational algebra, database language SQL and relation database design. In addition, hands-on DBMS experience is included. Students who have received credits for COMP 1160 are not allowed to take I.T. 1530, or vice versa.

COMP 1170 Introduction to Structured Programming (3,2,1)
This course introduces a methodical approach to programme development, starting from problem formulation and specification, through design of the solution, implementation, and documentation, to evaluation of the solution. The course matter is taught through a high-level structured programming language. This course is not available to Computing Studies, Computer Science and Physics majors with Computer Science concentration.

COMP 1180 Structured Programming (3,3,2)
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 Computer Science majors, Computing Studies majors, and Physics majors with Computer Science concentration only.

COMP 1210 Data Structures and Algorithms (3,2,1) (E)
Prerequisite: COMP 1170 Introduction to Structured Programming or COMP 1180 Structured 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 1320 Computer Organization (3,3,0)
This course introduces the organization of digital computers, the different components and their basic principles and operations.

COMP 1600 Software Development Workshop I (0,2,2)
Prerequisite: COMP 1180 Structured Programming
This workshop introduces the basic concepts in network and server administration, web server programming and multimedia. Practical hands-on experience on server administration, web programming and multimedia tools will be emphasized.

COMP 1610 Interactive Computing for Visual Communication (3,3,0)
Media convergence has transformed the computational machine into an unprecedented rich multimedia communication medium with ubiquitous connectively and interactive capability. This new medium presents endless possibilities with applications full of dynamic contents and rich visual user interface experience. Expertise in both computer science and visual communication are needed in order to fulfil the application demands. This course aims to address these demands and prepare the students with all-around trainings and skills to master the challenges. Unlike traditional courses which are merely designed for one specific discipline of students, this course offers a unique platform for students without and prerequisites in mathematics, computer programming or visual design to acquire and establish the knowledge necessarily for the challenges. This course introduce high-level programming concepts and approaches visual design on the new medium using approachable and intuitive computational visual building block environment such as Processing developed by MIT.

COMP 2005 Business in the IT Context (3,2,1) (E)
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) (E)
This course introduces the organization of digital computers, the different components and their basic principles and operations.

COMP 2007 Object Oriented Programming (3,3,2) (E)
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 2008 Applied Information Systems Laboratory I (1,0,3)
Prerequisite: COMP 2007 Object Oriented Programming
Co-requisite: COMP 3007 Systems Analysis and Design
This laboratory provides practical hands-on experience on network and server administration, server-side web programming, and CASE tools.

COMP 2009 Applied Information Systems Laboratory II (1,0,3)
Prerequisite: COMP 2008 Applied Information Systems Laboratory I
This laboratory provides practical hands-on experience on state-of-the-art software including various system and networking tools, multimedia tools, and web programming languages.

COMP 2010 Structured Systems Analysis and Design (3,3,0)
Prerequisite: COMP 1160 Database Management and COMP 1180 Structured Programming
In this course, students will learn some methodological approaches to the development of properly designed and documented information systems using the structured approach. This course is incorporated with COMP 2031-2 Group Project to let students learn how to work as a team for developing software systems.

COMP 2015 Data Structures and Algorithms (3,3,2) (E)
Prerequisite: COMP 2006 Computer Organization or COMP 2007 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) (E)
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. Students who receive credits for this course are not allowed to take IT 1530 (to be fixed), or vice versa.