Reduced Fees (before June 21, 2010)

Users \ Modules	One	Two	Three
Undergraduate *	€ 150	€ 250	€ 300
Academic	€ 300	€ 500	€ 600
Private	€ 500	€ 800	€ 1000

Regular Fees (after June 21, 2010)

Users \ Modules	One	Two	Three
Undergraduate *	€ 200	€ 350	€ 400
Academic	€ 400	€ 700	€ 800
Private	€ 700	€ 1200	€ 1400

*Undergraduate Students are requested to take their own notebook to attend the school. For more details, please visit the school web site.

Tutors & Facilities

Lecturers will comprise experts from MathWorks, University professors and experts from the Consorzio COMETA which offers the Grid Facility the participants will use for running most the parallel code. The course will be in English.

Organizing Commitee

Chair: A. Messina (DSFA - UNIPA)

R. Barbera (COMETA & DFA - UNICT), A. Bono (DI.BI.ME.L.-UNIPA), A. Consiglio (DSSM - UNIPA), P. P. Corso (COMETA & DSFA - UNIPA), M. Midiri (DI.BI.ME.L. - UNIPA), R. Migliore (CNISM), A. Napoli (DSFA - UNIPA), E. Napoli (DIIAA - UNIPA).

Location:

Palermo - about 300 seats

Catania - about 100 seats

This event is sponsored by

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UNIVERSITÀ DI PALERMO
dsfa
dipartimento di scienze fisiche ed astronomiche

Banca Nuova
Gruppo Banca Popolare di Vicenza

Contacts

Fore more information about the school, please visit the web site:

http://isscm.fisica.unipa.it

or send an e-mail to:

isscm@fisica.unipa.it

International School of Scientific Computation and MATLAB (ISSCM)

July 12 - 30, 2010
Palermo - Catania

MODULE 1 - July 12-16, 2010
Introduction to Scientific Computation and MATLAB

Day 1 – Introduction to MATLAB and Matrices
- Introduction to Computer Programming
- Introduction to MATLAB User Interface
- Introduction to MATLAB Data Types and Expressions
- Introduction to Scripts
- Numerical Methods for Matrices

Day 2 – I/O, Graphics, Data Fitting and Applications to Statistics
- Basics I/O Operations
- Introduction to Graphics with MATLAB
- Data Fitting and Interpolation with MATLAB
- Data analisys with MATLAB

Day 3 – Numerical Differentiation and Integration, Advanced Graphics and Applications to Image Processing
- Numerical Differentiation and Integration
- Advanced Concepts on Graphics with MATLAB
- Image Processing with MATLAB

Day 4 – MATLAB Programming, Numerical ODE and MonteCarlo Simulations
- Basics of MATLAB Programming
- Introduction to Code Debugging and Profiling
- Numerical Solution of Ordinary Differential Equations
- Case Study 1: MonteCarlo Simulation

Day 5 – 2D Heat Equation, MATLAB Compiler and Applications to Bioinformatics and Optimization
- Case Study 2: 2D Heat Equation
- Introduction to MATLAB Compiler
- Bioinformatics with MATLAB
- Optimization with MATLAB

MODULE 2 - July 19-23, 2010
Introduction to High Performance and Grid Computing

Day 1 – Basics of UNIX and C Programming
- Introduction to UNIX
- Basics of C Programming
- C Programming Laboratory

Day 2 – Basics of HPC
- Introduction to HPC
- Introduction to Parallel Computing
- Introduction to MPI
- MPI Laboratory

Day 3 – Message Passing Interface
- Advanced Concepts in MPI
- MPI Laboratory

Day 4 – Grid Computing
- Introduction to Grid Computing and gLite Middleware
- Grid Authentication/Authorization Mechanism
- Basic Job Submission and Data Management
- Advanced Job Submission and Job Monitoring
- Grid Computing Laboratory

Day 5 – Practical Case Studies
- Case Study 1: MonteCarlo Simulation
- Case Study 2: 2D Heat Equation
- Case Study 3: Optimization
- Case Study 4: Bioinformatics

MODULE 3 - July 26-30, 2010
High Performance and Grid Computing with MATLAB

Day 1 – Introduction to Parallel Computing Toolbox
- Integration of MATLAB Parallel Tools
- Introduction to MATLAB Pool
- Parfor Loops
- Parfor loops Laboratory

Day 2 – Task-Parallel Programming
- Task-Parallel Jobs
- Task-Parallel Programming Laboratory
- Variables and Data in the MATLAB Parallel Environment

Day 3 – Data-Parallel Programming
- Data-Parallel Programming in MATLAB
- Data-Parallel Programming Laboratory

Day 4 – Message Passing Programming with MATLAB
- Debugging and Profiling Parallel Code in MATLAB
- Message Passing Programming with MATLAB
- Message Passing Programming with MATLAB Laboratory
- Case Study 1: MonteCarlo Simulation

Day 5 – Practical Case Studies
- Case Study 2: 2D Heat Equation
- Case Study 3: Optimization
- Case Study 4: Image Processing
- Case Study 5: Bioinformatics