



NEW START4U CIC
024 7767 1470
info@new-start4u.co.uk
12-14 Riley Square,
Coventry CV2 1LX, UK

MSc Cyber Security with Advanced Practice

London Campus

Level of study: Postgraduate

Mode of study: Full-time

Duration: 21-24 months

Overview

With the dramatic increase in high-profile cyber security incidents reported in the media, the demand for highly skilled security professionals is growing significantly as businesses across the globe seek to protect their networks and data. Our MSc Cyber Security with Advanced Practice provides you with a critical understanding of information governance and assurance, combined with technology risk management practices.

The Advanced Practice stage of this programme provides you with the opportunity to undertake a 12-15 week internship, allowing you to put your learning in to practice, enhancing your learning and further developing your employability.

Key facts

Develop key skills which are highly in demand by employers and gain valuable practical experience. Enhance your ability to handle and minimise security threats and incidents. Understand information governance and assurance. Also available as a part-time programme

Course information

Level of study: Postgraduate

Fees: To find out about current fees and student finance contact us

Entry requirements: 2:2 (second class) honours degree or equivalent from a recognised university in a related subject

IELTS 6.5 (or above) with no single element below 5.5 or equivalent .

English language requirements: IELTS 6.5 (or above) with no single element below 5.5 or equivalent

Mode of study: Full-time

Duration: 21-24 months

Assessment methods: Coursework and exams

Scholarships or bursaries: available



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Student finance: available

Payment plan: available

Starts: Jan, May, Sep,

About this course:

What will I study?

In addition to learning the key skills for handling security incidents, you will cover how to identify new and existing threats and the methods by which to reduce them.

This full-time course is taught at our London Campus where you will be taught by our experienced academics, guiding you as you analyse and evaluate the theories, principles and applications associated with the field. They will encourage you to question current approaches and processes in the fields of information and cyber security. You will be introduced to key theoretical and practical aspects using real world scenarios and case studies and will be expected to investigate new approaches, processes and solutions in this fast-moving environment. You will learn how to professionally, systematically and critically understand information governance and assurance along with technology risk management practices. The course will develop and enhance your ability to handle security incidents as well as identifying new and existing threats and determining methods to minimise them. This programme is also available as a part-time programme, or as MSc Cyber Security which lasts for 1 year.

Advanced Practice stage

The Advanced Practice version of this course offers you a valuable opportunity to secure a work placement or research placement, giving you experience of the workplace environment or live Cyber Security issues, and an excellent way to put your learning into practice. This stage of the programme will take place between your second and final semester, and is a semester long (12-15 weeks approx.) in duration. Internships as part of the Advanced Practice stage may be paid or unpaid. The alternative research placement allows you to work on a research project to carry out active research. Whether you choose the internship or research project, you will successfully develop your cyber skills and further enhance your employability. The module has two options for your third semester of study within the structure outlined below. The programme typically runs over three semesters. In the first two semesters taught modules are studied. The sequencing of the modules depends upon when you start – September or January. The table below shows a typical study pattern depending on your start date with Advanced Practice.

September starts

If you choose to start your Masters in September, your programme will last for up to 21 months. You will have a summer break after Semester 2, and commence your Advanced Practice stage in September.

January starts



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If you choose to start your Masters with Advanced Practice in January, your programme will run for 24 months. You will commence the Advanced Practice stage of the programme in the following January, immediately after your second semester. Please note that there are two summer breaks included in this programme for those starting in January

How will I be taught and assessed?

Throughout the course, you will be able to trial new approaches and processes in a safe environment, working on real life scenarios and case studies. Teaching on this programme is delivered through tutorials, lectures and practicals, totalling between 12-13 hours per week. You will also be expected to engage in independent study, around 29 hours per week.

You will be assessed using a mix of coursework and exams.

Your assessments are designed to help you develop the knowledge, understanding and skills required of a computer science graduate, step-by-step, year by year to help you build the capability to take a placement opportunity, and enter employment as a professional in your field. To ensure this, the assessments are designed to align with the learning outcomes of each module in the most appropriate way, whilst ensuring a full range of assessment methods across the programme.

Whilst learning and the measurement of learning will be linked closely to assessment, it is hoped that the learning environment and learning opportunities presented to you will encourage you to be motivated to learn for educational reasons, and not simply to pass summative assessments. The aim is to avoid surface learning and focus on the need for learning opportunities that elicit a deeper more reflective learning response. In-class practice and feedback are incorporated into modules as appropriate and you are encouraged to participate in these activities to develop the skills, techniques and expectations of summative assessment. For each module assessment you will be provided with a description of the tasks required, including what you will be expected to do, and of the criteria that you will be assessed against. Assessment methods include exams, reports, presentations, individual, group and project work. You will be provided with feedback on your summative assessment in a suitable way, for example in writing and / or verbally to help you understand what you did appropriately and where you could improve your work. Feedback is intended to help you reflect upon your learning and assessment and you should consider it to help you in future learning and assessment. You'll be taught by experienced lecturers and academics who use their industry experience to demonstrate how the theories you will learn translate in to real life situations.

