

## PROGRAMME SPECIFICATION

### KEY FACTS

Programme name	Computer Science with Cyber Security (with Integrated Foundation Year) Computer Science with Cyber Security (with Integrated Foundation Year and Placement)
Award	MSci (Hons)
School	School of Science & Technology
Department or equivalent	Department of Computer Science
UCAS Code	G4GF
Programme code	USCCSF
Type of study	Full Time
Total UK credits	600 720
Total ECTS	300 360
Partner (partnership programmes only)	None
Type of partnership	

### PROGRAMME SUMMARY

The MSci (Hons) in Computer Science with Cyber Security (with Integrated Foundation Year) will prepare you for a successful career in technical areas of computer science and information security. It will develop your specialist programming, analysis and design expertise in information security areas that are particularly sought skills in modern IT businesses as well as universities and research institutions.

The programme covers computer science starting with core foundational skills such as programming, progressing to cover a range of computing topics with a focus on practical application, whilst maintaining a strong theoretical underpinning, then allowing specialism in advanced topics, such as advanced algorithms and data structures, cryptography, network security, digital forensics and information security management. A large individual project will further explore a specialism whilst engaging with active researchers. The programme will also provide the professional skills essential to modern working.

The MSci (Hons) in Computer Science with Cyber Security (with Integrated Foundation Year) is a full-time five-year Integrated Masters Programme. The programme consists of five Programme Stages, each corresponding to an academic year. Programme Stage 0 is intended to bring you up to the same standard as students joining the main degree directly into the first year. The programme shares Programme Stage 1 and Programme Stage 2 with the BSc (Hons) in Computer Science and you can transfer to/from the programme at the end of Programme Stage 2. The programme also shares Programme Stage 1 with the BSc (Hons) Computer Science with Games Technology and you can transfer to/from the programme at the end of Programme Stage 1. These transfers allow you to choose your final degree

programme based on at least a year's experience of university study.

Each of the five Programme Stages of the programme consists of 120 credits:

- Programme Stage 0 consists core material in computing and mathematics with an additional course on employability.
- Programme Stage 1 develops the foundational material and key computing skills, including programming and databases.
- Programme Stage 2 consists of further compulsory core computer science subject matter and includes a 30-credit team project,
- You may elect to take an industrial placement between Programme Stage 2 and Programme Stage 3 or between Programme Stage 3 and Programme Stage 4.
- Programme Stage 3 consists of four core modules and four elective modules (one security elective and three computer science electives), allowing you to develop specialisms drawing on the expertise of academic staff
- Programme Stage 4 consists of four advanced core modules, one security or computer science elective and a large, 45-credit, individual project supervised by a member of the academic staff.

### Aims

This programme aims to prepare you with the knowledge, skills and values needed for a technical career as computer scientist and cyber security specialist by

- equipping you with the computer scientist's core skills in programming, software engineering, databases and mathematics;
- equipping you with a breadth of knowledge, skills and techniques needed as a professional in cyber security;
- developing your knowledge in specialised and advanced topics in information security;
- developing your practical problem solving capabilities in applying your technical skills;
- enabling you to work with and learn from active researchers in computer science and cyber security;
- enabling you to critically evaluate the technical, social and management dimensions of information security technologies.

The programme provides you with a number of exit routes.

***CERTIFICATE OF HIGHER EDUCATION IN COMPUTER SCIENCE*** The first exit route is for the Certificate of Higher Education in Computer Science which you are entitled to if you successfully complete Programme Stage 1 of the programme, earning 120 level 4 credits.

All of you completing Programme Stage one *or* the Certificate in Computer Science will be able to discuss underlying concepts and principles associated with computer science and relate these to concepts to problems arising in computer science. You will be able to express solutions to problems using the formalism introduced in Programme Stage one.

***DIPLOMA OF HIGHER EDUCATION IN COMPUTER SCIENCE*** The second exit route is for the Diploma of Higher Education in Computer Science, which you are entitled to if you have completed the Certificate in Higher Education and in addition you have successfully completed Programme Stage 2 of the programme, earning 120 level 5 credits.

