Université Paris-Saclay
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M2 Engineering, Data Science, Human Movement.

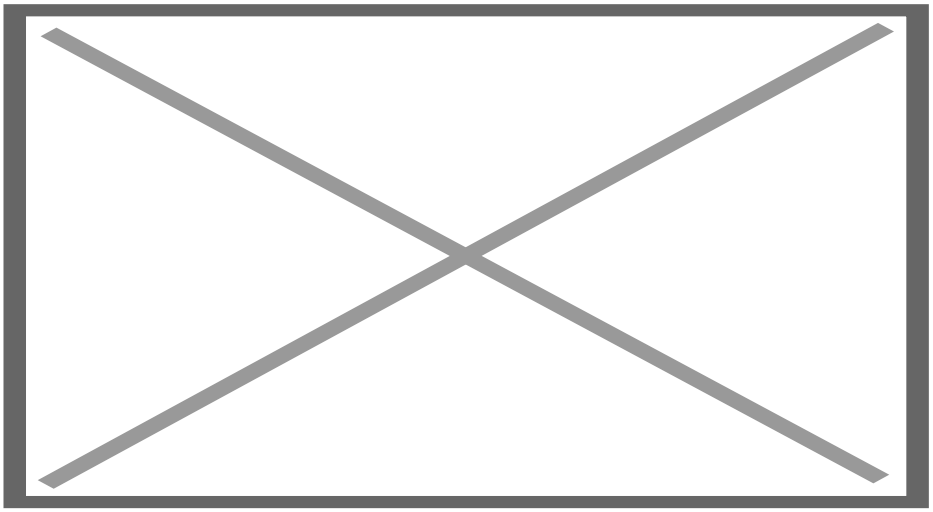
Master's degree
Specialisation Human Movement & Sport Sciences : Engineering and Ergonomics
Enrolment type
Formation initiale
Formation continue
Language(s) of instruction
English
French

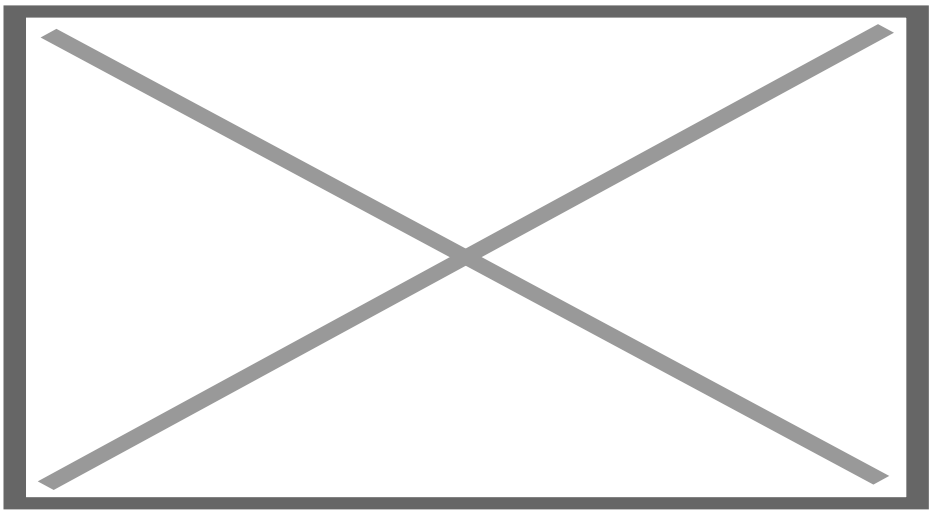
This master's program trains experts in human movement analysis, combining physical ergonomics, biomechanics, data science, robotics, and cognitive sciences. Students deepen their knowledge in musculoskeletal modeling, AI applied to movement, and human-machine interaction, blending scientific methodology with technological projects. The program includes numerous practical sessions (measurement, programming, etc.), internships, specialized conferences, and courses in project management.

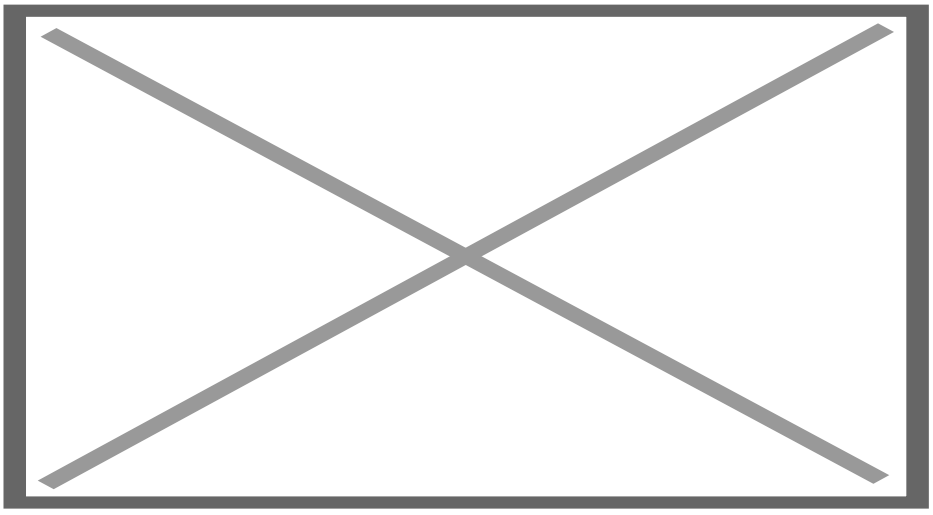
The master’s program covers data science (statistics, machine learning, data visualization), movement analysis (3D biomechanics, sensors, musculoskeletal modeling), physical engineering (mathematics, mechanics, robotics), scientific methodology, and cognitive sciences (AI, psychophysics), with programming as a transversal skill.

