Information Security Systems

This programme is no longer recruiting.

Final award	BSc (Hons)
Intermediate awards available	Cert HE, Dip HE
UCAS code	-
Details of professional body accreditation	N/A
Relevant QAA Benchmark statements	-
Date specification last up-dated	July 2012

Profile

The summary - UCAS programme profile

BANNER BOX:

This programme forms part of a suite of Information Security programmes to consolidate a position as a leading national and international provider of Higher Education in the Information Security and Digital Forensics

ENTRY REQUIREMENTS

- 240 UCAS tariff points or equivalent
- A range of international qualifications are also accepted as is an appropriate level of work experience. Applicants from mature students are welcomed. All applicants should have or be expected to gain GCSE grade 'C' or above English and Maths -or equivalent. International applicants should have or expect to gain IELTS 6.0 or TOEFL 550.

ABOUT THE PROGRAMME

What is Information Security Systems*?*

The aim of the BSc in Information Security Systems is to provide students with a balance between theory, practical skills and experience. This will enable them to develop a sound knowledge and analytical ability facilitating their intellectual and professional development and future employment.

The threat from computer crime and other information security breaches continues unabated and the financial toll is mounting. The convenience of internetworking opens up the possibilities of committing computer crimes through security holes in the network. Hackers gain unauthorized access to computer systems, playing simple pranks such as defacing web pages to committing malicious attacks such as denial-of-services and stealing or damaging sensitive data

Information Security Systems at UEL

The range of computing programmes at UEL allows you to study a variety of subjects, including the development of information systems, programming, computer architecture, operating systems, networking, internetworking and the business contexts in which computer-based information systems are used. Emphasis is placed on the acquisition of practical-based skills, including the opportunity for one year's work experience, which provides a solid foundation for a career in computing

Programme structure

With the capabilities and skills developed on the programme, and the intellectual ability for creative and independent thinking, students will become a valuable component of the future investment in the field. The programme will therefore provide the path to a successful and rewarding career, particularly in the 'hard' end of network systems security and examination of computer systems or in the 'softer' security management and assurance.

Learning environment

A series of lectures / seminars involving module delivery staff and invited speakers providing theoretical input combined with views and experiences from applying information security management principles in practice. These will be complemented by a series of tutorials and workshops that aim to develop a thorough understanding of the topics presented in the lectures/seminars and the ability to critically analyse issues in information security management through the study of suitable case studies

Assessment

As the degree progresses students will be assessed in a number of different ways. They might be asked to write an essay or a report, to give a presentation or a demonstration of a piece of software. Each piece of assessed work will be issued to you with clear marking criteria. These criteria will indicate how you are being assessed for that piece of work. The section below gives you a general guideline of what we are looking for at different levels of the programme.

Work experience/placement opportunities

On our sandwich programmes, students undertake a 48 week industrial placement during the third year. This placement is normally paid. The university has long-standing links with a large number of well-known employers who can provide UEL students with worthwhile work experience. Many students are offered permanent employment by their placement organisation when they graduate. In addition to enhancing employment prospects, the placement provides a valuable learning experience, the results of which feed into our students' final year of study.

Project work

The student is required to produce a professional document of approximately 10,000 words, exclusive of appendices, reflecting standards of research and analysis to be expected at final year undergraduate level. The project should normally include both a theoretical and practical element.

Added value

Career opportunities for graduates with specialist IT skills in the field of information security and computer forensics are expected to continue increasing during the foreseeable future and this programme is designed to meet the demand. The requirements of industry are varied, challenging and continually changing, with computer security at the forefront of the knowledge explosion. With the capabilities and skills developed on the programme, and the intellectual ability for creative and independent thinking, students will become a valuable component of the future investment in the field. The programme will therefore provide the path to a successful and rewarding career. Particularly in the 'hard' end of network systems security and examination of computer systems or in the 'softer' security management and assurance.

IS THIS THE PROGRAMME FOR ME?

If you are interested in...

- Introduction to Computer Networking
- Information Systems Security
- Network Systems and Technologies
- Communications Security
- Surveillance Security
- Fundamentals of Cryptography
- Network Security
- Information Security Management
- Digital Forensics
- Information Security Audit and Assurance

If you enjoy...

- solving technical problems
- the challenge of finding a solution to seemingly insoluble problems
- the challenge of developing and enhancing existing information security systems and design and implement new systems, which will enable
- the organisation to fully manage security breaches
- listening to and working with others to identify and develop these solutions

If you want...

- the opportunity to work in a well-rewarded and fast-developing area
- sought-after and up-to-date skills
- to communicate and work with a wide variety of people to solve a range of business and technical problems
- to combine your interest in computing with other subjects

Your future career

Career opportunities for graduates with specialist IT skills in the field of information security and computer forensics are expected to continue increasing during the foreseeable future and this programme is designed to meet the demand.

