MSc Cyber Security with Advanced Practice

London Campus

Level of study: Postgraduate

Mode of study:

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

https://london.northumbria.ac.uk/course/msc-cyber-security-with-advanced-practice/

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Course information correct as of 3rd January 2020 17:11:36
Upon completion of your programme, you will be eligible for the QA Professional Pathways programmes which will enable you to further develop your skills with one of the UK's largest providers of IT and project management training. Also available as a part-time programme.

Course information

Level of study: Postgraduate

Fee (UK/EU): £9,990
Fee (International): £18,000

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:
Duration: 21-24 months

Assessment methods: Coursework and exams

Scholarships or bursaries: available

Student finance: available

Payment plan: available

Starts: Jan, May, Sep,

Next application deadline: 06 January 2020

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.

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**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**

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.

The Advanced Practice programmes are structured as below:

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<tr>
<td><strong>September start</strong></td>
<td>Semester 1</td>
<td>Summer Break</td>
<td>Masters Internship</td>
<td>Research Project</td>
<td>Final semester</td>
<td>Summer break</td>
<td>Final semester</td>
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<td><strong>January start</strong></td>
<td>Semester 1</td>
<td>Summer Break</td>
<td>Semester 2</td>
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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 will be taught by experienced lecturers and academics who use their industry experience to demonstrate how the theories you will learn translate into 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 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. This additional training is offered to our graduates for free, from our partner, QA 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. Find out more about Professional Pathways and your eligibility.

Related reading

From your Programme Leader, Hamid Jahankhani:

- What is Cyber Crime and How Can Cyber Criminology Help Reduce Victimisation?
- Fighting Cyber-Crime

Cyber Security reading:

- Threats to Information Security 2019
- Meet our Cyber Security Lecturer: Dr John McCarthy
- The State of Cyber Security
- 11th International Conference on Global Security, Safety and Sustainability
- High Flying Jobs in Cyber Security
- The 11%; Where are the Women in Cyber Security?
- Popular Course: Cyber Security
Advanced Practice:

- Master Your Future: MSc with Advanced Practice
- What is a ‘Masters with Advanced Practice’?
- Infographic: The Stages of a Masters with Advanced Practice
- Studying a Masters with Advanced Practice

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.

English language requirements

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

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

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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
- 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

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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.

**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

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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.

**Enquire now**

**Fees and finance**

**Tuition fees 2019/20**

- **UK/EU students:** £9,990
- **International students:** £18,000

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 Northumbria University 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.

**Scholarships and bursaries for international students**

If you are an international student and choose to study the full-time programme, you will be eligible for either our programme bursary, or a country bursary, whichever is greater. High performing students may be eligible for an academic scholarship in addition.
Depending on the country you are from, you may be eligible for one of our country bursaries and/scholarships to help finance your studies.

All of our scholarships and bursaries are automatically applied when we process your application and our team will be able to confirm your eligibility.

Scholarships and bursaries

Payment plans for self-funded students

If you need to spread the cost of your tuition, you may be eligible for our payment plan.

Payment plans

Government Loan for Masters study

If you are a UK or EU student, you may be eligible for a postgraduate loan of up to £10,000+ from the UK Government. Click here to find out more about the loan and whether you are eligible to receive it.

Postgraduate Loan

How to apply or find out more

How to find out more

Enquire now to find out to find out more information about the course, studying with us, the application process, and to ask any other questions you may have.

Enquire now

How to apply

Once you’re ready to apply, you can apply online to study the MSc Cyber Security with Advanced Practice. This method allows you to upload your supporting documents at the time of application and automatically receive your student application number.

Apply online

We strongly recommend that you submit your application as early as possible to allow you to complete all of the preparations needed to study your programme. After receiving an offer it can take time to arrange your finances and apply for your visa (if required) and it is important that you arrive in good time to enrol onto your course. Please refer to the Dates and Fees page.
If you are unable to apply online, then you can download a PDF application form and email it to london.admissions@northumbria.ac.uk.

International students application form  UK/EU students application form

Supporting documents

For us to assess your application in a timely manner, it is important that you provide us with the following documents:

- Fully completed application form
- Personal email address must be included on the application form
- Transcripts and/or certificates (including a certified translation if not in English)
- Passport – copy of personal details page
- Proof of financial sponsorship if applicable
- Reference
- Confirmation of immigration history including copies of previous and current visas if applicable

You can check more information on how to apply here, including guidelines for the application forms.