

## Computer Security Masters/MSc

### Masters/MSc postgraduate degree course in Computer Security:

This programme covers the theory and practice of designing and building secure systems and gives you a firm grounding in cryptography, network security and secure programming, with optional refresher modules in topics such as operating systems, safety-critical systems, distributed systems and databases. Graduates of this degree gain the knowledge to become leaders in the field of computer security and to shape the technologies that will be developed in the future.

University of Birmingham School of Computer Science has been officially established as an 'Academic Centre of Excellence in Cyber Security Research' (ACE-CSR) by the UK government.

This accolade is a testament to the first rate research and work that is undergoing here at the School of Computer Science. Furthermore, it builds upon and enhances the number one spot claimed by University of Birmingham in The Guardian University Guide 2014 for computer science.

For more information, including entry requirements, course details and module information, please visit [www.cs.bham.ac.uk/admissions/postgraduate-taught/degree\\_info/msc-csec/](http://www.cs.bham.ac.uk/admissions/postgraduate-taught/degree_info/msc-csec/) ([http://www.cs.bham.ac.uk/admissions/postgraduate-taught/degree\\_info/msc-csec/](http://www.cs.bham.ac.uk/admissions/postgraduate-taught/degree_info/msc-csec/))

**[Study here and find out why the University of Birmingham was awarded The Times and The Sunday Times University of the Year 2013-14](http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx)** (<http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx>)

#### Course fact file

**Type of Course:** Taught

**Study Options:** Full time

**Duration:** 1 year full-time

**Start date:** September/October

#### Related courses

[Advanced Computer Science Masters/MSc](/postgraduate/courses/taught/computer-science/advanced-computer-science.aspx) (</postgraduate/courses/taught/computer-science/advanced-computer-science.aspx>)

[Computer Science Masters/MSc](/postgraduate/courses/taught/computer-science/computer-science.aspx) (</postgraduate/courses/taught/computer-science/computer-science.aspx>)

[Robotics Masters/MSc](/postgraduate/courses/taught/computer-science/robotics.aspx) (</postgraduate/courses/taught/computer-science/robotics.aspx>)

[Human Computer Interaction Masters/MSc](/postgraduate/courses/taught/computer-science/human-computer-interaction.aspx) (</postgraduate/courses/taught/computer-science/human-computer-interaction.aspx>)

[Multidisciplinary Optimisation Masters/MSc](/postgraduate/courses/taught/computer-science/computer-multidisciplinary-optimisation.aspx) (</postgraduate/courses/taught/computer-science/computer-multidisciplinary-optimisation.aspx>)

#### Contact

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[School of Computer Science](/schools/computer-science/index.aspx) (</schools/computer-science/index.aspx>)

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#### Details



The module that has been the greatest use to me was the encryption module.

**Robert Savage**

MSc Computer Security, 2007



[\(/university/colleges/eps/postgraduate/student-profiles/robert-savage.aspx\)](/university/colleges/eps/postgraduate/student-profiles/robert-savage.aspx)

Computer security is about designing systems that resist attack. As computers become ever more prevalent and ever more connected with each other, the opportunities for attackers become even greater, and the need to resist them becomes more urgent. Computing infrastructure is now vital for communication, government, commerce, and control of our physical environment, and is a potential target of terrorist and criminal attacks. Graduates who understand the computer security technologies that underpin products and practices to secure it will be in great demand.

This is a one-year full-time degree programme for graduates in a computing-related discipline. It covers the theory and practice of designing and building secure systems and gives you a firm grounding in cryptography, network security and secure programming, with optional refresher modules in topics such as operating systems, safety-critical systems, distributed systems and databases.

The programme also gives you practical experience with technologies and toolkits for building internet-based software. All students undertake a large, personally supervised project in the final months of the course.

Our curriculum has been developed with the involvement of key individuals in the computing security industry. As well as advising us on the skills they seek when recruiting graduates, they also contribute directly to the MSc programme through guest lectures and project supervision. In recent years, we have had guest lecturers from Microsoft, Vodafone, Siemens, IBM and Hewlett Packard.

#### Related links

More about this programme: [www.cs.bham.ac.uk/admissions/postgraduate-taught/degree\\_info/msc-csec](http://www.cs.bham.ac.uk/admissions/postgraduate-taught/degree_info/msc-csec) ([http://www.cs.bham.ac.uk/admissions/postgraduate-taught/degree\\_info/msc-csec](http://www.cs.bham.ac.uk/admissions/postgraduate-taught/degree_info/msc-csec))

School of Computer Science website: [www.cs.bham.ac.uk](http://www.cs.bham.ac.uk) (<http://www.cs.bham.ac.uk>)

## Fees and funding

### Tuition fees

Tuition fees for 2015/2016 are as follows:

- £6,840 for **home/EU students**
- £17,960 for **international students**

### Part-time programmes

Most part-time programmes run for two years and their fees are one half of the standard full-time programme fees. A small number of part-time programmes run for three years and in these cases the annual fees are one third of the total full-time cost. Contact us for further information.

UK student visa regulations mean that students classed as overseas for fees purposes may normally only register on a full-time basis.

### Further funding information

**Standard fees** ([/postgraduate/pgt-fees/fees.aspx](#)) apply

Learn more about **fees and funding** ([/postgraduate/pgt-fees/fees.aspx](#))

### Scholarships and studentships

For information about scholarships for students on our postgraduate taught programmes visit [www.cs.bham.ac.uk/admissions/postgraduate-taught/scholarships.php](http://www.cs.bham.ac.uk/admissions/postgraduate-taught/scholarships.php) (<http://www.cs.bham.ac.uk/admissions/postgraduate-taught/scholarships.php>). International students can often gain funding through overseas research scholarships, Commonwealth scholarships or their home government.