How we support you

On entry to the programme you will be assigned a personal tutor who will be available to you to guide you and to answer any general questions about the programme or the university that you have.

Academic staff provide you with the backup necessary to gain the technical skills necessary to engineer computer games. Skills zone staff help you adapt to the requirements for university education and can provide additional services if necessary to overcome any language or general skills problem that you may think that you have.

Bonus factors

This programme which forms part of the CITE strategic plan establishes a suite of Information Security programmes from undergraduate to doctorate level and to consolidate a position as a leading national and international provider of Higher Education in the Information Security and Digital Forensics.

Outcomes

Programme aims and learning outcomes

What is this programme designed to achieve?

This programme is designed to give you the opportunity to:

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What will you learn?

- Become proficient in relevant technical skills
- Develop effective communication skills
- Be aware of the legal, social, ethical and professional issues in information Security systems and related areas
- Be equipped to pursue further study

Knowledge

- Gain sound knowledge and understanding of a wide range of security technologies
- To analyse and evaluate the issues and problems concerning information security in order to better manage security vulnerabilities and integrate security management within IT management.

Thinking skills

- To specify the technology requirements to facilitate for a secure remote or distributed electronic communications
- To communicate effectively and in particular to organise evidence and reasoning to produce persuasive argument

Subject-Based Practical skills

- To develop and enhance existing information security systems and design and implement new systems, which will enable the organisation to fully manage security breaches
- Have developed the ability to plan against the pitfalls and obstacles to effectively implement an Information Security Audit and assurance

Skills for life and work (general skills)

- To form an independent reasoned judgement on complex and controversial issues.
- Be proficient in the key skills required to complete an Information Security systems implementation within the context of strategic planning

Structure

The programme structure

Introduction

All programmes are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

- 0 - equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme
- 1 - equivalent in standard to the first year of a full-time undergraduate degree programme
- 2 - equivalent in standard to the second year of a full-time undergraduate degree programme
- 3 - equivalent in standard to the third year of a full-time undergraduate degree programme
- M - equivalent in standard to a Masters degree

Credit rating

The overall credit-rating of this programme is 360 credits.

Typical duration

The expected duration of this programme is 3 years when attended in full-time mode or 4 years in part-time mode. It is possible to move from a full-time mode of study to a part-time mode of study and vice-versa, to accommodate any external factors such as financial

constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.

How the teaching year is divided

The teaching year begins in September and ends in June, but some programmes also allow students to join at the start of Semester B, in February. A student, normally registering for 6 modules in one year (3 modules in each Semester) would do so in a full-time attendance mode of study and a student registering for up to 4 modules in one year (2 modules in each Semester) would do so in part-time attendance mode of study.

What you will study when

This programme is part of a modular degree scheme. A typical full-time student will take six 20 credit modules per year. An honours degree student will complete six modules at level one, six at level 2 and six at level 3.

It is possible to bring together modules from one subject with modules from another to produce a combined programme. Subjects are offered in a variety of combinations:

- Single - 120 credits at levels one, two and three
- Major - 80 credits at levels one, two and three
- Joint - 60 credits at levels one, two and three
- Minor - 40 credits at levels one, two and three

Modules are defined as:

- Core - Must be taken
- Option - Select from a range of identified modules within the field
- University wide option - Select from a wide range of modules across the University

LEVEL	MODULE CODE	TITLE	CREDITS	STATUS SINGLE	STATUS MAJOR	STATUS JOINT	STATUS MINOR
1	CN1047	Introduction to Computer Networking	20	Core	Core	Core	Core
1	CN1041	Academic skills for computing	20	Core	Core	Core	Core
1	CN1044	Introduction to Computer Systems	20	Core	Core	Core	
1	SD1042	Introduction to Software Development	20	Core	Option		
1	IM1701	Information Technology in Business	20	Core	Option		

Level	Code	Title	Credits				
1	SD1061	Information Systems Security	20	Core	University Wide Option		
2	CN2047	Network Systems and Technologies	20	Core	Core	Core	Core
2	CN2041	Professional Issues in ICT	20	Core	Option		
2	SD2052	Database systems	20	Core	Option		
2	CN2042	Communications Security	20	Core	Option		
2	CN2043	Surveillance Security	20	Core	Option		
2	SD2044	Fundamentals of Cryptography	20	Core	University Wide Option	Core	
3	CN3046	Network Security	20	Core	Core	Core	Core
3	CN3041	Research and Academic Development	20	Core	Core		
3	CN3061	Project	20	Core	Core	Core	Core
3	SD3061	Information Security Management	20	Core	Option	Option	Option
3	SD3030	Digital Forensics	20	Core	Option		
3	SD3059	Information Security Audit and Assurance	20	Core	Option		

Requirements for gaining an award

In order to gain an honours degree you will need to obtain 360 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 120 credits at level three or higher

In order to gain an ordinary degree you will need to obtain a minimum of 300 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 60 credits at level three or higher

In order to gain a Diploma of Higher Education you will need to obtain at least 240 credits including a minimum of 120 credits at level one or higher and 120 credits at level two or higher

In order to gain a Certificate of Higher Education you will need to obtain 120 credits at level one or higher.