All of you completing Programme Stage Two *or* the Diploma in Computer Science will build on your previous knowledge and experience to develop skills of enquiry in computer science and apply a variety of approaches to problem-solving as well as identify the limitations of your knowledge. You will be able to interpret open ended problems, apply your knowledge and skills to solve them and be able to write reports on your findings.

***BSc (Hons) IN COMPUTER SCIENCE WITH CYBER SECURITY*** The third exit route is the BSc (Hons) in Computer Science with Cyber Security, which you are entitled to if you have completed the Diploma in Higher Education and in addition you have successfully completed Programme Stage 3 of the programme, earning a further 120 credits, 90 of which at level 6, the rest at level 5 or level 6.

All of you completing the BSc (Hons) in Computer Science with Cyber Security will through core and elective modules further develop a coherent systematic, detailed knowledge of computer science and cyber security. You will be able to evaluate solutions to computer science and security related problems, assess current techniques for designing and developing solutions to computer science/cyber security problems and argue for your solutions using research and scholarship demonstrating your role as a reflective practitioner.

***MSci (Hons) IN COMPUTER SCIENCE WITH CYBER SECURITY*** You are entitled to the MSci (Hons) in Computer Science with Cyber Security, if you have completed the BSc (Hons) and in addition you have successfully completed Programme Stage 4 of the programme, earning 120 level 7 credits.

All of you completing the MSci (Hons) in Computer Science with Cyber Security will choose through core and elective modules to explore some areas of cyber security further to broaden your expertise and skills. In addition, in your individual project you will propose an information security problem, and will plan and manage the design and development of a solution to this problem, writing a report to describe this process.

## **WHAT WILL I BE EXPECTED TO ACHIEVE?**

**On successful completion of this programme, you will be expected to be able to:**

### Knowledge and understanding:

- use and explain how computer science supplements cyber security;
- explain the concepts of computer programming;
- review and critically evaluate the literature and current developments and challenges in cyber security, such as designing secure applications or efficient crypto algorithms for mobile devices;
- review and critically evaluate current challenges in cyber security, such as evaluating the security of a system or efficient approaches to digital forensics;
- define and solve practical security problems based on underlying theoretical considerations, such as algorithmic analysis;
- manage scientific and technical risks and uncertainty associated with the applications of computer science and cyber security;
- explain legal issues relating to computing: intellectual property, data protection, computer misuse and health and safety.

### Skills:

- develop and critically evaluate security for specialised computer systems;
- analyse, develop and select algorithms for computational and security tasks;
- design, develop, maintain and evaluate complex computer programs and security systems;
- identify cryptographic implementation problems and develop novel techniques to realise intended designs;
- use new hardware and software technologies to create computer systems that exceed current security capabilities;
- analyse, select and develop solutions to security problems;
- evaluate complex computer programs and systems in ways applicable to high security systems;
- plan and manage a large-scale individual problem-solving computing project;
- communicate requirements and proposals for secure systems to other computing professionals;
- present and communicate topics in cyber security effectively to technical and non-technical audiences;
- engage in critical peer review process of papers, software and proposals, and give positive advice for improvement and innovation.

### Values and attitudes:

- embrace technical security challenges as an opportunity for personal development;
- rationally exploit both traditional and novel technological approaches;

- rigorously assess alternative approaches and novel designs and implementations;
- define a technical goal and encourage and lead others in order to achieve it;
- assess the nature of intellectual property and its ownership, and respect it accordingly;
- understand professional, legal, social, cultural and ethical issues related to computing and security and be aware of societal and environmental impact;
- a professional and ethical approach to information security in the global environment.

This programme has been developed in accordance with the QAA Subject benchmark statements for Computing at Bachelor's and Master's level (2007, 2011).

### **HOW WILL I LEARN?**

The teaching and learning methods used are such that the levels of both specialisation of content and autonomy of learning increase as you progress through the programme. This is reflected in the programme structure: fundamental concepts and skills are addressed first, followed by core knowledge that builds on these fundamentals, which in turn prepares you for advanced electives and a 45 credit individual project in Programme Stages 3 and 4. This progression will be guided by active researchers in Computer Science and Cyber Security, with the culminating individual project conducted largely independently with appropriate academic supervision.

