



Postgraduate opportunities

EPCC's MSc in High Performance Computing has always been a leader in its field. Coupling it to Data Science responds to the huge increase in demand for graduates with both HPC and data skills from both science and business.

Professor Mark Parsons
Executive Director, EPCC

MSc in High Performance Computing MSc in High Performance Computing with Data Science

These two Masters of Science (MSc) programmes are taught by EPCC at the University of Edinburgh. EPCC is the UK's leading supercomputing centre and operates ARCHER, a 72,000-processor Cray XC30 which is the UK's national supercomputer facility.

Leading the way in the age of information

High Performance Computing (HPC) is widely used in science, engineering and industry. Many branches of modern science, such as climate research and nanotechnology, rely on complex computer models or data-intensive analysis that can only be run on parallel supercomputers. The same parallel programming techniques are also essential for software developers to take full advantage of modern multicore processors, graphics processors and computing clusters.

HPC is also a key driver for the emerging field of data science. The tools and techniques of HPC and parallel programming are indispensable for manipulating, processing and analysing the massive and complex data sets which are now generated across many areas of science and commerce.

Studying the MSc in High Performance Computing

The MSc in HPC trains the next generation of specialists in parallel programming. Learn leading-edge HPC technologies and skills to exploit the full potential of the world's largest supercomputers and multicore processors.

Studying the MSc in High Performance Computing with Data Science

The MSc in HPC with Data Science equips you with multidisciplinary skills and knowledge in both HPC and data science. Unlock the power of the HPC technologies that underpins the management and analysis of big data.

Our MSc programmes have a strong practical focus and provides access to leading-edge HPC platforms and technologies. Both consist of 12 taught courses, followed by a dissertation project.

Courses include:

- Data Analytics with High Performance Computing
- Fundamentals of Data Management
- HPC Architectures
- HPC Ecosystem
- Message-Passing Programming
- Threaded Programming
- Parallel Numerical Algorithms
- Parallel Programming Languages
- Performance Programming
- Advanced Parallel Programming
- Parallel Design Patterns
- Software Development
- Programming Skills
- Project Preparation.

Selected courses from other MSc programmes in Computer Science, Informatics and Mathematics at the University are also available.

After completing the taught courses students work on a three-month individual project. These may be research or work-based with opportunities for placements in the local companies.

Industry-based dissertation projects

Through our strong links with industry, we also offer our students the opportunity to undertake their dissertation project with a wide range of local companies. To find out more please visit:

www.msc-projects.ph.ed.ac.uk

Facilities

EPCC is one of the leading supercomputing centres in Europe, hosting and managing an extensive collection of HPC systems including ARCHER, the UK's National High Performance Supercomputer. Students will have access to leading-edge HPC platforms and technologies such as ARCHER for their research projects. Other facilities include multicore, Xeon Phi and GPU-based machines and the University's central compute clusters.

Entry requirements

Good honours degree (UK 2:1 honours degree, or its equivalent if outside the UK) or equivalent work experience.

No prior HPC knowledge is assumed but candidates must be competent programmers, for example in C, C++, Fortran, Java or Python.



English language requirements

IELTS Academic Module 6.5 (with at least 6.0 in each section).

TOEFL-IBT 92 (with at least 20 in each section)

More information about other qualifications we accept is online at www.ed.ac.uk/studying/international/english.

Course duration

Diploma: nine months, full-time from September

MSc: 12 months, full-time from September

MSc part-time: three years from September

Scholarships

A number of scholarships are available, including provisions for overseas students. Please visit www.epcc.ed.ac.uk/msc for details. For more scholarship information, please visit www.ed.ac.uk/student-funding.

Careers

The skills learnt are applicable both to academic computational science research and to a wide range of careers in science, engineering, industry and commercial software development.

How to apply

Apply online using the application link beside each programme in the online prospectus:

www.ed.ac.uk/studying/postgraduate/finder

Contact us

PGT Programme Administrator
School of Physics & Astronomy
The University of Edinburgh
James Clerk Maxwell Building
Mayfield Road
Edinburgh EH9 3JZ

T +44 (0)131 651 7067

E msc@epcc.ed.ac.uk

www.epcc.ed.ac.uk/msc

www.facebook.com/UoE.HPC

The University of Edinburgh is one of the world's top 20 universities.*

* QS World Rankings 2013