In order to gain a Foundation Degree you will need to obtain a minimum of 240 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher

(A foundation degree is linked to a named Honours degree onto which a student may progress after successful completion of the Foundation degree.)

Degree Classification

Where a student is eligible for an Honours degree, and has gained a minimum of 240 UEL credits at level 2 or level 3 on the programme, including a minimum of 120 UEL credits at level 3, the award classification is determined by calculating:

$$\left(\text{The arithmetic mean of the best 100 credits at level 3} \right) \times 2/3 + \left(\text{The arithmetic mean of the next best 100 credits at levels 2 and/or 3} \right) \times 1/3$$

and applying the mark obtained as a percentage, with all decimals points rounded up to the nearest whole number, to the following classification

70% - 100%	First Class Honours
60% - 69%	Second Class Honours, First Division
50% - 59%	Second Class Honours, Second Division
40% - 49%	Third Class Honours
0% - 39%	Not passed

Assessment

Teaching, learning and assessment

Teaching and learning

Knowledge is developed through

- Lectures
- Invited speakers
- Seminars

Thinking skills are developed through

- Tutorials
- Group assignments
- Individual report writing

Practical skills are developed through

- Hands on tools
- Group work
- Assignment

Skills for life and work (general skills) are developed through

- Communications skills
- Ability to research

Assessment

Knowledge is assessed by

- Exam
- TCA
- Assignments

Thinking skills are assessed by

- Case study during tutorials
- Assignments
- Practical/ seminars

Practical skills are assessed by

- Delivering individual piece of work
- Testing a piece of implemented work
- assignments

Skills for life and work (general skills) are assessed by

- project

Quality

How we assure the quality of this programme

Before this programme started

Before this programme started, the following was checked:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;

- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements;
- the programme met any professional/statutory body requirements;
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

This is done through a process of programme approval which involves consulting academic experts including some subject specialists from other institutions.

How we monitor the quality of this programme

The quality of this programme is monitored each year through evaluating:

- external examiner reports (considering quality and standards);
- statistical information (considering issues such as the pass rate);
- student feedback.

Drawing on this and other information, programme teams undertake the annual Review and Enhancement Process which is co-ordinated at School level and includes student participation. The process is monitored by our Quality and Standards Committee.

Once every six years an in-depth review of the whole field is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to current and former students and speaks to staff before drawing its conclusions. The result is a report highlighting good practice and identifying areas where action is needed.

The role of the programme committee

This programme has a programme committee comprising all relevant teaching staff, student representatives and others who make a contribution towards the effective operation of the programme (e.g. library/technician staff). The committee has responsibilities for the quality of the programme. It provides input into the operation of the Review and Enhancement Process and proposes changes to improve quality. The programme committee plays a critical role in the quality assurance procedures.

The role of external examiners

The standard of this programme is monitored by at least one external examiner. External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to individual students.

External examiners fulfil these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating marks;

- Ensuring that regulations are followed;
- Providing feedback through an annual report that enables us to make improvements for the future.

Listening to the views of students

The following methods for gaining student feedback are used on this programme:

- Module evaluations
- Student representation on programme committees (meeting 6 times year)
- Student/Staff consultative committee (meeting 3 times a year

Students are notified of the action taken through:

- circulating the minutes of the programme committee
- a newsletter published three times a year
- providing details on the programme noticeboard

Listening to the views of others

The following methods are used for gaining the views of other interested parties:

- Annual student satisfaction questionnaire
- Questionnaires to former students
- Industrial liaison committee
- Placements Officer

Further Information

Alternative locations for studying this programme

Location	Which elements?	Taught by UEL staff	Taught by local staff	Method of Delivery
-	-	-	-	-

Where you can find further information

This programme which forms part of the CITE strategic plan establishes a suite of Information Security programmes from undergraduate to doctorate level and to consolidate a position as a leading national and international provider of Higher Education in the Information Security and Digital Forensics.

- The UEL web site (http://www.uel.ac.uk)
- The programme handbook
- Module study guides
- UEL Manual of General Regulations and Policies http://www.uel.ac.uk/qa/
- UEL Quality Manual http://www.uel.ac.uk/qa/
- Regulations for the Academic Framework http://www.uel.ac.uk/academicframework/
- UEL Guide to Undergraduate Programmes