

EUMaster4HPC Projects outcomes and the liaison towards the educational HPC ecosystem

University of Luxembourg, coordinator of EUMaster4HPC

Objectives: High Performance Computing (HPC) is a strategic resource for Europe and a key investment priority in the next long-term EU Multiannual Financial Framework (2021-2027). However, to properly seize HPC's opportunities, there is a strong need for increased education and training. During the last few years, EC has performed several workshops and surveys concerning emerging directions and needs for HPC, HPDA and AI education to understand better the current situation of HPC education in Europe.

The results confirm the need for strengthening the university-level education in HPC taking also the needs of the private sector into account. EUMaster4HPC works towards this goal by,

- Establishing a modular curriculum that will increase the visibility of a MSc in HPC and thus make it more attractive,
- Promoting the establishment of new and improving existing educational programs through strong European collaboration, and,
- Involving the private sector in realizing the modular curriculum and training for the students.

Outcomes:

8 awarding partner universities:

- KTH Royal Institute of Technology
- Università della Svizzera italiana
- Sofia University
- Sorbonne Université
- Friedrich-Alexander-Universität Erlangen-Nürnberg
- Politecnico Milano
- Universitat Politècnica de Catalunya
- University of Luxembourg

Fundamentals (during 1st year):

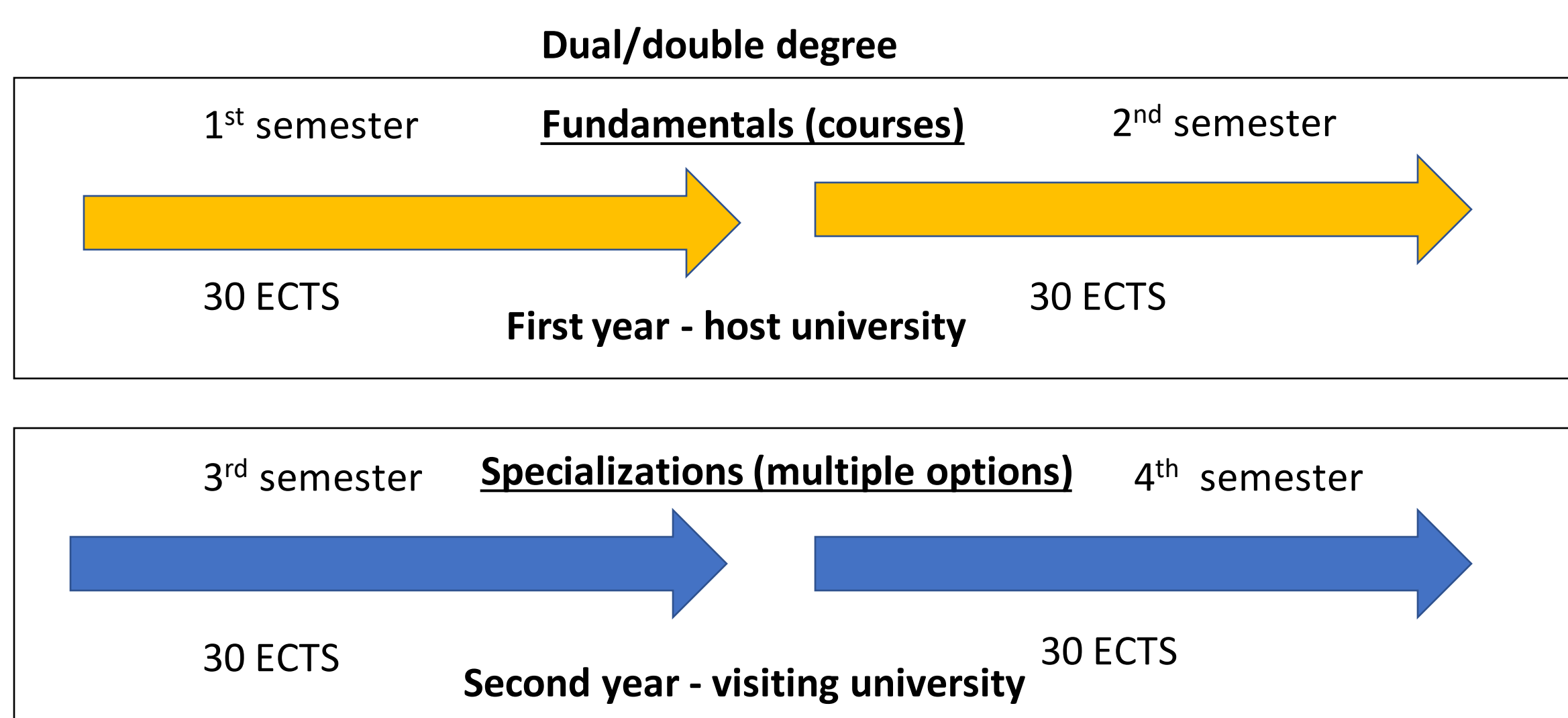
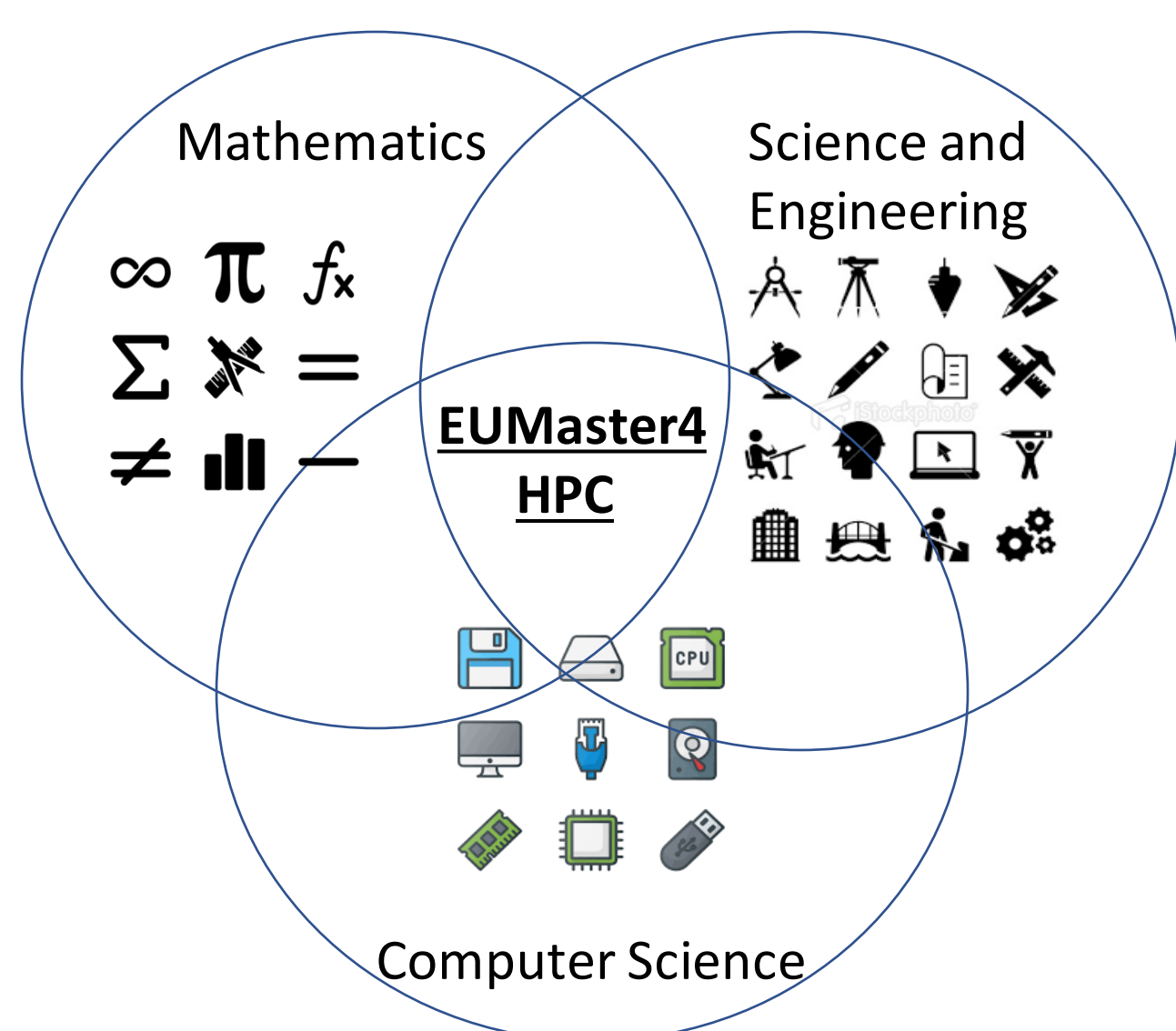
- Mathematics and Statistics
- Software Engineering
- Parallel Programming
- Computer Architecture

Specializations (during 2nd year):

- Application Domain Expert
- Numerical and Data Specialist for Science Domains
- Performance Analyst and Advisor
- System Development and Support
- System Architect

Industrial and Academic Job Market:

