

by the ubiquitous environment, positioning techniques for localization, and networks and systems issues for the design and implementation of ubiquitous/pervasive computing systems and applications. Students need to understand the key components, devices and technologies involved and recognize research issues in ubiquitous computing. This course also provides an opportunity for students to gain hands-on experiences in building applications that realize the usefulness of ubiquitous computing.

COMP 7100 Computer Graphics and Animation (3,2,2)

Prerequisite: Research postgraduate student standing
Students will learn (1) the mathematical foundation and algorithms for creating computer graphics including transformation, rendering, and (2) the algorithms for animation. Students will also gain practical experience on these topics by using graphics application programming interface (API) and develop a graphics application prototype.

COMP 7110 Analytic Methods for Computer Science Research (3,3,0)

Prerequisite: Research postgraduate student standing
To learn the various analytic methods and gain the mathematical knowledge and skills necessary for computer science students to approach the study of advanced topics in the discipline of computer science at the graduate level.

COMP 7310 Technologies and Programming for Information Systems (3,2,1) (E)

Prerequisite: Postgraduate student standing
This course aims at introducing the web programming and database techniques for information system development. Through this course, students will learn: (1) how to install, manage and maintain the information systems, and (2) the web programming and the database techniques, as well as hands-on experience, for developing information systems.

COMP 7320 Professional Methodologies for Information Systems (3,2,1) (E)

Prerequisite: Postgraduate student standing
This course provides students with an integrative perspective of information systems and development by introducing different kinds of information systems and describing the underlying methodologies for such development. Topics include, but not limited to: model of information system, integrated view of different methodologies, methodology framework, hard systems methodology, soft systems methodology, and object-oriented methodologies. Through this course, students will be able to develop new models and solutions for an information system

COMP 7330 Information Systems Security and Auditing (3,3,0) (E)

Prerequisite: Postgraduate student standing
This course aims to introduce students to the fundamental concepts and techniques in computer and network security, and giving students an overview of information security and auditing, and to expose students to the latest trend of computer attack and defense. Other advanced topics on information security such as mobile computing security, security and privacy of cloud computing, as well as secure information system development will also be discussed.

COMP 7340 Enterprise Application Architecture and Integration (3,2,1)

Pre/Co-requisite: COMP 7320 Professional Methodologies for Information Systems

This course aims to cover key concepts and design principles related to enterprise application architecture and enterprise application integration. It includes topics like layering structure, business logic organization, patterns for object/relational access layers, model-view-control patterns for Web, message-based enterprise application integration, and recent advances in enterprise application architecture.

COMP 7350 Enterprise Information Systems Development (3,3,0) (E)

Prerequisite: Postgraduate student standing
This course provides an in-depth knowledge of development of enterprise information systems (EISs). Topics include alternative development strategies, agile development, software maintenance and functionalities of EISs.

COMP 7360 Enterprise Networking and Cloud Computing (3,3,0) (E)

Prerequisite: Postgraduate student standing
This course provides an in-depth knowledge of enterprise networking and cloud computing. Topics include Ethernet LANs, wireless LANs, MANs, WANs, TCP/IP internetworking, network security, network management, cloud computing architecture, cloud computing services, design and implementation of cloud computing.

COMP 7370 Information Processing in Financial Services (3,3,0) (E)

Prerequisite: Postgraduate student standing
This course provides an in-depth knowledge of technology applications in financial industry. After completing the course, students will understand the financial operations and the impacts of information technology to the financial sector. Students will also practise the use of selected financial software and learn how to develop an application to support financial processes.

COMP 7380 Computational Finance (3,2,1) (E)

Prerequisite: Postgraduate student standing and basic knowledge in probability and statistics
This course is designed to introduce the principles of computational finance. Topics covered include financial market mechanics such as options, futures, and other derivatives, hedging strategies using futures, and trading strategies involving options. Detail explanations of option pricing models such as the Black-Scholes-Merton equation and its solution and implementation will be given. Sensitivity factors affecting option prices will be discussed.

COMP 7390 Algorithms for Financial Information Systems (3,2,1) (E)

Prerequisite: Postgraduate student standing and basic knowledge in probability and statistics
This course is to introduce various algorithms in financial computation. Specifically, algorithms for interest rates, term structure, and bond price calculations will be studied. Factors affecting bond price volatility will be discussed. In addition, the theory of time series for financial forecasting will be investigated. Hands-on computer techniques for these calculations will be examined.

COMP 7400 Financial Analysis and Decision Making (3,2,1) (E)

Prerequisite: Postgraduate student standing
This course aims to introduce basic concepts in operational finance, such as financial statements concepts, financial ratio analysis, and etc., and to describe the techniques and tools that support financial decision making. Students will learn how to apply the decision analysis and making techniques and tools to various phases of financial processes.

COMP 7410 Medical Image Processing, Analysis and Applications (3,2,1) (E)

Prerequisite: Postgraduate student standing
In this course, students will learn fundamental image processing techniques, characteristics of different types of medical images, and how to apply different classical image processing techniques to different types of medical images. Students will also learn the basic concept, structure as well as the components in Picture Archiving and Communication Systems (PACS).