**PATC Course: HPC-based simulations, Engineering and Environment**

**Dates:** Tuesday, 3 February, 2015 - 09:00 to Thursday, 5 February, 2015 - 18:00

**Objectives:** The objective of this course is to give a panorama on the use of hpc-based computational mechanics in Engineering and Environment through the projects BSC are carrying on. This panorama includes the basics of what is behind the main tools: computational mechanics and parallelization.

**Learning outcomes:** The students who finish this course will be able to take active part in such projects both in academia or industry.

**For registration please follow the link:**

<https://events.prace-ri.eu/confRegistrationFormDisplay.py/display?confId=319>

**iPATC: HPC-based simulations for the Industrial Realm**

**Date:** Friday, 6 February, 2015 (All day)

**Outline:** The course is organized as a series of talks describing several industrial projects we are carrying on at the CASE department of BSC. All these projects have a common point: very complex simulations of physical systems lie at the core, requiring HPC-based software. The CASE department develops Alya, a multi-physics parallel simulation code capable of running on thousands of processors. Among the application fields are:

* Oil and Energy,
* Environment,
* Aerospace and
* Pharmaceutical Industry.

**For registration please follow the link:**

<https://events.prace-ri.eu/confRegistrationFormDisplay.py/display?confId=326>

**Industry Focused PATC: Petaflop System Administration; MareNostrum III**

**Dates:** Wednesday, 11 February, 2015 - 09:00 to Thursday, 12 February, 2015 - 13:00

**Objectives:** To explain the different components that MareNostrum III is composed, which were the design decisions taken and why.
To explain how the system administration is taken in this Petaflop system.
**Learning Outcomes:** The students will learn how MareNostrum III is organized and how it works. This can have some insights and ideas about how to manage clusters of thousands of nodes in a HPC or no-HPC environment.

**For registration please follow the link:**

[https://events.prace-ri.eu/conferenceTimeTable.py?confId=318](https://events.prace-ri.eu/conferenceTimeTable.py?confId=318%C2%A0)

**PATC: Programming Distributed Computing Platforms with COMPSs**

**Date:**Thursday, 19 February, 2015 (All day)

**Reasoning:** Distributed computing platforms like clusters, grids and clouds pose a challenge on application developers due to different issues such as distributed storage systems, complex middleware, geographic distributions

**Outline:** COMPSs is a programming model which is able to exploit the inherent concurrency of sequential applications and execute them in a transparent manner to the application developer in distributed computing platform. This is achieved by annotating part of the codes as tasks, and building at execution a task-dependence graph based on the actual data used consumed/produced by the tasks. The COMPSs runtime is able to schedule the tasks in the computing nodes and take into account facts like data locality and the different nature of the computing nodes in case of heterogeneous platforms. Additionally, recently COMPSs has been enhanced with the possibility of coordinating Web Services as part of the applications.

**For registration please go to:**

<https://events.prace-ri.eu/confRegistrationFormDisplay.py/display?confId=320>

**All Courses do not charge fees. PLEASE BRING YOUR OWN LAPTOP.**

**Further details can be found at:**

<http://www.bsc.es/marenostrum-support-services/hpc-trainings/prace-trainings>

If you have specific inquiries, please visit BSC website <http://bsc.es/education>  or mail to us directly patc@bsc.es

We are looking forward to seeing you in Barcelona.

Nia Alexandrov

PATC Coordinator at BSC

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