Brighter futures begin with GCU

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Network & Security Engineering
Network & Security Engineering Suite

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Programme Philosophy

The philosophy of the programmes is unique to others programmes in the area, as it combines core technology concepts with specialised knowledge and skills in distinctive disciplines.

Each degree covers the areas of networking, digital security and forensics to a high-level, ensuring students are equipped for the technological advances and developing cyber threats and a multidiscipline skill set that industry desires.

The aim is to teach students the theory and practical (real world) skills employers desire.
Programme Structure

The programme is unique in presenting the opportunity to develop in-depth knowledge in the area of networking, digital forensics and security. All students entering second year on the suite of digital security based programmes follow a common year.

This flexible design enables students to establish a foundation on which to build upon and experience an insight into the alternative pathways enabling students to develop their interest and specialise in this selected area at the end of Year 2.

The third and fourth year specialises a student’s knowledge and experience in the areas of either networking, security or forensics, with significant hands-on experience.
Digital Security, Forensics & Ethical Hacking

The programme uniquely provides students with a challenging, rewarding and exciting opportunity to be at the forefront of detecting, eradicating and defending cyberspace from present sophisticated malicious attacks and advanced future threats.

It offers an industrial related curriculum geared towards producing graduates with technical skills, as well as expertise in data recovery, preservation, analysis and the provision of evidence.

It combines core technological concepts with the subject of forensics, together with the theory and practical skills of how illegal attacks are performed and the methods employed to counteract them.
Programme Structure

Year 1 Structure:
- Computer Systems Development
- Programming
- Web Development
- Database Development
- Network Technology
- Switched and Wireless Networks
- Security Landscape
- Discrete Mathematics
- Integrated Design Project 1

Year 2 Structure:
- Routing Fundamentals
- Designing Secure Networks
- Digital Forensics Essentials & Incident Response
- Operating Systems & Security
- Software Development
- Integrated Design Project 2
Programme Structure

Year 3 Structure:
- Network Penetration Testing & Ethical Hacking
- Digital Forensics Analysis
- Web Programming
- Regulating the Information Society
- Quantitative Modeling & Cryptography
- Integrated Design Project 3

Year 4 Structure:
- Honours Project
- Advanced Ethical Hacking & Web Application Penetration Testing
- Mobile Security, Forensics & Penetration Testing
- Cloud Security
- Security & People
- Professionalism in Practice
Student Employability & Engagement

We aim to engage with leading businesses and career experts in order for students to get ahead and make informed decisions in a highly competitive graduate marketplace.

- Placement Opportunities
- Employer Workshops/Lectures
- Professional Development Advice
- Recruitment and Careers Fairs
- Career Workshops
Career Opportunities

As the industry continues to grow rapidly, graduates with skills in digital security and forensics will be at the forefront of the new developments and will therefore enjoy excellent wide and varied employment opportunities.

A potentially large job market is emerging for graduates in this area. We expect graduates to embark on a range of career pathways including government agencies, law enforcement or associated private sector agencies, supporting specialist roles such as forensic practitioners, and security and forensic consultants.
Network Systems Engineering

The rapid growth in Intranet and Internet usage has led to a significant shift in the overall range of skills required in providing for the successful implementation and use of Information Systems within an organisation.

There is a significant demand for well qualified and professional staff who can design, support and administer all aspects of the wide range of IT infrastructure and Information System Technologies utilised within all businesses and organisations.

The programme provides students with a unique skill set that would enable them to be at the forefront of this fast growing IT industry. The programme covers various networking technologies and concepts in great depth.
Programme Structure

Year 3 Structure:
- Advanced Routing
- Scalable Campus Networking
- Data Communications and Transmission Systems
- Enterprise Systems Engineering
- Quantitative Modeling & Cryptography
- Integrated Design Project 3

Year 4 Structure:
- Honours Project
- Simulating Multimedia Networks
- Cloud Virtualization
- Professionalism in Practice
- Network Troubleshooting
- Optimizing Converged Networks & Quality of Service
Career Opportunities

In the past our students have secured placements with companies of the stature of; IBM, Dell, Royal Bank of Scotland and Strathclyde Police, etc. There is also the option to study abroad under our Erasmus Exchange.

Our course will prepare the students for entering the communication networks and security engineering sectors, an industry which employs one in the three of all jobs within the IT sector. This sector is becoming increasingly complex, with particular need for security, wireless and mobile specialist skills. Our graduates could find themselves working in IT/Network infrastructure support or as a network engineer.
Industrial Placement

The Programmes have an optional industrial placement period. Students wishing to take up this option will commence this placement during the academic session after their third year of the programme and continue to the taught Honours year in the session at the end of their placement period.

The industrial placement will be in appropriate employment in a suitable area of study. A key objective in undertaking the Industrial Placement is for students to further develop the understanding and application of their skills in a professional setting.
Professional Accreditation

To ensure graduates have excellent employment opportunities, the course has been designed with reference to accreditation criteria set by the British Computer Society (BCS) and the Institution of Engineering and Technology (IET).

It is envisaged that the degree will be put forward for accreditation when the first graduates in 2014.
Thank you

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