The programme is delivered and assessed via a coordinated combination of: lectures (including programmed student activity); supervised tutorials; supervised laboratory work; independent coursework; group project work; and individual project work.

The standard format is that taught modules are delivered through a series of 20 hours of lectures and 10 hours of tutorials/laboratory sessions. Lectures are normally used to:

- (a) present and explain the theoretical concepts underpinning a particular subject;
- (b) highlight the most significant aspects of a module's syllabus; and
- (c) indicate additional topics and resources for private study.

Tutorials are used to help you develop skills in applying the concepts covered in the lectures of the relevant module, normally in practical problem solving contexts.

Laboratory sessions serve a similar purpose as the tutorials but their strategy is to demonstrate application of concepts and techniques through the use of state-of-the-art software development tools and environments.

You are expected to undertake independent study, including substantial coursework assignments for each module, which will be spent working on background reading, revision of notes, work on tutorial problems, coursework and individual or group work on projects.

Project work plays an important part in computing undergraduate programmes. The Team Project provides you with experience of the issues involved in software development projects as well as enhancing your team-working and related

transferrable skills.

In the Individual Project you will carry out an independent investigation of a significant computing problem applying knowledge and skills that you have learnt through the programme. This activity is carried out under the supervision of academic staff, offered through a series of supervision sessions.

In addition to lecture, laboratory and tutorial support, the programme is supported by City's Moodle learning environment, which provides resources on each of the modules. This includes materials such as lecture notes and lab sheets, as well as interactive components, such as quizzes or discussion forums.

Elective placements and the workplace learning opportunities they provide are available to all students. A professional placement and career development module supported by visits from a Work-based Learning Advisor, ensures that you are able to identify learning opportunities that will enable you to attain and demonstrate competence in a work role; these opportunities arise naturally from workplace tasks, others are provided by negotiation focussed on your career and development plan.

#### **WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?**

Typically, modules are mainly assessed through written examination, but coursework also contributes to module assessment. The written examinations will contain theoretical questions, including mathematical aspects, as well as writing and analysing small amounts of code and small essays on the applications of computational techniques.

Coursework takes many forms, including programs, modelling, theoretical work, and essays. Project work plays an important part in computing undergraduate programmes. In the 30 credit Team Project you will be working in a group to design and develop a software product. For the 45 credit Individual Project you are expected to carry out an independent investigation of a significant cyber security problem applying what you have learnt through the programme, under the supervision of academic staff.

#### Assessment and Assessment Criteria

Assessment Criteria are descriptions, based on the intended learning outcomes, of the skills, knowledge or attitudes that you need to demonstrate in order to complete an assessment successfully, providing a mechanism by which the quality of an assessment can be measured. Grade-Related Criteria are descriptions of the level of skills, knowledge or attributes that you need to demonstrate in order to achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks. Assessment Criteria and Grade-Related Criteria will be made available to you to support you in completing assessments. These may be provided in programme handbooks, module specifications, on the virtual learning environment or attached to a specific assessment task.

The assessment criteria will reflect the learning outcomes of the modules and the programme as a whole.

### Feedback on assessment

Feedback will be provided in line with our Assessment and Feedback Policy. In particular, you will normally be provided with feedback within three weeks of the submission deadline or assessment date. This would normally include a provisional grade or mark. For end of module examinations or an equivalent significant task (e.g. an end of module project), feedback will normally be provided within four weeks. The timescale for feedback on final year projects or dissertations may be longer. The full policy can be found at:

[http://www.city.ac.uk/data/assets/word\\_doc/0003/69249/s19.doc](http://www.city.ac.uk/data/assets/word_doc/0003/69249/s19.doc)

### Assessment Regulations

In order to pass your Programme, you should complete successfully or be exempted from the relevant modules and assessments and will therefore acquire the required number of credits. You also need to pass each Programme Stage of your Programme in order to progress to the following Programme Stage.

Year 0 will not contribute to your overall aggregate mark. There is however a minimum overall average mark of 60% that is required to progress from year 0 to year 1. For programme stage zero the pass mark for each module is 50%.

