Université Paris-Saclay
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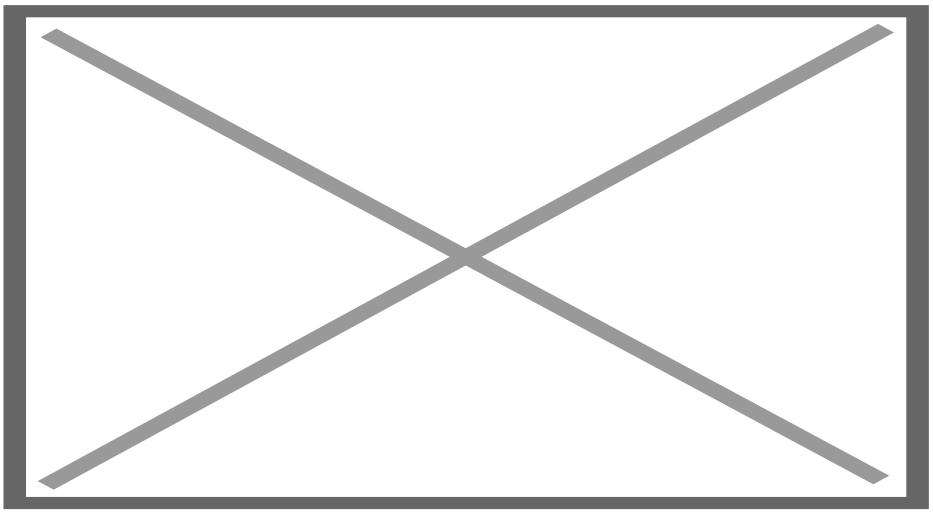
M2 Informatique Haute Performance et Simulation (IHPS)

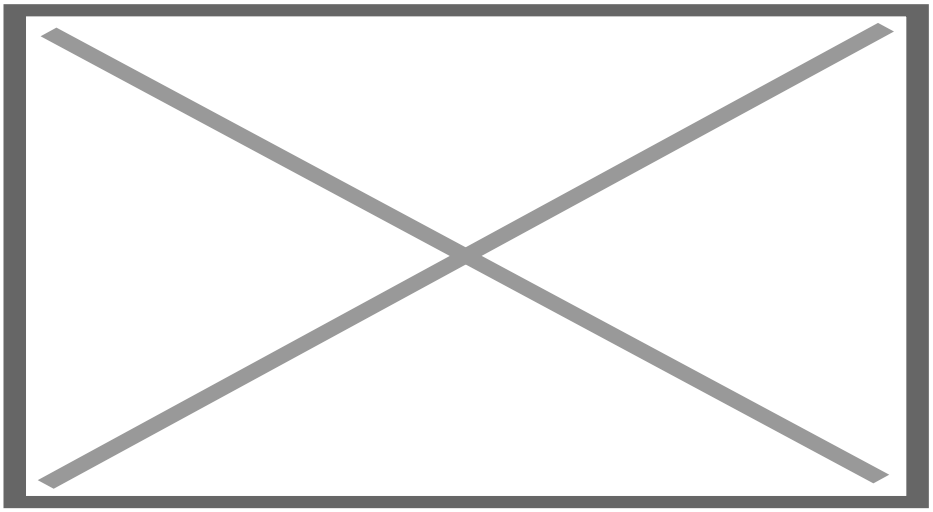
Master's degree
Specialisation Calcul haute performance, simulation
Enrolment type
Formation initiale
Language(s) of instruction
French

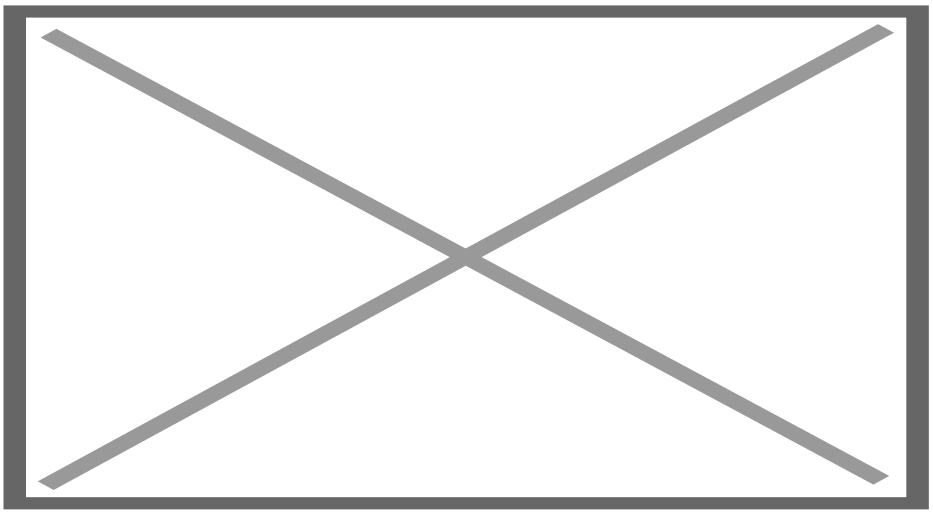
The M2 in High Performance Computing aims to train senior executives capable of taking advantage of major developments in HPC in both industrial and academic research environments. The program combines mathematics and computer science with an introduction to various fields of application: mechanics, finance, medicine/pharmacy, etc.