For further information contact the School directly or email [financialsupport@bham.ac.uk](mailto:financialsupport@bham.ac.uk) (<mailto:financialsupport@bham.ac.uk>).

## Entry requirements

The minimum entry requirement is an upper second-class degree or overseas equivalent in Computer Science or a closely related discipline, including object-oriented programming and data structures and algorithms.

Learn more about **entry requirements** (<http://www.birmingham.ac.uk/students/pg/requirements>)

### International students

We accept a range of qualifications from different countries – learn more about **international entry requirements** (<http://www.birmingham.ac.uk/students/pg/requirements/international>)

**Standard English language requirements** ([/postgraduate/requirements-pgt/international/index.aspx](#)) apply

## How to apply

When clicking on the Apply Now button you will be directed to an application specifically designed for the programme you wish to apply for where you will create an account with the University application system and submit your application and supporting documents online. Further information regarding how to apply online can be found on the **How to apply pages** (<http://www.birmingham.ac.uk/students/courses/postgraduate/apply-pg/index.aspx>)

**Apply now** (<https://pga.bham.ac.uk/lpages/EPSo49.htm>)

## Related news and events

**Birmingham computer scientists take part in national cyber security challenge** ([/news/latest/2013/01/24-Jan-13-Birmingham-computer-scientists-take-part-in-national-cyber-security-challenge.aspx](#))

**Social media: why the case for teaching digital literacy is so compelling** ([/news/thebirminghambrief/items/2013/08/14-08-13Social-media-why-the-case-for-teaching-digital-literacy-is-so-compelling.aspx](#))

## Learning and teaching

The programme will provide you with practical experience with technologies and toolkits for building internet-based software. All students undertake a large, personally supervised project in the final months of the course.

## Employability

Graduates of this degree gain the knowledge to become leaders in the field of computer security and to shape the technologies that will be developed in the future. They are equipped to work on secure software development within the software and IT industry, or to become computer security consultants. They may also choose to move on to PhD research.

## University Careers Network

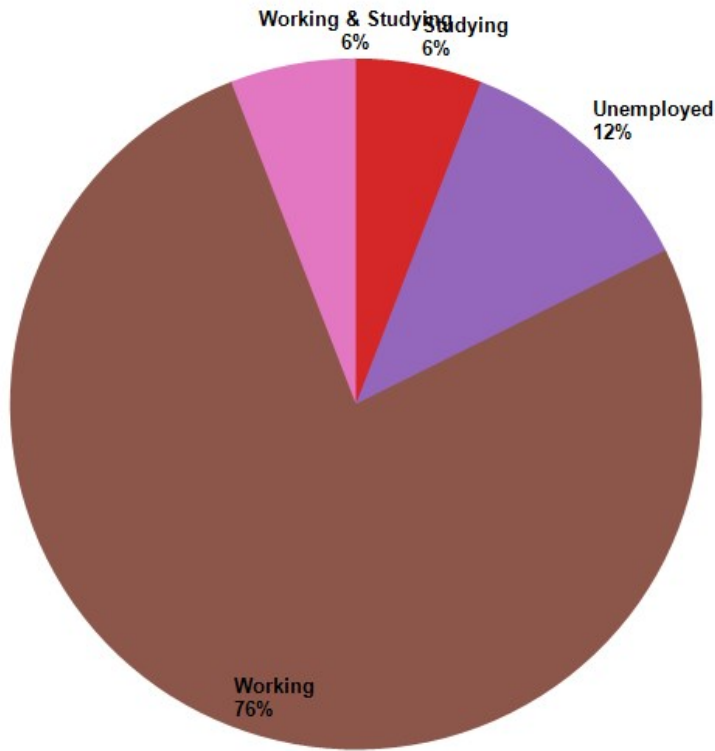
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you achieve your goal.

Our unique careers guidance service is tailored to your academic subject area, offering a specialised team (in each of the five academic colleges) who can give you expert advice. Our team source exclusive work experience opportunities to help you stand out amongst the competition, with mentoring, global internships and placements available to you. Once you have a career in your sights, one-to-one support with CVs and job applications will help give you the edge.

If you make the most of the **wide range of services** (<https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx>) you will be able to develop your career from the moment you arrive.

## Destinations of Leavers from Higher Education (DLHE) 2011/12 (postgraduate taught graduates)

The DLHE survey is conducted 6 months after graduation.



### Examples of employers

- Credit Suisse
- Innovise
- Atos
- BAe Systems
- Bank of America
- J.P. Morgan
- Logica
- Tessella
- Morgan Stanley
- QinetiQ

### Examples of occupations

- Software Engineer
- Software Developer
- Technical Analyst
- Applications Developer
- Cyber Security Consultant
- Design Engineer
- Junior Programmer
- Software Consultant
- Technical Consultant
- Technology Analyst

### Further study - examples of courses

- MSc Computer Security

- MSc International Business
- MEng Aeronautics & Astronautics
- MSc Computer Science
- MSc Artificial Intelligence
- MSc Operational Research
- MSc Imbedded Systems
- PhD - Physical Sciences in the Biomedical Imaging
- PhD - Computer Science

Visit the **Careers section of the University website** (<https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx>) for further information.