makes modern multimedia systems possible, data compression algorithms and the international standards of these digital media will be discussed.

COMP 3070 Digital Media Communications (3,2,1)
Prerequisite: COMP 3060 Digital Media Computing
Students will learn the principles of digital media communications, study some multimedia communication systems, and learn some current topics.

COMP 3080 Computer Graphics (3,2,2)
Prerequisite: COMP 1210 Data Structures and Algorithms and MATH 1140 Computational Mathematics
Students will learn the essential mathematical foundation and algorithms for creating computer graphics, and the methods of implementing these algorithms. Students will also gain practical experience on these topics by using graphics application programming interface (API).

COMP 3090 Introduction to Web Intelligence (3,3,0)
Prerequisite: COMP 1180 Structured Programming and COMP 2330 Data Communications and Networking
This course introduces the fundamental concepts as well as practical applications of contemporary artificial intelligence (e.g. incorporating knowledge discovery and data mining, intelligent agents, and social network intelligence) and advanced information technology (e.g. involving wireless networks, ubiquitous devices, social networks, and data/knowledge grids) in the context of Web-empowered systems, environments, and activities. In addition, it discusses the techniques and issues central to the development of Web Intelligence (WI) computing systems.

COMP 3110 Data Mining and Knowledge Discovery (3,2,1)
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 3120 Intelligent Systems (3,3,0)
Prerequisite: COMP 1180 Structured Programming and Year III standing
This course is aimed at providing an overview of the state-of-the art computational models and techniques for developing intelligent information systems, software solutions, and human-computer interfaces. Some practical applications in such areas as Web Intelligence, Business Intelligence and Personalized Assistance will be introduced. Related implementation issues will be discussed.

COMP 3130 Information Retrieval and Search Engine (3,2,1)
Prerequisite: COMP 1160 Database Management, COMP 1210 Data Structures and Algorithms and STAT 1210 Probability and Statistics
This course introduces the basic principles of information retrieval and search engine. Advanced models and techniques in information processing and retrieval will be covered.

COMP 3140 Computer and Network Security (3,3,0)
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 3150 E-Technology Architectures, Tools and Applications (3,2,1)
Prerequisite: COMP 2330 Data Communications and Networking and Year III standing
This course will develop students' understanding of recent developments in e-technologies including XML, Web services, service-oriented architecture, Web-enabled business processes as well as related architectures, tools and applications. It will also enable students to acquire the capability to design and develop software systems based on e-technologies and to apply them to some domain applications.

COMP 3160 Computer Vision and Pattern Recognition (3,2,1)
Prerequisite: COMP 1210 Data Structures and Algorithms and MATH 1140 Computational Mathematics
This course gives students a broad knowledge on and techniques used in contemporary research on computer vision and pattern recognition.

COMP 3170 Artificial Intelligence and Machine Learning (3,2,1)
Prerequisite: COMP 1210 Data Structures and Algorithms, MATH 1130 Discrete Structures and STAT 1210 Probability and Statistics
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 3180 Theory of Computation (3,2,1)
Prerequisite: MATH 1130 Discrete Structures
This course aims to introduce the fundamental concepts in theoretical computer science. The topics include deterministic and non-deterministic finite automata, regular language, context-free language, Turing machines, Church's thesis, halting problem, computability, and complexity. Also, the formal relationships between machines, languages and grammars are addressed.

COMP 3190 Principle of Programming Language (3,2,1)
Prerequisite: COMP 1150 Object Oriented Programming
This course introduces the concepts that underline most of the programming languages students are likely to encounter, and illustrates those concepts with examples from various languages. Topics include syntax and semantic analysis, bindings, type systems, programming paradigms, control abstraction and flow, and runnable program buildup.

COMP 3210 Computer Architecture (3,2,1)
Prerequisite: COMP 1210 Data Structures and Algorithms and MATH 1130 Discrete Structures
This course provides students the ideas and concepts required to understand the architectures of modem microprocessors, including instruction set principles, pipelining, instruction-level parallelism, memory hierarchy design, I/O, and internetworking. It also provides students the analytical tools for assessing processor performance.

COMP 3220 Database System Implementation (3,3,0)
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 3230 Advanced Software Engineering (3,2,1)
Prerequisite: COMP 2220 Software Engineering, or COMP 2010 Structured Systems Analysis and Design and COMP 2020 Object Oriented Systems Analysis and Design

This elective course further develops students' knowledge in software engineering, and discusses state-of-art techniques and research topics in the field.

COMP 3240 Advanced Topics in Networking and Digital Media (3,2,1)

Prerequisite: The prerequisite depends on the specific topics covered. The prerequisite and the selected topics will be announced before the semester starts.

Students will learn some state-of-the-art topics in networking and digital media.

COMP 3250 Advanced Topics in Theoretical Computer Science (3,3,0)

Prerequisite: Year III standing in Computer Science

This course provides an in-depth study on a selected topic of theoretical computer science. The topic to be covered may vary from semester to semester, and is to be determined by the instructor. The topic could be a specific area of algorithmic problems (e.g. graph algorithms, combinatorial optimization), or a particular algorithm design paradigm (e.g. randomized algorithms, parallel algorithms).

COMP 3430 Information Technology Professional Practices (3,2,1)

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)

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 3460 Information Systems Management (3,2,1)

Prerequisite: Year III standing in Computer Science or Computing Studies

The course deals with the management of information systems and technology as it is being practiced in organizations today to produce value for businesses and consumers.

COMP 3490 Information Systems Professional Practices (3,2,1)

Prerequisite: Year III standing in Computing Studies

This course examines important professional issues in contemporary practice to help students become an effective participant in a team of professional information systems developers.

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 to apply what they have learned in solving practical problems. Students may propose a topic of their own choice (subject to a suitable supervisor being available) or select one from a list of topics provided by the Department.

COMP 3620 Human–Computer Interaction (3,2,1)

Prerequisite: COMP 1150 Object Oriented Programming

This course provides an introduction to and overview of the field of human-computer interaction (HCI). HCI is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design and many other areas. Issues include command languages, menus, forms, and direct manipulation, graphical user interfaces, computer supported co-operative work, information search and visualization, World Wide Web design, input/output devices, and display design.

COMP 3670 Mobile Computing (3,2,2)

Prerequisite: COMP 2330 Data Communications and Networking

This course introduces the basic concepts and principles in mobile computing. This includes the major techniques involved, and networks and systems issues for the design and implementation of mobile computing systems and applications. This course also provides an opportunity for students to understand the key components and technologies involved and to gain hands-on experiences in building mobile applications.

COMP 3710 Electronic Transformation in Business (3,3,0)

Prerequisite: Year III standing in Computer Science or Computing Studies

This course introduces the use of technology in many aspects of a business, with particular emphasis on concepts and practices for modeling, specifying and integrating within-enterprise and B2B business processes. Business processes related to customer relationship management, enterprise resource planning, supply 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 Support (3,2,1)

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 and Policy (3,2,1)

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 3820 Information Systems Security and Auditing (3,3,0)

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.