MPhil in Scientific Computing

Course Directors: Dr N. Nikiforakis (email: nn10005@cam.ac.uk)
Dr J. A. Elliott (email: jae1001@cam.ac.uk)

Contact: admin@csc.cam.ac.uk

Course website: http://www.csc.cam.ac.uk/academic/MPhil%20SciComp

All lectures will take place in the Rayleigh Seminar Room in the Maxwell Building, except on 17th/18th October, when they will be in the Ryle Seminar Room in the Rutherford Building.

PROFESSOR E. ARTACHO
Foundation Course in Quantum Mechanics and Solid State Physics
6 lectures (2 hours each – 6 lectures & 6 practicals)
TuTh 9-11, starting 6th October for 6 lectures.

PROFESSOR E. ARTACHO
Electronic Structure (Theory of Condensed Matter)
10 hours lectures
6 2-hour practicals
Lectures: TuTh 9-10 starting 27th October
Practicals, MWF 9-11 starting 21st November – until Friday 2nd December.

DR P.M. BLAKELY
GPUs for Scientific Computing
12 lectures (12 hours total of lectures & practicals)
MWF 2-4, starting 18th November.

DR P.M. BLAKELY
Scientific Programming in C++
12 lectures (2 hours each – 12 lectures & 12 practicals)
MWF 9-11, starting 7th October.

DR P.M. BLAKELY
Introduction to Linux
5 lectures
MWF 2-3, starting 7th October.
DR A. FAUL
NA Fundamentals, Non-linear Systems & Interpolation
16 lectures
TuTh, 11-12, starting 6th October.

DR A. FAUL
Numerical Integration and ODEs.
16 lectures
W 11-12, F 12-1, starting 7th October.

DR A. FAUL
Linear Systems.
16 lectures
TuTh, 12-1, starting 6th October

DR A. FAUL
Numerical Differentiation & PDEs
16 lectures
M 11-12, W 12-1, starting 10th October

DR L. MICHAEL
Numerical Solution of Hyperbolic Partial Differential Equations
6 lectures (2 hours each)
MWF, 9-11, starting 14th November.

DR M. RUTTER
Computational Hardware
7 lectures
MWF 3-4, starting 7th October.

N. MACLAREN
Software Design
6 lectures
TuTh 3-4, starting 11th October
DR M. RUTTER
Message Passing Interface (MPI)
9 lectures and 6 practicals.
TuTh 2-4, F 3-4, starting 28th October (except for Tuesday 1st November, 3-5 instead).

N. MACLAREN
OpenMP
6 lectures (2 hours each – 6 lectures & 6 practicals)
MW 3-5, starting 24th October

DR D. HUGGINS, DR J. ELLIOT
Atomistic Modelling of Materials
12 lectures plus 6 hours practicals (practicals unscheduled as yet)
MWF 2-3, starting 21st October

DR C. DORAN
Geometric Algebra
8 lectures
TuTh 2-3, starting 7th October.

DR K. BENKRID
Programming for power-efficient computing
8 lectures
TuTh 10-11, starting 3rd November

DR A. FAUL, DR A. O’NEILL, DR L. JAMIESON, G. PILIKOS
Machine Learning
16 lectures
M 12-1, F 11-12, starting 7th October.
Plus: Machine Learning Lunch every Friday 1pm, from 14th October.

DR N. NIKIFORAKIS
Mesh Generation, Mesh Adaptation and Mesh Movement
12 lectures - Lent Term – not scheduled.