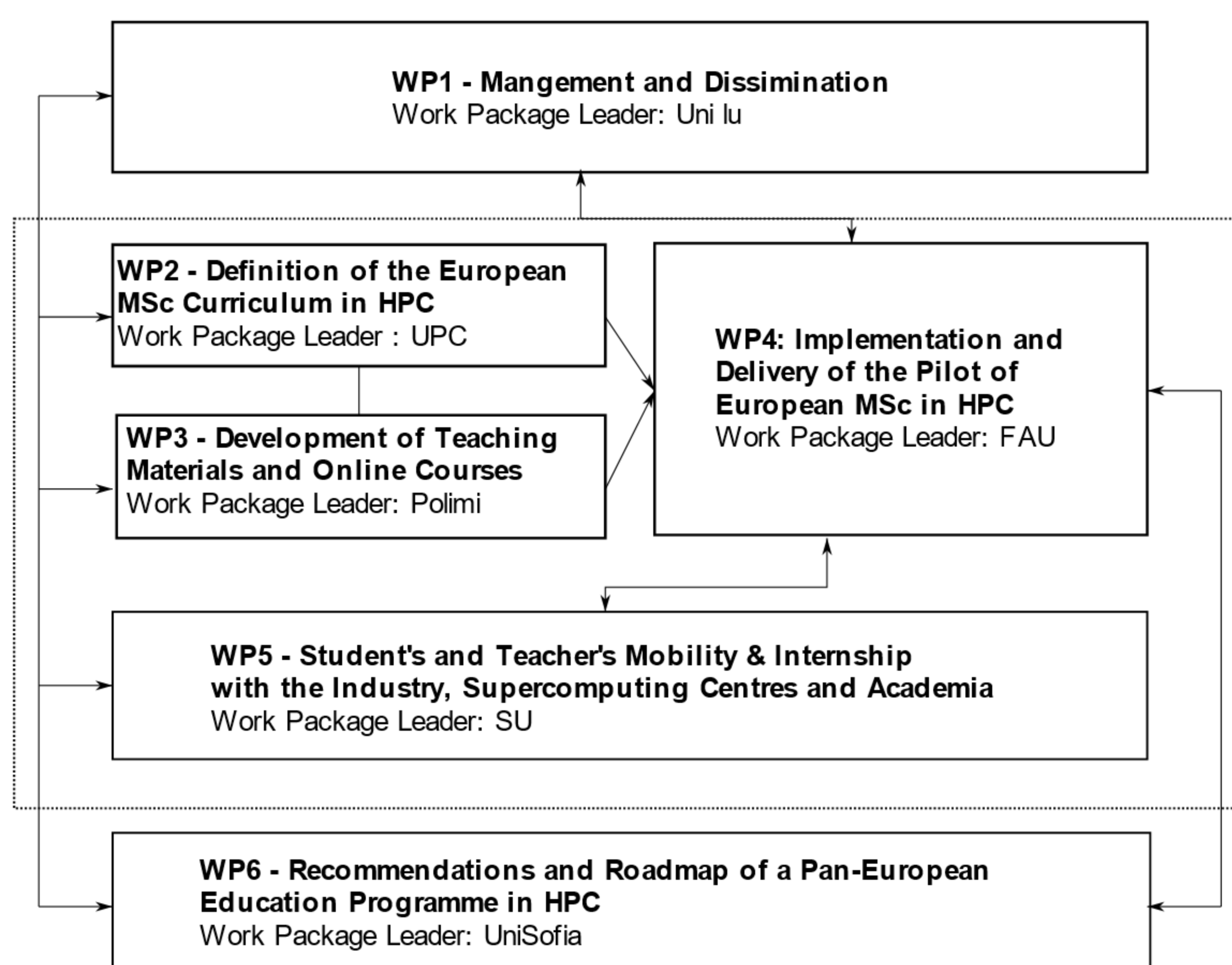
- Research Software and Domain Expertise
- Numerical and Data Analytics Expertise
- Performance Analysis and Engineering Expertise
- System Development, Operations and Support Expertise
- System Architecture Expertise



Opportunities:

- Internships
- Participation to summer school
- Participation to HPC workshops and seminars
- Master thesis – Industry, Academic and HPC R&D centres
- Jobs – PhD, R&D specialist (private and public) and industrial jobs

Milestones:



Key Figures:

- 1st cohort (2022 – September) - 20 student enrolled
- 2nd cohort (2023 – September) - up to 100 students expected
- 21 countries (60 number of participants and 36 supporting partner)
- Gender balanced team – WP leaders, decisions and advisory boards