

ARCHER Training Courses

General Overview



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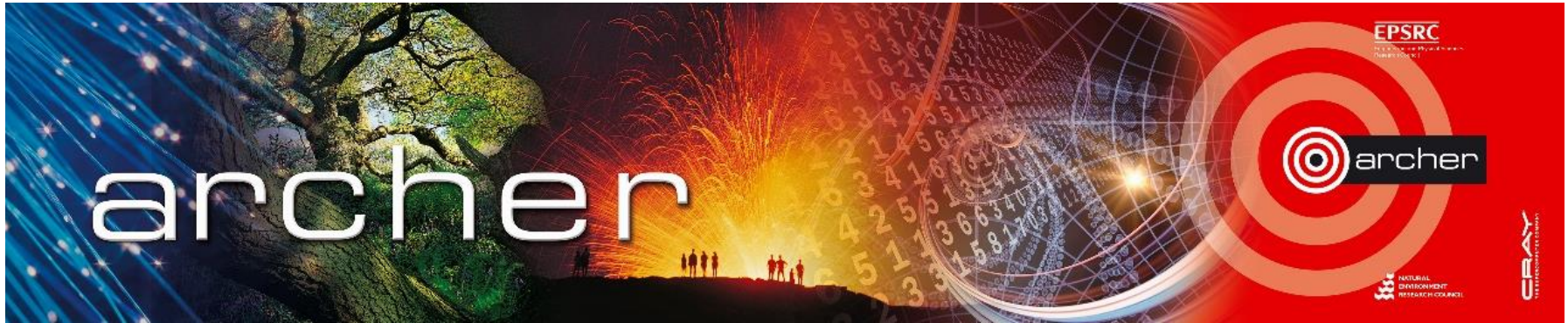


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- UK National Supercomputer Service, managed by EPSRC
 - housed, operated and supported by EPCC
 - hardware Supplied by Cray
- Training provided by the ARCHER Computational Science and Engineering (CSE) support team
 - 72 days per year at various locations round the UK
 - free to all academics

EPCC's Advanced Computing Facility



What is EPCC?

- UK national supercomputer centre
 - founded in 1990 (originally Edinburgh Parallel Computing Centre)
 - a self-funding Institute at The University of Edinburgh
 - running national parallel systems since Cray T3D in 1994
 - around 70 full-time staff
 - a range of academic research and commercial projects
 - one-year postgraduate masters in HPC www.epcc.ed.ac.uk/msc/
 - new online accredited courses www.epcc.ed.ac.uk/online-courses/
- Get in contact if you want to collaborate
 - many staff are named RAs on research grants
 - joint research proposals
 - European project consortia

Key ARCHER Resources

- Upcoming courses
 - <http://www.archer.ac.uk/training/>
- Material from past courses
 - http://www.archer.ac.uk/training/past_courses.php
- Virtual tutorials (online)
 - <http://www.archer.ac.uk/training/virtual/>
- Documentation
 - <http://www.archer.ac.uk/documentation/>

Who am I?

David Henty d.henty@epcc.ed.ac.uk

- In charge of training at EPCC
 - MSc
 - PRACE Advanced Training Centre
 - ARCHER training programme
 - commercial training
 - ...
- Also do HPC research
 - new parallel programming models, accelerators, performance, ...

Other Resources

- Please fill in the feedback form!
 - <http://www.archer.ac.uk/training/feedback/>
- General enquiries about ARCHER go to the helpdesk
 - support@archer.ac.uk
- EPCC runs one-year taught postgraduate masters courses
 - ***MSc in HPC*** and ***MSc in HPC with Data Science***
 - awarded by the University of Edinburgh since 2001
 - scholarships available
 - <http://www.epcc.ed.ac.uk/msc/>

MSc in HPC / HPC with Data Science



- taught by EPCC staff (plus options in Informatics, Maths, Physics, ...)
- 12 taught courses (8 months); research dissertation (4 months)

Online accredited courses

www.epcc.ed.ac.uk/online-courses

Online distance learning courses

epcc | 25TH ANNIVERSARY

COURSES | APPLYING | FEES & FINANCE | CAREER PROSPECTS

Online courses in Data Science and in High Performance Computing.
Enhance Your Career!

Practical Introduction to Data Science

Data Science is a rapidly emerging, interdisciplinary field bringing together ideas from computer science, mathematics, statistics, software engineering and beyond. This online course introduces the concepts of data science and allows students to gain the basic skills expected of a data scientist. [More](#)

