MSc Advanced Computer Science

Noam Zeilberger
(programme director 2018–2019)

School of Computer Science
University of Birmingham
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(A brief announcement)

Slight change for the Research Talks session Friday 14:00-16:00...

The original room is too small, so we are having *parallel sessions:*

- **Surnames A–L** will be in **Gisbert Kapp LT1 (E203)**
- **Surnames M–Z** will be in **Aston Webb WG5**

What is MSc Advanced Computer Science?

A one-year course for students **with an undergrad degree in CS**, providing a large amount of freedom (no compulsory modules).

Includes a supervised **project** component allowing you to deepen your knowledge of selected areas of computing.

The overall aim of the programme is to provide "a solid foundation for all graduates to pursue a career in the software industry".

Additionally, the programme may prepare students for a career in R&D or for higher studies, especially (but not exclusively) through the **research-oriented track**.

Structure of the MSc ACS

180 credits total = 120 credits courses + 60 credits project

To obtain the MSc, you must:

- achieve mark ≥ 40 on at least 120 credits;
- gain at least 80 credits at Level M (mark ≥ 50);
- have a weighted mean mark ≥ 50 in all 120 credits;
- successfully complete the project.

MSc ACS modules (2018–2019)

Term 1 (Autumn)

- Compilers & Languages, Cryptography, Evaluation Methods and Statistics, Intelligent Robotics [20 credit], Introduction to Human Computer Interaction, Advanced Human Computer Interaction, Introduction to Neural Computation, Machine Learning, Networks [20 credit], Operating Systems [20 credit], Secure Programming

Term 2 (Spring)

- Advanced Cryptography, Nature Inspired Search and Optimisation, Advanced Aspects of Nature Inspired Search and Optimisation [20 credit], Advanced Topics in Functional Programming, Computer-Aided Verification, Distributed and Parallel Computing, Intelligent Data Analysis, Mobile & Ubiquitous Computing [20 credit], Network Security, Principles of Programming Languages, Research Topics in HCI, Security Research Seminar

Term 3 (Summer)

- Project (06-18159 or 06-02637)

Additional modules: Research Skills (T1), Individual Study 2 (T1/T2), Second semester mini-project (T2)

Modules classified (roughly) by area (w/clickable links!)

Human Computer Interaction (HCI)

- Evaluation Methods and Statistics, Intro to HCI, Advanced HCI, Mobile & Ubiquious Computing, Research topics in HCI

Machine Learning, Natural Computation, and Robotics

- Intro to Neural Computation, Machine Learning, Intelligent Data Analysis, Nature Inspired Search and Optimisation, Intelligent Robotics

Systems and Networks

- Operating Systems, Distributed and Parallel Computing, Networks, Network Security

Security and Privacy

- Secure Programming, Network Security, Mobile & Ubiquious Computing, Cryptography, Advanced Cryptography, Security Research Seminar

Programming Languages and Verification

- Compilers & Languages, Principles of Programming Languages, Advanced Topics in Functional Programming, Computer-Aided Verification

Example study programme 1

Autumn 2018: Evaluation Methods and Statistics (06-23856), Cryptography (06-20008), Secure Programming (06-20010), Compilers & Languages (06-15255), Operating Systems (06-26952)

Spring 2019: Intelligent Data Analysis (06-20233), Nature Inspired Search and Optimisation (06-28211), Principles of Programming Languages (06-26954), Distributed and Parallel Computing (06-26944), Mobile & Ubiquitous Computing (06-25689)

Summer 2019: Project - CompSci MSc (06-18159)

Example study programme 2

Autumn 2018: Research Skills (06-06991), Cryptography (06-20008), Machine Learning (06-20236), Introduction to Neural Computation (06-12412), Secure Programming (06-20010), Individual Study 2 (06-19009)

Spring 2019: Second semester mini-project (06-07954), Advanced Topics in Functional Programming (06-26942), Advanced Cryptography (06-30017), Security Research Seminar (06-27822)

Summer 2019: Project - Advanced MSc (06-02637)

Module Registration

When choosing modules, *look at the timetables and avoid clashes.*

You register for modules online. Until you register...

- you will not be entered into the module roster, and
- you will not be on Canvas for that module.

So, please register as soon as possible! (E.g., today or tomorrow.) Latest: by the **end of the first week**. (Afterwards, any changes have to be approved by the director of graduate studies.)

Try to attend the first few lectures of a module to get a feel for it. (Difficult to swap into a module you have not been attending.)

Advising/support

I am your first point of contact for all queries about the programme (email zeilbern@cs.bham.ac.uk, or come to office hours)

You also have a **personal tutor**, whom you are welcome to see at any time. (Dr. Mark Lee will assign your tutor.)

If you have any issues that interfere with studies (illness, depression, family emergencies etc.), see the **Welfare team.**

Useful links

- Student handbook: `https://www.cs.bham.ac.uk/internal/taught-students`
- MSc ACS modules: `http://www.cs.bham.ac.uk/internal/programmes/2018/0014/years/1`
- Timetables: `https://www.cs.bham.ac.uk/internal/taught-students/timetables/`
- Welfare team: `https://www.cs.bham.ac.uk/internal/taught-students/welfare/`
- This talk: `http://noamz.org/talks/mscacs.pdf`