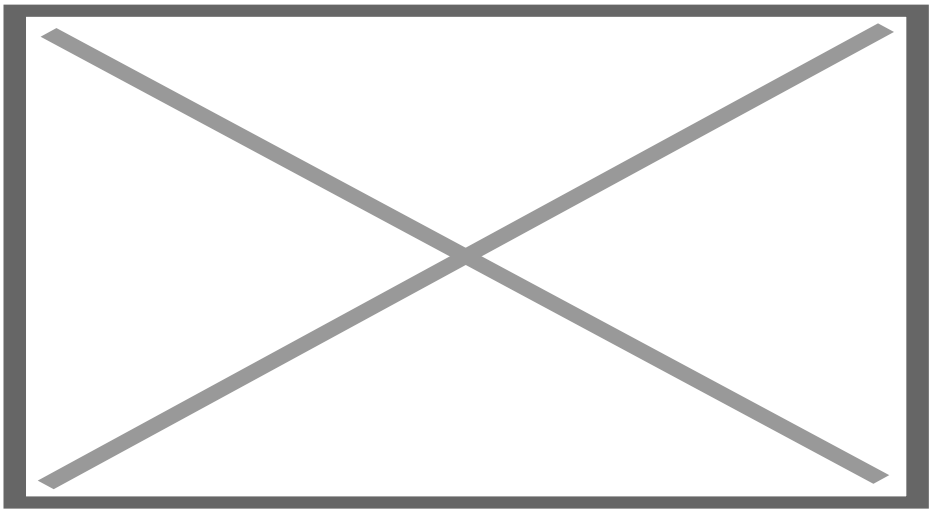
The program consists of one academic semester and one practical semester (internship). The academic semester itself consists of a core curriculum in HPC, followed by a specialization track focused on High Performance Computing.

Télécharger la fiche détaillée
Apply Now









Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

Effectively leverage high-performance architectures.

Objectives

High-performance computing has become widespread due to advances in integrated circuits and modeling techniques, which have opened up a wide range of applications. More recently, advances in artificial intelligence have enabled the development of new high-performance data analytics techniques that closely combine AI and HPC. Finally, autonomous vehicles and, more generally, all embedded systems are renewing interest in performance optimization within critical systems. The purpose of this program is to provide experts in the design and use of HPC technologies at various levels: hardware, software, and systems

Débouchés

Career prospects

Performance analyst
PhD candidate
Engineer
Research engineer
Simulation engineer
System engineer
Technical engineer

Further Study Opportunities

PhD
Students with a 2nd year Master's degree have the possibility to pursue doctoral research.
Engineering, research and development
Consultant
Engineer

Calendar

Start of programme (indicative date)
15/09/2025
Admission

Admission Route

Computer Science
Mathematics
Physics
Physics, Chemistry
Mechanics
Science and Technology
Engineering Sciences

Capacity

Available Places

35

Target Audience and Entry Requirements

The M2 program is primarily intended for students coming from the M1 CHPS program. It is also open to students from scientific M1 programs and engineering schools who have acquired skills similar to those of students from the M1 CHPS program: parallel computing (architecture, algorithms, and parallel programming, etc.), applied mathematics (linear algebra, analysis, numerical methods, etc.).

Période(s) de candidature

Inception Platform

From 15/05/2026 to 15/07/2026

Supporting documents

Compulsory supporting documents

Copy of identity document.

Motivation letter.

All transcripts of the years / semesters validated since the high school diploma at the date of application.

Curriculum Vitae.

Detailed description and hourly volume of courses taken since the beginning of the university program.

Additional supporting documents

Certificate of French (compulsory for non-French speakers).

VAP file (obligatory for all persons requesting a valuation of the assets to enter the diploma).

Document indicating the list of local M2 choices available here : https://urlz.fr/i3Lo.

Supporting documents :
- Residence permit stating the country of residence of the first country
- Or receipt of request stating the country of first asylum
- Or document from the UNHCR granting refugee status
- Or receipt of refugee status request delivered in France
- Or residence permit stating the refugee status delivered in France
- Or document stating subsidiary protection in France or abroad
- Or document stating temporary protection in France or abroad.

Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	
Technical English	2	Semester 1		21					
Charger le détail									
Seminars HPC	1	Semester 1	6						
Charger le détail									
Architecture and Programming of Hardware Accelerators	3	Semester 1	18		12				
Charger le détail									
Data/Learnings	3	Semester 1	18		12				
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	
Performance Evaluation	3	Semester 1	18	12	0				
Charger le détail									
Introduction to Continuum Mechanics	3	Semester 1	18	12					
Charger le détail									
Advanced Methods and Numerical Programming	3	Semester 1	18	12					
Charger le détail									
Advanced programming of multicore architectures	3	Semester 1	18	12	0				
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Architecture and code optimization for high-performance microprocessors	3	Semester 1	18	12				
Charger le détail								
Introduction to Molecular Simulation	3	Semester 1	18	12				
Charger le détail								
Advanced Compiling	3	Semester 1	18	12				
Charger le détail								
Programming Paradigms for Scientific Computing	3	Semester 1	18	12				
Charger le détail								

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Quantum Computing	3	Semester 1	18	12				

Charger le détail

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distanc learni cours
Stage	24	Semestre 2							

Charger le détail

Teaching Location(s)

GIF SUR YVETTE
MONTIGNY LE BRETONNEUX
PALAISEAU

Contact

- **Soraya Zertal**

http://www.universite-paris-saclay.fr/formation/master/calcul-haute-performance-simulation/m2-informatique-haute-performance-et-simulation-ihps