

## **MSc Computing with IT Management modules 2012-13**

### **Aligning IT and Business Strategies**

This module takes the view that organisations need to define what they are trying to achieve in strategic terms, and then design how they are going to achieve it in terms of processes, people and technology. By adopting this approach, the investment in IT can be aligned with the business, delivering benefits that can be actively and effectively managed. This module introduces the principles, concepts, methods and techniques that underpin understanding, and strategic decision making for the modern enterprise. You will identify and utilise appropriate tools, techniques and concepts of analysis and be introduced to System Dynamics as a method of modelling complex information systems and business processes.

### **Business and IT Management**

This module focuses on the skills and knowledge required to design, develop, implement and manage enterprise-level information systems in order to ensure that the expected business benefits are achieved. The module tackles the wider business environment and in the context of current trends and developments in information systems, students will develop their own project management skills together with an understanding of how organisations and IT can influence each other.

### **Computational Systems**

This module aims to provide an overview of the fundamental operations of a modern computing environment. It will provide a grounding in computer architecture, networks and operating systems that will enable students to understand the underlying functions that support software. Students will learn about the fundamental principles involved in the efficient use and performance of a computer, and advance to consider recent technological innovations, particularly multi-core architectures and ubiquitous and pervasive aspects of computing.

### **Distributed and Cloud Computing**

The aim of this module is to familiarise students with a wide range of distributed systems, from truly decentralised peer-to-peer environments such as Gnutella and Jxta, to brokered Web Services and modular co-operating services supported by Jini through to centrally coordinated structures such as social networking sites and Clouds. The module studies the organisation of distributed systems, focusing on various architectural styles used in their development; core technologies to implement distributed systems; various models and infrastructures to support Cloud computing – such as virtualisation; and emerging themes in distributed computing, such as fault tolerance and policy driven autonomic self-management.

### **E-Commerce and Innovation**

This module will develop your understanding of the new business opportunities afforded by the Internet. You will examine the concept of innovation and the

techniques and underpinning technology associated with electronic commerce via case studies of companies both large and small. Group work will be used to develop your practical skills and will include the development of a business plan.

### **Human Centric Computing**

This module is concerned with how systems can deliver information effectively to end users, and how end users can interact with computing. Beyond the traditional desktop GUIs (Graphic User Interfaces) this module explores the next generation of interaction mechanisms (3D displays, gestures, tactile feedback, Augmented Reality, etc) in context and from a human centric perspective. This is considered with reference to theory from Human Computer Interaction (HCI), Visualisation and Pervasive Computing. Students will deconstruct, explore and evaluate case-based examples - including a state-of-the-art minimally invasive surgical simulation system - in order to understand and apply human centric system design methodologies.

### **Information Modelling and Database Systems**

This module introduces the theoretical and practical issues relating to the design and use of database management systems. These extend to the latest types of technologies including object oriented, extended relational, non-relational and issues of their usage in contemporary settings such as the Cloud. Students will design and code information-rich web sites, and explore the role of XML and Semantic Web technologies in creating a “Web of data”. Systems for data mining and business intelligence will be discussed.

### **Information Processing in Python**

This module provides an accelerated introduction to computer programming. It introduces techniques to extract, store and process information using the Python programming language. To achieve this, students will be introduced to fundamental data structures and algorithms, the design and use of databases, regular expressions and the basics of HTML. The module uses a range of exemplars and exercises to rapidly develop high levels of skill and competency in this area.