Information Security and Computer Forensics (ISCF)

Final award	MSc
Intermediate awards available	PGCert, PGDip
UCAS code	N/A
Details of professional body accreditation	-
Relevant QAA Benchmark statements	-
Date specification last up-dated	Aug 2014

Profile

The summary - programme advertising leaflet

Programme content

The threat of cybercrime is increasingly apparent to individuals and organisations across the globe. From phishing to hacking, scamming to grooming, and botnets to cyber-terrorism, the variety and ingenuity of exploits appear to expand constantly. In this context, this programme addresses system vulnerabilities and the preventative measures that may counter cybercrime including steps to repair systems weaknesses and prevent repeat occurrence.

You will learn how to collect and examine digital evidence using Encase and FTK, and how to secure virtual crime scenes. You will learn and develop an understanding of legal issues raised by the increased use of communication networks. The programme also provides theoretical and practical knowledge in relevant technologies and techniques used to secure or investigate a computer system. The programme will enable access to Forensics Lab where the students have hand-on-hand training on how to collect and handle evidences from different physical and logical devices according to ACPO guide.

MSc Information Security and Computer Forensics at UEL

On completion of the MSc Information Security and Computer Forensics, the student will be able to:

- Demonstrate a critical understanding of the concepts of information security.
- Demonstrate a critical understanding of the procedures and techniques to employ when investigating computer incidents and computer misuse.
- Demonstrate a critical understanding of computer security and hacking techniques.

Admission requirements

An honours degree in Computing from a recognised UK University at 2.2 or above or, a degree qualification of a standard equivalent from a recognised university outside the U.K is expected.
In the case of applicants whose first degree is from overseas, then minimum overall IELTS

6.0 with a minimum 6.0 in writing & speaking and 5.5 in reading & listening or TOEFL 250/600 is required. International qualifications will be checked for appropriate matriculation to UK Higher Education postgraduate programmes.
Students that apply to enter stages of the programme may be admitted through normal Accreditation of Experiential Learning (AEL) or Accreditation of Certificated Learning (ACL) processes, or through an approved articulation agreement. Therefore such applicants must be able to demonstrate and evidence that they have the required learning outcomes as listed in the modules for which they are seeking exemption.

For AMC, applicants are normally expected to hold a first degree in Computing. The applicants should hold a Greek University Award (Ptychion) of no less than 6.5/10. Alternatively, a degree qualification of a standard equivalent to a British award classification of no less than a lower second class honours (2:2) from a recognised university is expected.

AMC will assess all students before acceptance on to a masters programme to ensure they have a level of English reading competence sufficient to utilise relevant publications. English reading support and development will be offered to any student who is found to require it

Programme structure

The MSc Information Security and Computer Forensics programme has FOUR taught modules plus a dissertation. All FOUR taught modules are running as:

Block mode of delivery (one week, Monday to Friday, 9:00- 17:00)

The duration of the MSc varies according to the semester in which the student starts the programme:

- The duration of the programme for full time students starting in semester A (September) is 12 months.
- The duration of the programme for full time students starting in semester B (February) is 18 months. Students would have a summer break in their studies.
- The duration of the programme for part time students starting in semester A (September) is 24 months.
- The duration of the programme for part time students starting in semester B (February) is 24 months.

Learning environment

In a postgraduate programme, in rapidly advancing subjects, it is felt more appropriate to expose students both to academic and practitioner innovation. Therefore the programme is delivered through a combination of formal lectures and seminars, reinforced by assignments and practical classes, making use of the in-house computing facilities and web based support.

Assessment

The modules are assessed through a combination of examinations and continuous assessment for each semester. The dissertation will be assessed by the staff supervisor and a second internal assessor and will be subject to an oral examination.

Relevance to work/profession

The programme will be continually developed to meet the specific demands that industry require and strives to use the latest industrial standard IT packages.

Dissertation/project work

The dissertation gives the student an opportunity to apply the discipline and skills of the programme to an individually selected topic requiring a measure of original development, providing a vehicle for conducting an in-depth research investigation, analysis and critical review of relevant material.

Added value

Internetworking opens up the possibilities of computer crimes through network systems' security holes. 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. Unfortunately, most users lack rudimentary knowledge of computer networks and the security measures, making them vulnerable which further encourage the acts of hackers.
Clearly, there is a strong need to train the IT professionals with the knowledge of Information Security and network security measures, intrusion prevention and detection, and forensic analysis for compromised systems.

Your future career

There is a shortage of skilled personnel in the fields of information security and digital forensics, and graduates of this programme can progress to work in multinational organisations including cybercrime-fighting agencies. In addition, the course will prepare you to sit for ACE Certification (FTK).

How we support you

Students are supported by an allocated personal tutor who is responsible for providing advice and guidance throughout their term of study. Support is also given during specific stages of progression, such as research methods for the dissertation, as well as extra support for those that require it such as English / study skills and IT training.

Bonus factors

This MSc enjoys a high exposure with industry; as external specialist lecturers continue to deliver their knowledge through lectures and seminars. This is particularly attractive to the students.

Students attend a research methods session which allows them the opportunity of investigating a variety of contemporary methodological frameworks and research methods so as to prepare them for the individual research dissertation.

Outcomes

Programme aims and learning outcomes

What is this programme designed to achieve?