Technology Enhanced Learning (TEL) is embedded throughout the course with tools such as the 'Blackboard' eLearning Portal and electronic reading lists that will guide your preparation for seminars and independent research. Significant emphasis is placed on developing your ability to complete a Masters degree. As part of induction you will be made fully familiar with the learning resources and support available to you. There will also be weekly academic support sessions designed to build your confidence and ability as a postgraduate learner. You will also be allocated an individual guidance tutor at induction. You will meet this tutor at regular intervals across your period of study.

Careers and further study

For those with high career aspirations, this programme can give you an extra edge in today's competitive job market. Graduates from the programme will be equipped to work in a variety of careers in the IT



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industry or to progress to academic or research orientated careers. Job roles, including roles in leadership and management, could include working in, for example, software engineering, network design and management, network security, artificial intelligence or IT consultancy.

Cyber security has become an increasingly recurring subject for businesses, governments and the public. Recent hacks include the US presidential election, Yahoo's 'biggest data breach in history' and the continual release of information by WikiLeaks, the financial cost to business has been estimated to be as high as \$1 trillion. Given this, business and governments alike have significantly invested in their cyber security systems, with the UK Government committing £650m in cyber security in its Strategic Defence and Security Review last autumn.

With all this investment, there are a plethora of career options following completion of this course, typical roles include:

- . Threat management & forensics
- . Risk analytics & management
- . Policy makers & Strategists
- . Operations & security management
- . Engineering, Architecture & Design
- . Chief Technology Officer

Upon successfully completing your course, you may undertake further professional development and training through Professional Pathways programmes. and provides you with an excellent opportunity to undertake professional training at the end of your Masters from one of the UK's leading corporate training providers, further enhancing your professional development and employability skills.

Entry requirements

Applicants should have the following:

Academic requirements

- . Minimum 2:2 (second class) honours degree or equivalent from a recognised university in a related subject

If you don't meet the academic requirements

Applicants with non-standard prior learning and or relevant work experience and training are encouraged to apply. A CV (curriculum vitae) made up of prior work experience and training would need to be submitted for consideration by our faculty alongside the standard application.

If you don't meet these entry requirements, you may be eligible to study our BSc (Hons) Applied Computing (Top-Up)

programme which is also taught at our London Campus. Successful completion of this Top-Up degree with a minimum of a 2:2 award will give you entry on to the MSc Cyber Security with Advanced Practice programme.



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English language requirements

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If you have IELTS 5.5 – 6.0, you may be eligible to join our Pre-Sessional English before starting this programme.

Modules

All modules on this course are core.

LD7006 - Information Governance and Security (20 credits)

You will learn about the information governance and security principles that underpin the management of an organisation's information assets. You will critically analyse the key concepts, theories, standards and frameworks of information governance and security, including risk management. This will enable you to evaluate an organisation's current approach to information governance and security and to advise on the design and implementation of an appropriate strategy for managing an organisation's information assets to meet legal, regulatory, organisational and/or societal needs for information governance and security. Topics include. Key concepts and principles of information governance and security. Information governance, security, risk and business continuity frameworks and standards . Legislative and regulatory frameworks . Strategies, policy and procedures Risk management and business continuity. Embedding information governance and security (incl. roles, responsibilities and culture)

LD7007 - Network Security (20 credits)

The main objective of this module is to provide you with an in-depth coverage of the fundamental concepts, principles and technologies for network security. This module will provide you with a theoretical and practical understanding on two important aspects related to security namely, data security and network security. The module will cover a number of topics including cryptography, classical systems, IP protocol security, private and public-key cryptography, cryptographic protocols, hash functions, authentication, signature schemes, email and web security, viruses, and firewalls. The concepts introduced in lectures are reinforced with the help of extensive hands on laboratory workshops. You will also have the opportunity to develop practical networking skills by using Cisco IOS, configuration of firewalls, switches and routers. You will also explore the wider impact of security via a consideration of related legal, ethical and social issues.