The Pass mark for each module in Programme Stages 1, 2 and 3 is 40%, and the pass mark for each module in Programme Stage 4 is 50%.

If you fail an assessment component or a module, the following will apply:

**A maximum of 30 credits of compensation may be applied in the programme in total.** You may be allowed compensation if:

- Compensation is permitted for the module. Please refer to the 'what will I study' section in this specification for specific information on which modules can be compensated.
- It can be demonstrated that you have satisfied all the Learning Outcomes of the modules in the Programme Stage, and
- A minimum overall mark of no more than 10% below the module pass mark has been achieved in the module to be compensated, and
- An aggregate mark of 40% has been achieved for the Programme Stage, and
- Taking the mark to be compensated into account:

Undergraduate: an overall aggregate mark of 40% must have been achieved for the Programme Stage calculated on the basis of the Module marks weighted according to their credit value.

Integrated Masters Programmes: an overall aggregate for the Programme Stage (40% for Stages 1-3, and 50% for Stage 4), must have been achieved calculated on the basis of the Module mark weighted according to their credit value.

Where you are eligible for compensation at the first attempt, this will be applied in the first instance rather than offering a resit opportunity.

If you receive a compensated pass in a module you will be awarded the credit for that module. The original component marks will be retained in the record of marks and your original module mark will be used for the purpose of your Award calculation.

A student who has successfully completed Programme Stage 2 of the BSc programme may, with the approval of the Assessment Board, transfer to Programme Stage 3 of the related MSci programme provided that they have obtained:

- the required credits for Programme Stage 2, and
- an aggregate mark of least 55% at Programme Stage 2.

Resit: where you are not eligible for compensation at the first attempt, you will normally be offered one resit attempt.

If you are successful in the resit, you will be awarded the full credit for that module. The mark for each assessment component that is subject to a resit will be capped at the pass mark for the module. This capped mark will be used in the calculation of the final module mark together with the original marks for the components that you passed at first attempt.

If you do not meet the pass requirements for a module and do not complete your resit by the date specified, you will not progress to the next Programme Stage and the Assessment Board will require you to be withdrawn from the Programme

If you fail to meet the requirements for a particular Programme Stage or the Programme, the Assessment Board will consider whether you are eligible for an Exit Award as per the table below.

The Programme has minimum attendance requirements for designated teaching and learning events for each Stage. Students failing to meet these requirements may be subject to withdrawal from the programme.

If you would like to know more about the way in which assessment works at City, please see the full version of the Assessment Regulations at:

[City, University of London Senate regulations • City, University of London](#)

## **WHAT AWARD CAN I GET?**

### Master of Science with Honours:

For students completing the four-year programme, your overall aggregate mark will be calculated by combining the aggregate marks from Programme Stages 2, 3 and 4 with weightings 20%, 40% and 40% respectively.

Programme Stage	HE Level	Credits	Weighting (%)
0	3	120	0
1	4	120	0
2	5	120	20
3	6	120	40
4	7	120	40

**Class**                      **% required**

I	70
II upper division	60
II lower division	50

Master of Science with Honours (with placement after Programme Stage 2):

Programme Stage	HE Level	Credits	Weighting (%)
0	3	120	0
1	4	120	0
2	5	120	20
Placement	6	120	10
3	6	120	35
4	7	120	35

**Class**                      **% required**

I	70
II upper division	60
II lower division	50

Master of Science with Honours (with placement after Programme Stage 3):

Programme Stage	HE Level	Credits	Weighting (%)
0	3	120	0
1	4	120	0
2	5	120	20
3	6	120	35
Placement	6	120	10
4	7	120	35
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**Class**                      **% required**

I	70
II upper division	60
II lower division	50

480 credits must be achieved excluding IN3053.

Bachelor of Science with Honours:

Programme Stage	HE Level	Credits	Weighting (%)
0	3	120	0
1	4	120	0
2	5	120	40
3	6	120	60

**Class**                      **% required**

I	70
II upper division	60
II lower division	50

Bachelor of Science with Honours (with placement):

Programme Stage	HE Level	Credits	Weighting (%)
0	3	120	0
1	4	120	0
2	5	120	40
Placement	6	120	10
3	6	120	50

Class	% required
I	70
II upper division	60
II lower division	50

In addition, 360 credits must be achieved excluding IN3053.

