

HPC Training at EPCC (including ARCHER2)

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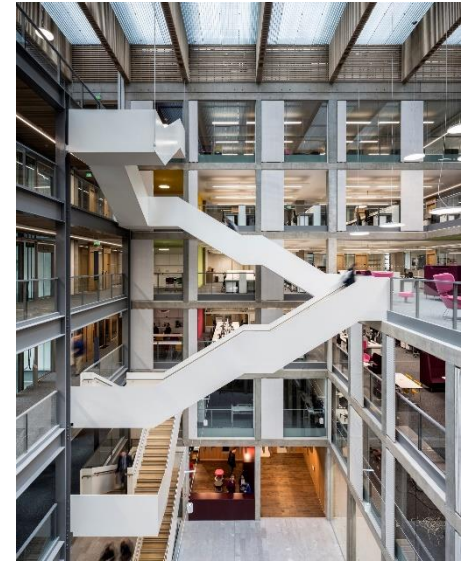
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EPCC

- Founded in 1990 as Edinburgh Parallel Computing Centre
 - A Centre in The University of Edinburgh, Scotland, UK
 - self-funded with over 100 full-time staff
 - relocated to the Bayes Centre in 2018

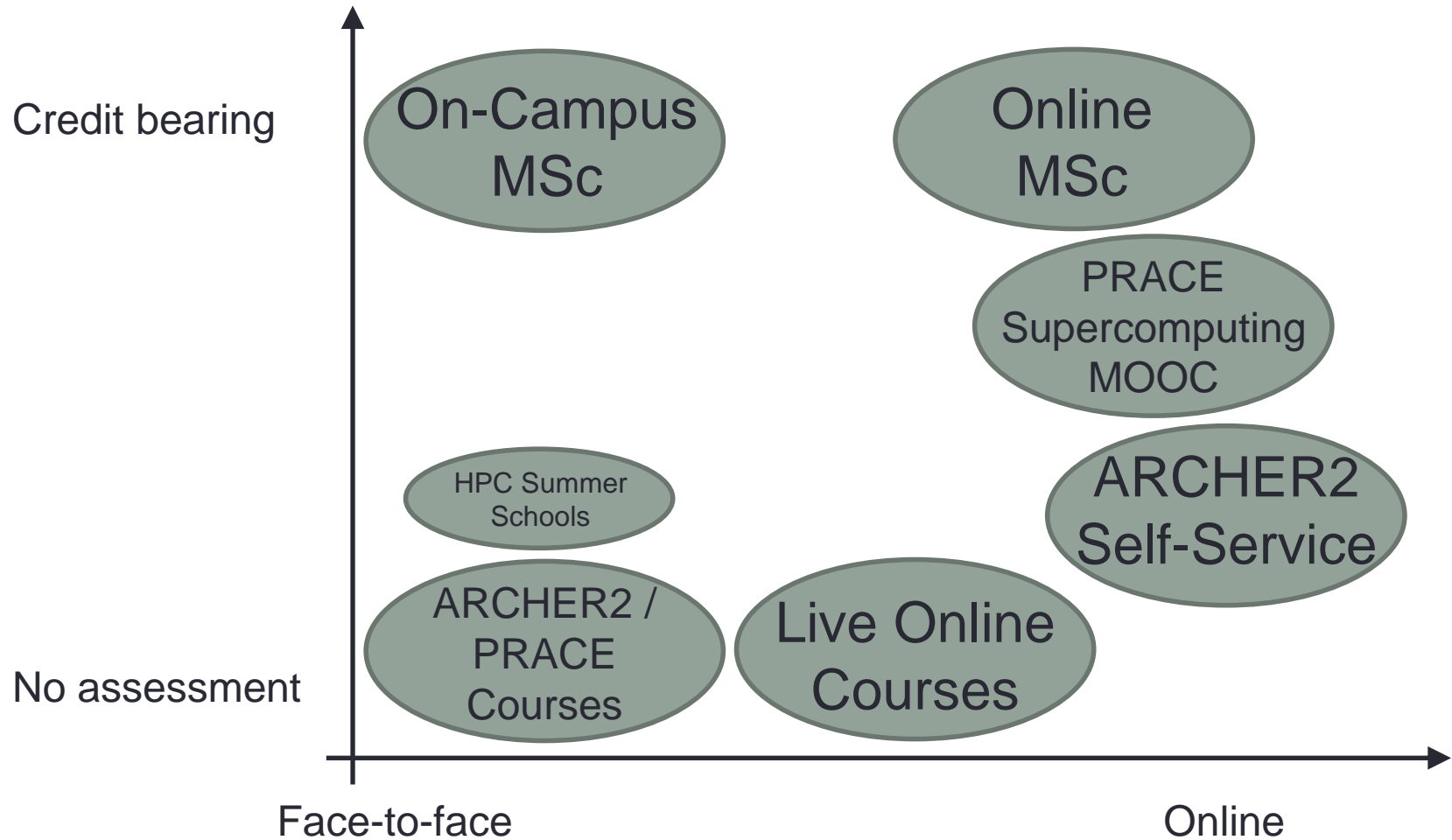


Activities

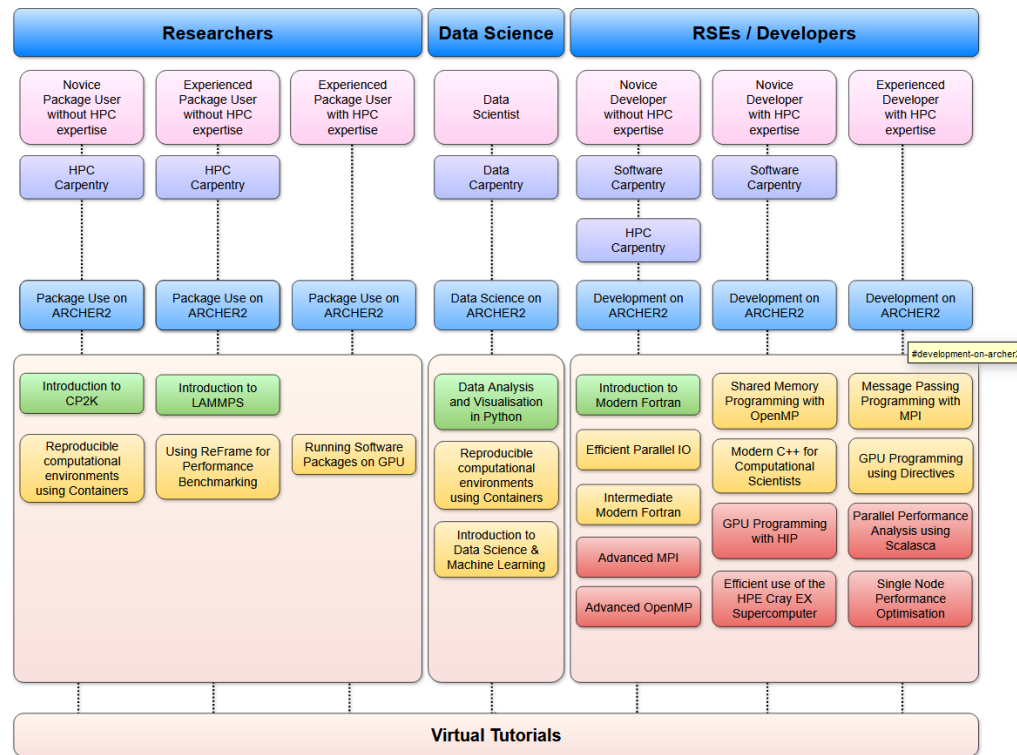
- Projects in HPC, Data Science & Software Development
 - supporting UK academic research
 - industrial partners
 - European funding
- National Supercomputing services
 - ARCHER2 and Cirrus
- Education and Training
 - Postgraduate Masters Programmes in HPC
 - HPC training courses for national services



EPCC Ecosystem (non-COVID)



<https://www.archer2.ac.uk/training/courses/>

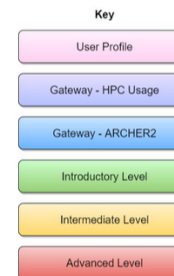


Some example scenarios and suggested training paths.