LD7008 - Wireless Networks and Security (20 credits)

This module is designed to be suitable for a variety of networking professional roles including those wishing to gain a deeper understanding of 802.11 protocols, security and enterprise deployment. Additionally, it is suitable for wireless network administrators and support or design staff requiring a greater understanding of the new technologies and applications of modern converged networks and delegates seeking Certified Wireless Network Associate (or similar)

certification. You will study the following areas:

- . Enterprise wireless deployment elements and methodologies
- . Basic RF characteristics for mobile systems



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- . 11 protocol operation and technologies
- . Wireless security issues and attack vulnerabilities

LD7009 - Information Assurance and Risk Management (20 credits)

This module will provide you with an in-depth knowledge of the processes used in assuring the security of information during use, sharing, storage, transmission and disposal. It will cover the protection of the integrity, authenticity, availability and confidentiality of all classes of information. The module is designed to provide a comprehensive framework for ensuring the resilience of business activities during threats and disruptive events thus enabling the assessment of potential risks to the business which could result from disasters or emergency situations. A breakdown of the key areas of information risk assessment – context establishment, information risk assessment will be followed by the various elements of risk analysis and evaluation. An examination of the treatment of identified risks will be used to illustrate that mitigation is not the only option that organisations The last element of the module will explore the important aspect of communicating the result of the risk management process with key stakeholders.

You will develop an in-depth understanding of the different types of business interruptions – man-made, natural disasters and technology failures – and the potential damage / revenue losses that can result from them. It is crucial to perform regular disaster recovery testing exercises in order to prove that organisations can recover from catastrophic loss of data and facilities.

LD7010 - Ethical Hacking for Cyber Security (20 credits)

This module will enable you to develop a deep understanding of both theoretical and practical aspects of Ethical Hacking. An essential part of a modern organisation's e-security. The module includes testing and analysis to determine vulnerabilities. Carrying out such work requires a special skill set, which crosses, legal issues, psychology, computer networks along with detailed understanding of system vulnerabilities and exploits. Additionally, you will be exposed to a collection of industry standard hacking tools and will learn how to apply these in an ethical manner to determine system vulnerabilities.

LD7028 - Research Methods and Project Management (20 credits)

In this module you will learn about research and the processes involved in carrying out research and project management, and you will apply them to develop a master's project proposal. This will include research approaches and methods of research, including literature searching, evaluation and review and project management tools and techniques. You will also consider relevant legal, ethical and social issues and good professional practice. By the end of this module you will have constructed a project proposal which can be executed in a master's project. This will contain a brief literature review justifying a research question, establish aims and objectives, and provide a plan of execution, using tools and techniques in project management, including an outline of deliverables (both artefacts and products).

LD7029 - MSc Computer Science and Digital Technologies Project (60 credits)

The aim of this module is to enable you to undertake a substantial academic research project at Masters Level and present the results from this work in both written and oral forms. Your project itself will be a major piece of independent and original research centred at the forefront of your programme discipline within the wider sphere of the computer science and digital technologies field.



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LD7005 - Advanced Practice (60 credits)

Internship/Work Placement Option: During the work placement/internship, the student will have workplace mentor, normally a member of the employer's senior staff and a visiting tutor from the Faculty.

When a work placement has been secured the students must complete a 'work placement confirmation' form (which will be available elp). This form identifies the employer and job title and will assist allow the faculty to confirm that the work placement is academically acceptable. The student will then be asked to complete and confidential personal risk assessment form which covers health issues and any travel risks inherent in the work role. The employer completes a learning agreement which identifies and work related health and safety risks and confirms Employer and Public Liability insurance.

Prior to taking up the work placement students will complete a self-assessment questionnaire to establish personal competences. Then, working with the employer and visiting tutor identify learning and development experiences available in the workplace. This will take the form of a personal learning contract. At the end of the placement the student will repeat the competence assessment to provide a framework for the reflective account of the placement which forms the assessment of the module.

Study Log: During your placement it is advisable to maintain a Study Log which details work experience and learning achieved. This gives you a framework for discussion with your supervisor.

Research Placement

The University has a number of Research Institutes and interest groups carrying out active research at the cutting edge of your Masters study. If you wish to participate in one the research groups associated with your programme of study you will need to contact the module tutor who will introduce you to appropriate research professors. Following as successful interview you will be assigned role in an ongoing research project. The Faculty will take responsibility for health and safety issues around your placement.

The student, research team and module tutor will identify learning outcomes available within the research group and establish a personal learning contract with the student. At the end of the placement the student will provide evidence of the learning achieved as part of the reflective account of the placement.

Please note that your tuition fees do not include the cost of course books that you may choose to purchase, stationery, printing and photocopying, accommodation, living expenses, travel or any other extracurricular activities. As a London Campus student, you will have full access to our online digital library with over 400,000 e-books and 50,000 electronic journals. The modules you will study do not require you to purchase additional textbooks although we recommend you allow an additional £100 for the duration of your studies should you choose to purchase any additional reading materials.