

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.

Computing and Cybersecurity Fundamentals

This module provides fundamental knowledge of computing and core cybersecurity principles. It covers the history and evolution of computing, information processing, computer architecture, operating systems, and key cybersecurity concepts, including attacks, detection and prevention, policy, and risk assessment.

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.

Programming with Python

This module uses Python to introduce students to fundamental programming concepts, including procedural and object-oriented programming, variables, data types, arrays, recursive functions, conditional expressions, selection statements, and repetition. This module also develops students' skills in designing and implementing well-structured algorithms for a range of mathematical problems.

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.