EuroLab-4-HPC

HPC Curriculum

EUROLAB-4-HPC
eurolab4hpc.eu

Background

EuroLab-4-HPC has developed and validated an HPC curriculum to address the educational needs of future HPC system technology stake holders that complements existing curricula provided by professional organizations such as the ACM, BCS and IEEE.

• The curriculum addresses both fundamental (present in current curricula) and emergent research based topics and educational goals.

• Best practices in distance learning and education for Massive Open Online Courses (MOOCs) based distance learning were surveyed.

Curriculum Outcomes

❑ **Identified three sets of courses:**

I Core: fundamental knowledge of HPC concepts/systems,
II Practical/applied: usage and construction of HPC clusters & applications
III Advanced/application domain specific: research/application led content

❑ **Outlined MSc degree mappings:**
7 core and 2 optional courses & a thesis

I 2-year Computer Science/Electronic Computer Eng. majors
II 2-year Physics/Mathematics majors
III 1-year Bologna 60 ECTS aligned Computer Science/Electronic Computer Engineering majors

❑ **HPC curriculum in context:**

I Catalogue of courses available at HPC centers & universities
II Outlined relationships and similarities of Eurolab's HPC Curriculum to ACM Computer Science Curricula 2013

❑**Best Practices for distance learning in context**

I Outlined MOOCs course development & quality control workflows
II Staff and resource requirements for course development
III Case studies of MOOCs course business models
IV Set of pragmatic guidelines for course design, development and refinement