

Call for Proposals

EUMaster4HPC Challenges

Context

The **European Master for High Performance Computing** (EUMaster4HPC) aims to develop a new and innovative European Master programme focusing on high performance solutions. EUMaster4HPC brings together **major players in HPC education in Europe** and mobilizes them to unify existing programs into a common European curriculum.

The first cohort of EUMaster4HPC students started in September 2022 at five of the awarding universities (Friedrich-Alexander-Universität, Sorbonne Université, Università della Svizzera Italiana, Universitat Politècnica de Catalunya and Politecnico di Milano).

The challenge consists of solving an industrial or scientific problem using HPC. All students must complete a challenge during the 3rd semester (between September 2023 and February 2024) before their departure to the internship. Students will be organised in groups of 3-5 people. At the end of the challenge, students will write a report and present their work to their peers and to a evaluation committee.



Specifications and requirements

Topics and timeline of the Challenges

Challenges' topics will be presented during the 2023 EUMaster4HPC summer school.

The challenges will take place at the 3rd Semester, from September 2023 to late January 2024.

The evaluation will be planned depending on a common schedule for the concerned universities.

Composition of teams

The teams are intended to be multi-institutional and will be established following the presentation of the topics. Students will be able to apply for the challenge by proposing a list of preferences and

their motivations. The assignment will be made before the 1st of September by the challenge organisers in cooperation with the institutions which proposed the challenges' topics.

Academic requirements for the programme

The challenge will allow students to work on a project with a strong conceptual and scientific content, complementing the transversal skills, including problem-solving skills, acquired by the students through the EUMaster4HPC programme, as well as their ability to work in diverse teams.

Challenges will be provided and supported by companies or researchers.

Information about the EUMaster4HPC programme is available: [Home - EUMaster4HPC \(uni.lu\)](#)

Description of the challenge

The challenge's proposal must include:

- a description of the topic, including references and a brief description of the situation
- a description of what is expected from the challenge
- the list of resources to be made available (source codes, models, ...)
- the biography of the business mentor and the expected expertise of the academic mentor
- a proposed schedule
- a detailed description of the adequacy between the difficulty and the scope of the subject and the work achievable by a group of five students during four months with a significant level of autonomy (40h of work per student for the completion, 10h for preparing the presentation). Please note that students must complete the challenge in approximately 15 weeks, and the mentors should dedicate between 2- 4 hours per week to work with the students.

You want to propose a challenge

Please feel free to submit a challenge via email at eumaster4hpc@uni.lu with a copy to Eleni LIAKIDOU eleni.liakidou@uni.lu and 'Stéphane Labbé' stephane.labbe@sorbonne-universite.fr

Your opinion counts

One of the ambitions of the EUMaster4HPC project is to deliver and implement a training program that meets the future needs for the European job market. Our intention is to improve the master programme in HPC based on your feedback after the first challenges. Please give us your opinion via the eumaster4hpc@uni.lu