Diploma of Higher Education:

Programme Stage	HE Level	Credits	Weighting (%)
0	3	120	0
1	4	120	50
2	5	120	50

Class	% required
With Distinction	70
With Merit	60
Without Classification	40

Certificate of Higher Education:

Programme Stage	HE Level	Credits	Weighting (%)
0	3	120	0
1	4	120	100

Class	% required
With Distinction	70
With Merit	60
Without Classification	40

**WHAT WILL I STUDY?**

Programme Stage 0

To pass Programme Stage 0 you must have acquired 120 credits at level HE3 as specified in the programme scheme. To progress from Programme Stage 0 to Programme Stage 1 of the degree, the Foundation Year requirements must have been satisfied. In particular, as stated above, a minimum overall year 0 average of 60% must be achieved.

Module Title	SITS Code	Module Credits	Core/ Compulsory/ Elective	Can be compensated?	Level
Introduction to Programming with Python	IN0011	15	Core	N	3

Web Development	IN0012	15	Core	N	3
Computer Fundamentals	IN0013	15	Core	N	3
Discrete Mathematics	MA0007	15	Core	N	3
Introduction to Probability and Statistics	MA0009	15	Core	N	3
Employability and Transferable Skills	IN0014	15	Core	N	3
Advanced Programming with Python	IN0009	15	Core	N	3
Group Project	IN0010	15	Core	N	3

### Programme Stage 1

To pass Programme Stage 1, an Honours degree student must have acquired 120 credits as specified in Programme Stage 1 of the Programme Scheme. In addition, a student must complete, achieving a mark of 100%, an online assessment covering risk/safety for safe operation of computing equipment. This online assessment is an exception to the assessment regulations; it has unlimited attempts but must be passed with a mark of 100% in order to progress to Stage 2.

This Programme Stage consists of 6 compulsory modules, worth 15 credits each, and 1 core module, worth 30 credits

Module Title	SITS Code	Module Credits	Core/ Compulsory/ Elective	Can be compensated?	Level
Introduction to Algorithms	IN1002	15	Compulsory	Y	4
Mathematics for Computing	IN1004	15	Compulsory	Y	4
Systems Architecture	IN1006	15	Compulsory	Y	4
Programming in Java	IN1007	30	Core	N	4
Operating Systems	IN1011	15	Compulsory	Y	4
Computer Science, Ethics & Society	IN1012	15	Compulsory	Y	4
Databases	IN1013	15	Compulsory	Y	4

### Programme Stage 2

To pass Programme Stage 2, you must have acquired 120 credits as specified in Programme Stage 2 of the Programme Scheme. To progress from Programme Stage 2 to Programme Stage 3, Programme Stage 2 requirements must have been satisfied.

This Programme Stage consists of 6 compulsory modules, each worth 15 credits, and 2 core modules, including a project module, which are worth 15 credits each.

You may transfer into this programme route at the start of Programme Stage 2 if:

- you have passed the modules in Programme Stage 1;
- resources allow the transfer;
- the programme director approves the transfer.

A student registered on the MSci programme who obtains the required credits for Programme Stage 2 but does not achieve an aggregate mark of at least 55% at Programme Stage 2 will be transferred to the related BSc programme.

Module Title	SITS Code	Module Credits	Core/ Compulsory/ Elective	Can be compensated?	Level
Data Structures and Algorithms	IN2002	15	Compulsory	Y	5
Language Processors	IN2009	15	Compulsory	Y	5
Computer Networks	IN2011	15	Compulsory	Y	5
Object-Oriented Analysis and Design	IN2013	15	Compulsory	Y	5
Professional Development in IT	IN2015	15	Core	N	5
Team Project	IN2033	15	Core	N	5
Programming in C++	IN2029	15	Compulsory	Y	5
Accenture School of Tech: Building Skills in Tech Transformation, Cloud and Consultancy	IN2032	15	Compulsory	Y	5

### Programme Stage 3

To progress from Programme Stage 2 to Programme Stage 3 on the MSci (Hons) programme, Programme Stage 2 requirements must have been satisfied, and in addition an overall aggregate of 55% achieved at Programme Stage 2. If the Programme Stage 2 requirements are met, but the 55% aggregate grade is not achieved, then you would be transferred to Programme Stage 3 on the BSc (Hons) programme.

