Module synopsis

Business Statistics with Python

This module aims to introduce students to basic ideas of theoretical statistics, emphasising the applications of these methods and the interpretation of tables and results. Topics covered include: numerical measures, sampling methodologies, basic concepts of probability and hypothesis testing, analysis of variance, correlation and regression and chi-square applications. The module uses Python to illustrate and help students to better appreciate statistical theory and also understand how it works in practice.

Communications and Networks

This module aims to introduce the concept of networks and the Internet. Topics covered include: different types of data and the history of data communications, signals, modulation and multiplexing, switching technologies and routing, network architectures: LANS, WANs, the Internet, Internet services, multimedia services, broadband services, Internet protocols, optical and wireless networks.

Database Management and Security

This module aims to introduce fundamental database concepts including conceptual data modelling, the relational data model and relational algebra and develop skills in the design and manipulation of relational databases using Structured Query Language (SQL). It also covers database security methods and techniques that will be helpful in securing, monitoring and auditing database environment.

Interaction Design

This module aims to introduce students to the user interface design process and concepts of modern user experience design and production. The focus of the course is to develop conceptual designs based on the needs of users. It covers the user research methods, design sketching and design validation.

IT Project Management

This module aims to prepare students with project management skills needed to better manage IT projects. Built along the IT project management lifecycle, this module covers detailed topics of the basic concepts of IT project management, including

initiating, planning, controlling, executing, and closing projects. The module also shows how IT projects should be managed, from inception to post implementation review. The students will likely improve their management skills and abilities to define the project scope, create a workable project plan, and manage within the budget and schedule.

Systems Development Techniques

This module aims to introduce to students the different system analysis techniques and technologies for understanding and specifying what a computer-based information system should accomplish. It examines the complementary roles of systems analysts, clients and users in a system development life cycle. Students will learn different fact-finding techniques to elicit system requirements and how to develop business models, data and process models, and object models representing a system. Systems will also make use of a Computer Aided Software Engineering (CASE) tool to build those models that capture the specifications of a system.

Programming Fundamentals

This module aims to teach students programming fundamentals and object-oriented concepts using Java. Students will be taught programming fundamentals such as data types and operators, control structures, methods and arrays. Object-oriented concepts such as inheritance, interface, composition and polymorphism will also be introduced.

Problem Solving

This module aims to introduce students the programming concepts and techniques. Students will explore problem solving strategies, and apply these techniques to solving moderately complex problems. Students will also create pseudocode, flowcharts, and Python programs to supplement the theoretical foundations.