The programme has the following set of aims:

- Produce Master graduates with skills in the field of Information security and Computer forensics.
- Provide students with a balance of theory, advanced practical skills and experience to enable them to develop a sound knowledge and analytical ability which will facilitate their intellectual and professional development and future employment at a senior level.

What will you learn?

On completion of the MSc Information Security and Computer Forensics, the student will be able to:

Knowledge

- Demonstrate a critical understanding of the concepts of information security. Corporate IT professionals are entering a new and complex era of managing their IT infrastructure. At the core of the challenges, they will face over the next several years, are the ability to better managed security vulnerabilities and integrate security management with the rest of IT management (primary indicator: Security Management);
- Demonstrate a critical understanding of the procedures and techniques to employ when investigating computer incidents and computer misuse (primary indicator: Seizure and Examination of Computer Systems

Thinking skills

- demonstrate an understanding of principles and practices derived from each of the modules studied and integrate and apply the knowledge and skills gained and be able to contribute to the development of related disciplines by research (primary indicator: Dissertation).
- Be able to contribute to the development of related disciplines by research

Subject-Based Practical skills

- Demonstrate a critical understanding of the computer security and be able to compare the different available intrusion detection systems in the industry (primary indicator: Network and Distributed Systems Security);

Skills for life and work (general skills)

- Demonstrate an awareness of current international, national and corporate strategic models for the development and management of technology (primary indicator: Strategic Technology Management);

- Analyse a problem systematically and implement an effective solution, as an individual or in co-operation with others involved in an enterprise.

Structure

The programme structure

Introduction

At the University of East London 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 180 for Masters, 120 for PgDip, 60 for PgCert.

Typical duration

The duration of the MSc varies according to the semester in which the student starts the programme:

- The duration of the programme for full time students starting in semester A (September) is 12 months.
- The duration of the programme for full time students starting in semester B (February) is 18 months. Students would have a summer break in their studies.
- The duration of the programme for part time students starting in semester A (September) is 24 months.
- The duration of the programme for part time students starting in semester B (February) is 24 months.

How the teaching year is divided

The teaching year is divided into two semesters of roughly equal length. A typical full-time student will study two 30 credit modules per semester and a typical part-time student will study one module per semester.

What you will study when

The programme is modular in construction and modules are all Core (must be taken). Each taught module is rated at 30M level credits; the final dissertation is 60M level credits.

Semester	Module Code	Module title	Credit	status
A	CN7014	Security Management	30	Core
A	CN7016	Computer Security (Block Mode)	30	Core
B	CN7018	Seizure and examination of computer Systems	30	Core
B	CN7015	Information Technology (IT) and Internet Law	30	Core
A,B,C	CN7000	Dissertation	60	Core

Requirements for gaining an award

In order to gain a Postgraduate Certificate, you will need to obtain 60 credits at Level M.

In order to gain a Postgraduate Diploma, you will need to obtain 120 credits at Level M

In order to obtain a Masters, you will need to obtain 180 credits at Level M. These credits will include a 60 credit level M core module of advanced independent research.

Masters Award Classification

Where a student is eligible for an Masters award then the award classification is determined by calculating the arithmetic mean of all marks 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%	Distinction
60% - 69%	Merit
50% - 59%	Pass
0% - 49%	Not Passed

Assessment

Teaching, learning and assessment

Teaching and learning

Knowledge is developed through

- Participation in lectures, tutorials and workshops
- Directed and general reading
- Primary and secondary research, e.g. using the Internet or Learning Resource Centre.

Thinking skills are developed through

- Successful completion of set assessment tasks
- Self-appraisal and self-evaluation
- Critical evaluation of concepts, assumptions, arguments and data

Practical skills are developed through

- use of general IT applications such as word processors and spreadsheets etc
- use of specialised IT applications such as program development environments

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

- working in groups to complete work set, such as presentations
- managing time to complete assessments by deadlines

Assessment

Knowledge is assessed by

- examinations
- multiple choice tests
- extended essays and reports

Thinking skills are assessed by

- all assessment tasks set, particularly those requiring critical evaluation
- use of appropriate problem solving skills

Practical skills are assessed by

- assessment tasks requiring use of general and specialised IT applications
- use of equipment in practicals and presentations

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

- evidence of group and team working
- ability to work to time constraints

Quality

How we assure the quality of this programme

Before this programme started

Before this programme started the University checked that:

- 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 the University's Quality Standing Committee.

Once every six years the University undertakes an in-depth review of the whole Subject Area. This 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 University's 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 to the University 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 4 times year)
- Student/Staff consultative committee (meeting 2 times a year

Students are notified of the action taken through:

- circulating the minutes of the programme committee
- a newsletter published twice 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:

- Information provided by the British Computer Society
- Liaison with schools and colleges whose students apply for places on our programmes
- Industrial liaison committee
- Research Sub-Committee

Further Information

Where you can find further information

Further information about this programme is available from:

- The UEL web site (http://www.uel.ac.uk)
- The student handbook
- Module study guides
- UEL Manual of Regulations and Policies http://www.uel.ac.uk/qa/
- Regulations for the Academic Framework http://www.uel.ac.uk/academicframework/
- UEL Quality Manual http://www.uel.ac.uk/qa/
- Departmental web pages http://www.uel.ac.uk/engineering/