

BSc(Hons) in Mobile Computing & Communications

Aims and Rationale of the Programme

The management of mobile computing systems and infrastructure within the organisation, project management of computing projects, mobile security issues and the deployment of mobile computing systems at an enterprise level form strong themes in this programme. It provides a solid understanding of modern wired and wireless communications technologies and the software tools and techniques required for the development of modern enterprise computing systems that include mobile components. It also helps students to understand how mobile computer systems are developed and offers training to design and build them to meet real business needs. Additionally, this programme helps students develop the personal and professional skills needed to communicate and work effectively with those around them, whether they are computing or business professionals. In addition, the broad-based approach allows a flexible learning experience as students can select individual courses in various related areas such as multimedia, information systems and business-oriented computing. Additional opportunities exist for registered students to also take the industrial examinations of Cisco CCNA.

Year One

- Computer Programming I
- Systems Building I
- Computer and Communication Systems I
- Logical Foundations
- Analytical Methods in Computing

Year Two

- Organisation Project Development & Management
- Computer Programming II
- Advanced Programming
- Network Implementation II
- Mobile Technologies II
- Network Security II
- Application Development for Mobile Devices

Final Year

- Individual Project
- Web Application Technologies
- Programming Distributed Components
- Enterprise Mobile Computing Systems



Entry Requirements

High School Certificate (Grade 15/20) or equivalent
A minimum of TOEFL score of 213 (computer based test), IELTS 6.0, or a recognized equivalent (for example, successful completion of a programme of studies at HE of FE taught in English).

Attendance

3 years Full-time
(Part-time option available).

Assessment

Exams, assignments and project work.

Careers

Employment in many mobile computing and communications areas such as mobile computing systems development, integration, management, consultancy and support, project management and internet and e-commerce applications.

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Core Course Descriptions

Year 1

Computer Programming 1

This course will provide students with a solid foundation of fundamental programming and program design skills. The course presents the fundamental principles of computing using a standard object-oriented programming language (such as Java),

System Building 1

This course aims to provide an overview of the major components, conceptual, physical and human, in a software systems building environment and the understanding of the inter-connections between these components, assisting in developing the students' ability to use system building tools and techniques in order to construct systems.

Logical Foundations

This course contains the logic and mathematical ideas needed to underpin a rigorous approach to computing with emphasis on developing precise thinking, looking at modelling data and processes, introducing some reasoning techniques and investigating the use of statistics.

Analytical Methods in Computing

This course aims to extend the knowledge of the Logical Foundations course and give an introduction to discrete and continuous techniques, providing understanding over the nature of functions and their use in computing, understanding of the use of algorithms and the use vectors and matrices in a variety of applications.

Year 2

Organization Project Development & Management

The aims of this course are to encourage students developing a wide range of personal, professional and academic skills to support them in both industrial placement and their final year project with a view to enhancing the eventual employability of the graduate.

Computer Programming II

This course will allow students to attain advanced programming techniques, providing them the opportunity to gain advanced skills in object-oriented programming and to practice the use of object-oriented design and programming.

Advanced Programming

This course aims to deepen the skills and knowledge gained in topics like componentisation, concurrent programming, use of design patterns, dealing with dynamic data structures and programming in a distributed environment.

Network Implementation II

This course will enable the students to be able to design and implement a local area network using Cisco switches and routers. The students will undertake an exercise to design a network for a company using the current wiring standards.

Mobile Technologies II

This course aims to provide the necessary knowledge and expertise in wireless media, standards and architectures to complement the material covered in the other communications and networking courses at level2.

Network Security II

This course will enable the student to show an understanding of the security issues surrounding networks. This will include the security of Web servers and networks generally, including attaching to the Internet.

Application Development for Mobile Devices

This course aims to prepare students to work in the area of mobile software development by introducing them to the relevant technologies and equip them with skills in the design and development of mobile applications using up-to-date software development tools and APIs.

Year 3

Project

This course aims to provide the student with the opportunity to research, specify, design, implement and test a software product to an appropriate level of professional competence.

Enterprise Mobile Computer Systems

This course aims to examine the role of mobile applications in enterprise systems and demonstrate their integration within large distributed systems and to examine current approaches to software engineering for enterprise systems and mobile applications.

Web Application Technologies

This course aims to enable the students to develop skills needed for the design, development and maintenance of b2c and b2b web applications. It also aims to provide the students with practical experience of a wide range of web technologies in a realistic and complex application. It also introduces the student to the legal, professional, social and ethical issues involved in the development of usable and accessible web applications.

Programming Distributed Components

The aim of this course is to demonstrate and critically evaluate component design, distributed component design and distributed component frameworks. Also to examine current approaches to software engineering, including the use and reuse of software components and to give students advanced practical skills in using key technologies for developing software applications.