

BSc(Hons) in Computer Networking

Aims and Rationale of the Programme

Industry requires graduates with strong skills in the use of a number of software and hardware applications that are useful to the computer networking sector of industry. This programme has been specifically designed to be targeted at providing a cohort of students with a strong background in the use of these applications. In addition to the curricular offerings, students will also be able to gain industry qualifications in networking, namely Cisco's Certified Network Associate (CCNA). The programme examines a range of underpinning technologies involved in networking and specifically examines and employs the technologies involved in network configuration, performance management and their security.

Additionally there are core courses in management and professional practice.

Year One

- Introduction to Computer Networking
- Programming Technologies
- Computer and Communications Engineering Applications
- Learning and Communications
- Systems Analysis and Visualisation

Year Two

- Routing Management and Remote Access
- Enterprise Network Systems
- Systems Programming Technologies
- Software Engineering and Project Management
- Database Applications

Final Year

- Individual Project
- Management and Communications
- Advanced Switching and Network Troubleshooting
- Option

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 or FE taught in English).

Attendance

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

Assessment

Exams, assignments and project work.

Careers

On completion of the programme the successful graduate will enjoy a wide variety of job opportunities such as Networking engineer/designer/analyst working in the fields of IP telephony, security or switching and routing.

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Core Course Descriptions

Year 1

Introduction to Computer Networking

The course provides a broad-based introduction to the operation and configuration of network components in order that the student may then go on to take more advanced courses if he/ she chooses.

Programming Technologies

The course will develop students' understanding of a modern programming language and focus on object-oriented design and programming. All computing students should have a clear understanding of a modern programming paradigm.

Computer & Communications Engineering Principles

This course builds up a relationship between computer hardware, software and inters system communication including circuit creation, system testing, hardware and software architecture, network topography and configuration, and wired / wireless communication.

Systems Analysis & Visualisation

This course sets the scene for students in the analysis design and visualisation of systems. Starting with the nature of technological process development and following up with systems approaches, students will review problems and challenges in systems terms and evaluate the characteristics of systems.

Learning & Communication Skills

This course is designed to provide students with the tools to allow them to approach self-reliance, autonomy, in learning early in their time at University. It also provides them with the capability to learn techniques as they identify the requirement for knowledge that will enable them to be successful life long learners in a fast moving technology field.

Year 2

Routing Management & Remote Access

The skills developed in Introduction to Computer Networking will be developed and enhanced to address advanced principles of routing and Internet access with regard to designing, administering and troubleshooting large networks. This course provides an in-depth hands-on view of advanced routing and remote connection issues.

Database Applications

Database administration has become a key function for

Option Modules

In addition to the core modules, students are required to take one option module each year, related to Computer and Communications Engineering. Option modules include Design and Simulation of Communication Networks and Developments in Information Age Engineering.

many organisations. This course aims to provide an insight into database analysis and design techniques and provide an introduction to the Database Management System (DBMS) environment.

Systems Development

The aims of this course are to enable students to come to grips with the real-life problems in the development of medium and large integrated systems and familiarise them with relevant advanced software development techniques. The course is enriched with the use of examples of real-world situations in a variety of industrial situations.

Software Engineering & Project Management

The course aims to link the theory and practice of other taught elements of the programme into extended practice. It builds on skills such as software engineering methodologies for infrastructure development and management of the design and development process for software products including team working in IT.

Systems Programming Technologies

All computing professionals need knowledge of the principal concepts of operating systems. The associated issues of applications reliability and information security are also paramount to IT professionals. This course aims to develop knowledge in these areas.

Year 3

Advanced Switching & Network Troubleshooting

The course builds upon knowledge gained in Advanced Routing and Switching and provides the student with the opportunity to practice and implement advanced switching techniques and reflect upon the implications of these choices.

Management & Communications

The course is designed to meet the needs of engineers for management skills and has the aim of ensuring that students can quickly evaluate the systems and strategy to evolve appropriate actions. Students will gain key analysis and synthesis tools around finance strategic objectivity business imperatives and Human resources issues.

Project

Engineering students must be given the opportunity to exercise their engineering abilities to the full and demonstrate that they are ready to become practising professional engineers. This double unit enables them to do that.