Outline Course Descriptions

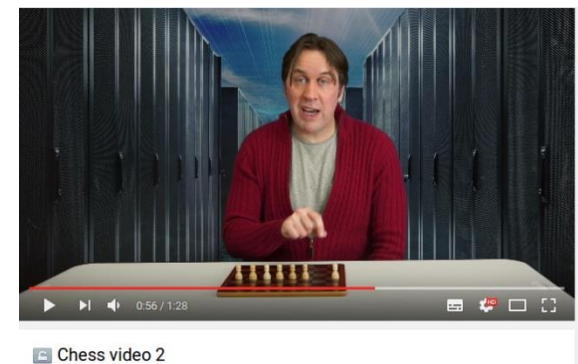
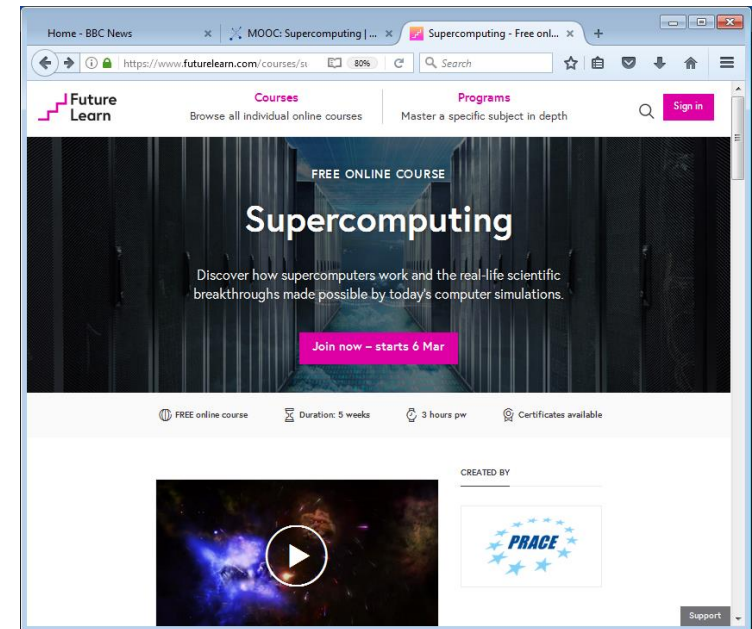
Introductory (level 1) courses

- Data Carpentry
- HPC Carpentry
- Software Carpentry
- Package Use on ARCHER2
- Introduction to CP2K
- Introduction to LAMMPS



futurelearn.com/courses/supercomputing/

- Free introductory course
 - videos, articles, quizzes, discussion boards etc.
 - certificate upon completion of multiple-choice test (+fee!)
 - largely conceptual
 - tutors contribute to discussions
 - “ask an expert” sessions
- Five runs from 2017 - 2019
 - typically around 3000 “joiners”
 - typically around 300 “completers”
- Still running in “unfacilitated” mode



ARCHER2 Self-Service Courses

The screenshot shows a web browser window with the following elements:

- Browser Tab:** Introduction to the Message Pa X
- Address Bar:** https://epcced.github.io/MPI_Intro_Self_Service/Part1_Message_Passing_Overview_and_Introductio
- Bookmarks:** Getting Started, EdUni, EPCC, ARCHER2, MSc, ASiMoV, RookieHPC, ISO9001, evohome, Boost install Q1576036..., IHPCSS21, Cite it! Cite it!, Other Bookmarks
- Page Header:** Introduction to MPI | epcc |
- Search:** Search docs
- Navigation Sidebar:**
 - Overview
 - Introduction to the Message Passing Programming Model and MPI
 - Learning Objectives
 - Message Passing Programming Model
 - Traffic Modelling
 - Introduction to MPI Programming
 - Point-to-Point Communication
 - Intermediate MPI Programming
 - Case Study and Performance Metrics
- Main Content:**
 - ## Message Passing Programming Model
 - This section discusses the message passing programming model and introduces various communication patterns at conceptual level (see [slides](#)).
 - ### Message-Passing Programming with MPI
 - Message-Passing Concepts
 - ### Distributed-Memory Architectures

Conclusions

- ARCHER2 training available face-to-face and online (synchronous delivery or asynchronous self-service)
- Wide range of material covering a diverse user community
- We see high demand for introductory / fundamental courses
 - Carpentries
 - programming
 - data science
- as well as for emerging areas
 - GPUs