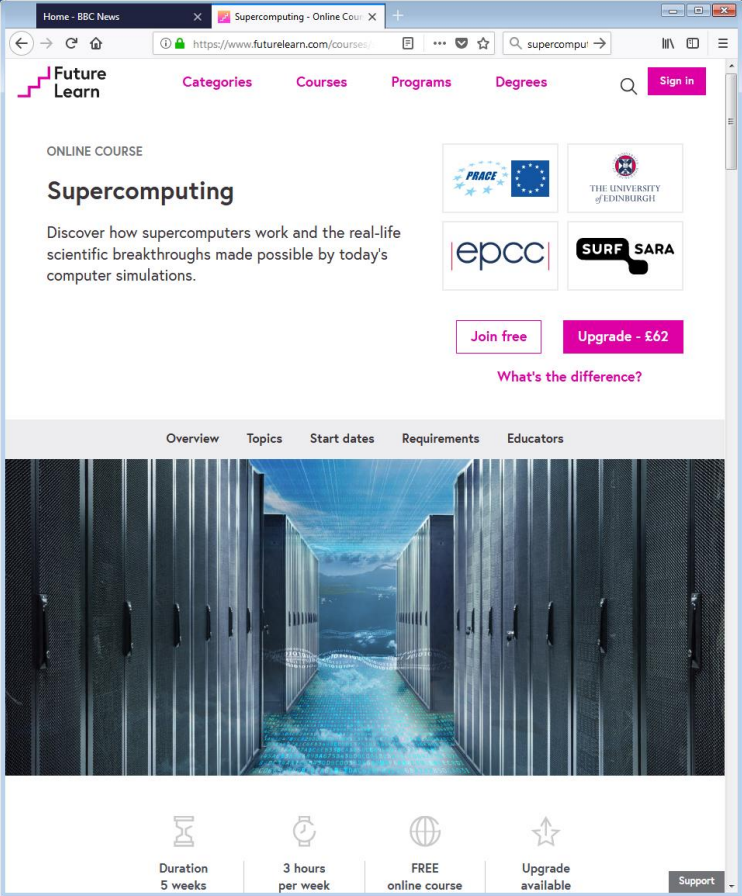
Practical Introduction to High Performance Computing

High Performance Computing (HPC) is a fundamental technology used in solving scientific and commercial problems. The course covers the concepts of HPC and allows students to explore them by running parallel programs on real HPC systems such as the UK national supercomputer ARCHER. [More](#)

- Run from January to June each year
 - entirely online: www.epcc.ed.ac.uk/online-courses/.
 - each course is 20 credits (c.f. a 180-credit MSc)

Supercomputing MOOC

- futurelearn.com/supercomputing
 - 5 weeks
 - free (with paid “upgrade” option)
 - conceptual
 - no computer programming required
- runs twice per year
 - typically thousands of “joiners”
 - several hundred active in final week
 - very collaborative
 - lots of support from fellow learners



The screenshot shows the Future Learn website for the 'Supercomputing' MOOC. The page features the Future Learn logo, navigation tabs for 'Categories', 'Courses', 'Programs', and 'Degrees', and a search bar. The main content area includes the course title 'Supercomputing', a description: 'Discover how supercomputers work and the real-life scientific breakthroughs made possible by today's computer simulations.', and logos for PRACE, THE UNIVERSITY OF EDINBURGH, epcc, and SURF SARA. There are two buttons: 'Join free' and 'Upgrade - £62'. Below the buttons is a link 'What's the difference?'. A navigation bar below the main content includes 'Overview', 'Topics', 'Start dates', 'Requirements', and 'Educators'. The main image is a digital illustration of a server room with a glowing blue path leading through the racks. At the bottom, there are four icons with text: 'Duration 5 weeks', '3 hours per week', 'FREE online course', and 'Upgrade available'. A 'Support' button is in the bottom right corner.

Access to ARCHER (during course)

- Guest accounts for duration of course
 - should only be used in the classroom
- Accounts will be closed immediately after the course
 - all files etc will be deleted
- Take copies of all your work before course ends!
- Course materials (slides, exercises etc) available from course web page
 - archived on ARCHER web pages for future reference

Access to ARCHER (longer term)

- Various ways to apply for time on ARCHER
 - see <http://www.archer.ac.uk/access/>
- All require justification of resources
 - Instant Access has the lowest barrier to entry
 - designed for exploratory work, e.g. in advance of a full application
- Or take the “ARCHER Driving Test”
 - www.archer.ac.uk/training/course-material/online/driving_test.php
 - successful completion allows you to apply for an account for 12 months with an allocation of around 80,000 core-hours
 - backed up by online training materials
 - www.archer.ac.uk/training/course-material/online/

Subscribing to training emails

- Weekly service updates sent to registered ARCHER users
 - many contain information relevant to training
- You can subscribe to receive only training-related emails
 - even if you don't have an ARCHER account
- Visit:
`https://www.jiscmail.ed.ac.uk/cgi-bin/webadmin?SUBED1=ARCHER-TRAINING&A=1`

Funding calls

- Embedded CSE support
 - Through a series of regular calls, Embedded CSE (eCSE) support provides funding to the ARCHER user community to develop software in a sustainable manner for running on ARCHER. Funding will enable the employment of a researcher or code developer to work specifically on the relevant software to enable new features or improve the performance of the code
 - Apply for funding for development effort
 - Happen roughly every 4 months
- See <https://www.archer.ac.uk/community/eCSE/calls.php> for details



PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

EPCC's PRACE Advanced Training Centre





Currently 25 members

- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Israel
- Italy
- Netherlands
- Norway
- Poland
- Portugal
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- UK

UK represented by EPCC
(on behalf of EPSRC)



Six PRACE Advanced Training Centres (PATCs)

Hubs for world-class HPC training for researchers in Europe

www.training.prace-ri.eu

- Barcelona Supercomputing Center (Spain)
- CINECA - Consorzio Interuniversitario (Italy)
- CSC - IT Center for Science Ltd (Finland)
- EPCC at the University of Edinburgh (UK)
- Gauss Centre for Supercomputing (Germany)
- Maison de la Simulation (France)

PRACE support

- PRACE also funds catering and other expenses for PATC courses
- Upcoming courses (at EPCC and throughout Europe)
 - www.archer.ac.uk/training/
 - www.training.prace-ri.eu
- Please fill in the course feedback form!
 - see www.archer.ac.uk/training/feedback/
 - opens on last day of course