To pass Programme Stage 3, you must have acquired 120 credits, excluding credits acquired for the elective module IN3053, as specified in Programme Stage 3 of the Programme Scheme.

This Programme Stage consists of 4 compulsory modules, each worth 15 credits, and 4 elective modules (4 computer science electives) each worth 15 credits. Elective choice may be further constrained by timetabling requirements. The full range of electives may not be available in all years.

Notes on *super-modules*:

- For *super-modules*, i.e. modules with identical titles (but differing module codes) offered at both Level 6 and Level 7, only one of these modules may be chosen.
- In these module pairs, the differences are primarily within the learning outcomes (Knowledge and Understanding and Skills) and how they are assessed. The learning activities and assessment evaluation will be aligned accordingly to reflect these differences.

You may transfer into this programme route at the start of Programme Stage 3 if:

- you have passed the modules in Programme Stage 2;
- resources allow the transfer;
- the programme director approves the transfer.

If you leave the programme at the end of Programme Stage 3 you must additionally take IN3007 (the Level 6 project) in order to gain professional recognition.

A student registered on the MSci programme who obtains the required credits for Programme Stage 3 but does not achieve an aggregate mark of at least 50% at Programme Stage 3 will not be able to proceed to Programme Stage 4. The Assessment Board will consider whether the student has met the requirements for a BSc Award.

*Elective choice may be constrained by timetabling requirements. The full range of electives may not be available in all years.*

Module Title	SITS Code	Module Credits	Core/ Compulsory/ Elective	Compensation Yes/No	Level
Network Security	IN3032	15	Compulsory	Y	6
Digital Forensics	IN3033	15	Compulsory	Y	6
Information Security Fundamentals	IN3049	15	Compulsory	Y	6
Cyber Crime and Sociotechnical Risk	IN3034	15	Compulsory	Y	6
Games Technology	IN2026	15	E	Y	5
Advanced Databases	IN3001	15	E	Y	6
Computer Graphics	IN3005	15	E	Y	6
Theory of Computation	IN3017	15	E	Y	6
Advanced Games Technology	IN3026	15	E	Y	6
Data Visualization	IN3030	15	E	Y	6
Digital Signal Processing and Audio Programming	IN3031	15	E	Y	6
Advanced Programming: Concurrency	IN3042	15	E	Y	6

Functional Programming	IN3043	15	E	Y	6
Cloud Computing	IN3046	15	E	Y	6
Computer Vision	IN3060	15	E	Y	6
Introduction to Artificial Intelligence	IN3062	15	E	Y	6
Programming and Mathematics for AI	IN3063	15	E	Y	6
Agents and Multi Agents Systems	IN3064	15	E	Y	6
User Centred Systems	IN3065	15	E	Y	6
Semantic Web Technologies and Knowledge Graphs	IN3067	15	E	Y	6
Cloud Technology for Business Transformation	IN2032	15	E	Y	6
Natural Language Processing	IN3045	15	E	Y	6
Hewlett Packard Enterprise: Technology Consulting	IN3052	15	E	Y	6
Web Development	IN3050	15	E	Y	6
Principles of Artificial Intelligence	IN3200	15	E	Y	6
Information Retrieval	IN3066	15	E	Y	6

Placement route:

Module Title	SITS Code	Module Credits	Core/ Compulsory/ Elective	Compensation Yes/No	Level
Professional Placement & Career Development	IN3053	120	Core	N	6

#### Programme Stage 4

For an MSci (Honours) degree student to progress from Programme Stage 3 to Programme Stage 4, Programme Stage 3 requirements must have been satisfied, and in addition an overall aggregate of 50% achieved at Programme Stage 3.

To pass Programme Stage 4, you must have acquired 120 credits as specified in Programme Stage 4 of the Programme Scheme.

