chain management, etc. will be covered. Students gain a heightened awareness of emerging technologies and trends in e-business.

COMP 3720   Business Intelligence and Decision   (3,2,1) (E)
                Support
Prerequisite: Year III standing in Computer Science or Computing Studies

This course provides a study of business intelligence, the enabling technologies, and the applications of these technologies for business intelligence, including the analysis and design for data warehousing, various data mining and knowledge discovery and sharing techniques, and the applications of the results for decision making and improved operations.

COMP 3740   Information Systems Evaluation   (3,2,1)
                and Policy
Prerequisite: COMP 2010 Structured Systems Analysis and Design, COMP 2020 Object-Oriented Systems Analysis and Design, and Year III standing in Computer Science or Computing Studies

This course develops students' knowledge in two areas: (1) Evaluation of information systems, and (2) Information technology policy. The first area focuses on the measure of the quality of the information systems acquisition (by purchase or by engineering) process and of the deployed system. The second area addresses the enterprise-wide IT policy and standards related to IS acquisition.

COMP 3790   Advanced Algorithm Design,   (3,2,2)
                Analysis and Implementation
Prerequisite: COMP 1150 Object Oriented Programming, COMP 1210 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 3820   Information Systems Security   (3,3,0) (E)
                and Auditing
Prerequisite: Year III standing in Computer Science or Computing Studies

This elective course is to give students a thorough grounding in the theory, techniques and practical issues involved in computer-based information systems security and auditing. It draws on the students' knowledge gained in courses studied earlier, particularly information systems and accounting courses.

COMP 3830   Health Information Technology   (3,3,0) (E)
Prerequisite: Year III standing

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 3840   Medical Image Processing and   (3,2,1) (E)
                Applications
Prerequisite: Year III standing

This course focuses on two areas. First, students will learn some fundamental image processing techniques and the characteristics of different types of medical images. Students are then able to apply different classical image processing techniques to different types of medical images. In the second part, students will learn the structure and components of a medical imaging management system. Students will be able to apply the picture archiving and communication systems to the medical images.

COMP 3860   Clinical Decision Support and   (3,2,1) (E)
                Information Systems
Prerequisite: Year III standing

In this course, students will learn the methodology and techniques of medical data information management, and the models and algorithms used in computer-based clinical decision making. They will also learn the architectural design, structure, functions and components of clinical decision support systems and medical information systems.

COMP 4005   Information Systems Theory,   (3,2,1)
                Methodology and Architecture
Prerequisite: Year IV standing in Computer Science or Computing and Information Systems

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   (3,2,1)
                Professional Practices
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 4007   Software Design, Development   (3,2,1)
                and Testing
Prerequisite: COMP 3006 Software Engineering, or COMP 3007 Systems Analysis and Design

This course is aimed to further develop students' knowledge and skills in software engineering, and to introduce and discuss state-of-the-art techniques and advanced topics in developing reliable software systems.

COMP 4015   Artificial Intelligence and   (3,2,1)
                Machine Learning
Prerequisite: COMP 2015 Data Structures and Algorithms, MATH 1205 Discrete Mathematics and MATH 2005 Probability and Statistics for Computer Science

This course aims to introduce the principles and fundamental techniques of artificial intelligence, and in particular, machine learning. Students will learn the fundamentals and state-of-the-art techniques and acquire practical insights into the current development of this field.

COMP 4016   Clinical Decision Support and   (3,2,1)
                Information Systems
Prerequisite: COMP 2015 Data Structures and Algorithms, COMP 2016 Database Management

In this course, students will learn the methodology and techniques of medical data information management, and the models and algorithms used in computer-based clinical decision making. They will also learn the architectural design, structure, functions and components of clinical decision support systems and health care information systems.

COMP 4017   Computer and Network Security   (3,3,0)
Prerequisite: COMP 2015 Data Structures and Algorithms, COMP 3015 Data Communications and Networking

This course introduces fundamental concepts and techniques in computer and network security. Topics include basic encryption techniques, cryptographic algorithms, authentication and digital signature, public key infrastructure, security models, network security, as well as their applications (e.g. IP security, Web security, trusted operating systems). Popular cryptographic standards and libraries will be introduced. Other advanced topics in computer security will also be discussed (e.g. intrusion detection, access control, secure programming, computer virus).