This Programme Stage consists of 3 compulsory modules, each worth 15 credits, 2 elective modules worth 15 credits each, and a core project worth 45 credits.

*Elective choice may be further constrained by timetabling requirements. The full range of electives may not be available in all years.*

Module Title	SITS Code	Module Credits	Core/ Compulsory/ Elective	Compensation Yes/No	Level
Advanced Algorithms and Data Structures	INM422	15	Compulsory	Y	7
Cryptography	INM443	15	Compulsory	Y	7
Security Auditing and Certification	INM442	15	Compulsory	Y	7
Individual Project	INM450	45	Core	N	7
Advanced Databases	INM370	15	E	Y	7
Computer Graphics	INM376	15	E	Y	7
Digital Signal Processing and Audio Programming	INM378	15	E	Y	7
Service Oriented Architectures	INM381	15	E	Y	7
Computational Cognitive Systems	INM703	15	E	Y	7
Agents and Multi-Agent Systems	INM704	15	E	Y	7
Advanced Games Technology	INM710	15	E	Y	7
Natural Language Processing	INM434	15	E	Y	7
Web Development	INM428	15	E	Y	7
Principles of Artificial Intelligence	INM466	15	E	Y	7
Information Retrieval	INM305	15	E	Y	7

### **TO WHAT KIND OF CAREER MIGHT I GO ON?**

When you graduate with the MSci (Hons) in Computer Science with Cyber Security you would be expected to progress directly into either advanced technical roles or research in the domain of computing and information security. These roles can be in a broad range of areas, including all forms of software or hardware development, design and analysis of security algorithms data structures and systems, data analysis and research into computational methods in diverse areas, such as industrial applications, media, vision, sound, security, or health. Graduates starting a new business can benefit from

City's London City Incubator and City's links to Tech City, providing support for start-up businesses

If you would like more information on the Careers support available at City, please go to: <http://www.city.ac.uk/careers/for-students-and-recent-graduates>.

#### **WHAT STUDY ABROAD OPTIONS ARE AVAILABLE?**

There are no study abroad options for the programme.

#### **WHAT PLACEMENT OPPORTUNITIES ARE AVAILABLE?**

You will have the opportunity to undertake a one-year placement during your programme. You will be given the opportunity to secure a role in a diverse range of companies from multinational organisations to small and medium sized (SMEs) including dynamic startup ventures both in the UK and internationally. The broad spectrum of roles available will enable you to focus on your interests whilst being exposed to new experiences and challenges.

The one year placement can be undertaken following successful completion of Programme Stage 2 or Programme Stage 3 and will be required to last for a minimum of 9 months.

The following criteria apply to placements:

In order to join a placement route, students must successfully complete the preceding academic year.

Your placement should be approved by the Corporate Relations & Employability Unit (CREU).

You will need to source and apply for any placement opportunities independently however support and guidance will be provided throughout the application process by the CREU.

The placement year will be worth 120 credits and weighted at 10% of your final degree grade. Your placement grade will be based on the grades achieved on successful completion of IN3053 Professional Placement & Career Development module.

#### **WILL I GET ANY PROFESSIONAL RECOGNITION?**

**Accrediting Body:** British Computer Society

##### **Nature of Accreditation**

In order to gain accreditation you must successfully complete the 480 credits of the MSci programme, including passing at the first attempt a practical problem solving project. In particular, leaving the programme after 3 year whilst earning an honours degree will not gain accreditation.

Partial CEng accreditation

Certificate

Diploma

Professional Graduate Diploma

PGD Project

## **HOW DO I ENTER THE PROGRAMME?**

The Foundation Year is designed as an entry route for students who were unable to obtain the required A Level grades to access the corresponding BSc programme directly.

Our standard offer for MSci Computer Science with Cyber Security (with Integrated Foundation Year) is CCC at A-Level.

In addition, GCSE English Language grade 4 and GCSE Mathematics grade 5 is required.

Each application is treated on its own merit. This is to allow us to weight in work experience, personal statements, and other factors, as and when appropriate.

### **Scholarships**

Details of scholarships available to new undergraduate students can be found on the University's website at

<http://www.city.ac.uk/study/why-study-at-city/fees-and-finance/scholarships>

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