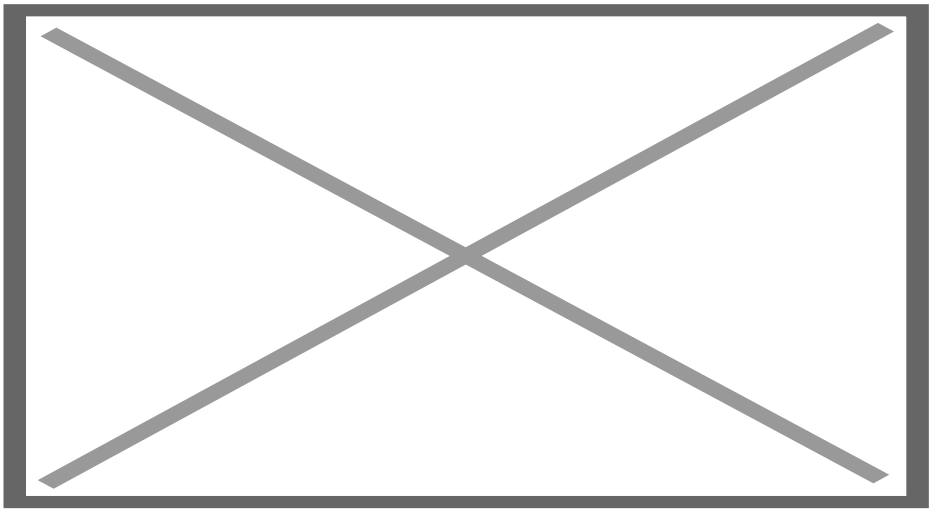
In the first year, students gain solid foundations through practical projects. In the second year, the program specializes in physical ergonomics, assistive robotics, human-machine interaction, AI for movement, and systems approach. The second semester is dedicated to an extended internship in a lab or company (health, sports, R&D, etc.). The program also includes modules in project management, innovation, and entrepreneurship, complemented by immersive experiences: practical work (measurements, programming), hackathons, interdisciplinary conferences, and collaborative projects.

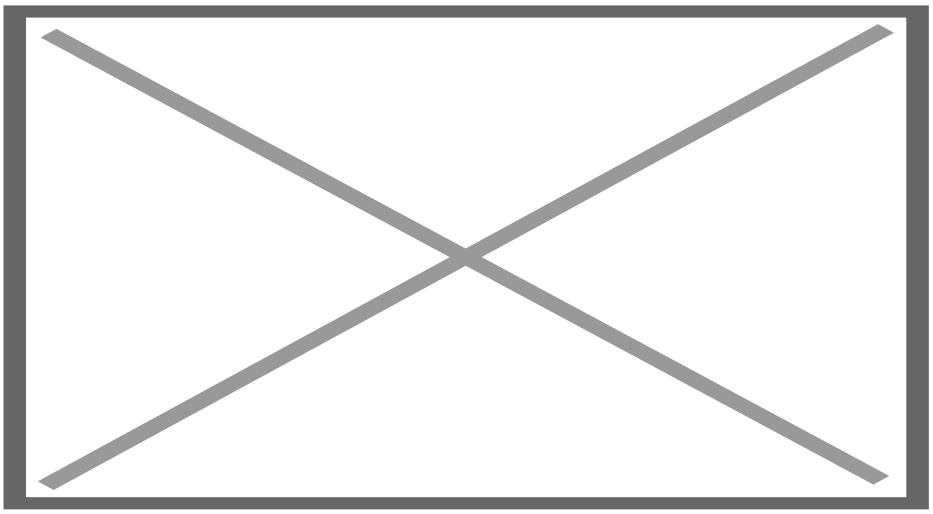
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

Acquire and apply complex and highly specialized multidisciplinary knowledge.

Engineering and data science applied to human movement.

Objectives

The Master's program in STAPS – *Engineering and Ergonomics of Physical Activity* (IEAP) at Université Paris-Saclay trains professionals at the intersection of human movement science, engineering, and data science. It is built around a single track, *Engineering, Data Science, Human Movement* (*Ingénierie, Data Science, Mouvement Humain, IDSMH*), open to students from STAPS (sport sciences), fundamental sciences, and engineering backgrounds, as well as engineering students in a dual-degree program.

The curriculum develops a dual expertise in engineering and data science applied to human movement, addressing the growing needs in assistive robotics, human-machine interaction, and movement analysis across professional, sports, and healthcare contexts. The goal is to design human-centered technological systems capable of measuring, modeling, and analyzing both healthy and pathological movement.

The curriculum covers a broad spectrum, including data science (statistics, machine learning, data visualization), human movement analysis (3D biomechanics, sensors, musculoskeletal modeling), physical engineering (mathematics, mechanics, robotics), scientific methodology, and cognitive sciences (AI, psychophysics). Programming, a transversal skill, is applied across all these fields.

In the first year (M1), students acquire strong foundational knowledge, applied through hands-on projects (technical reports, technological projects, internship). In the second year (M2), the program offers specialization in physical ergonomics, assistive robotics, human-machine interaction, AI for movement, and system-based approaches. The second semester is fully dedicated to a long-term internship, either in a research lab or in industry (health, sports, R&D, etc.).

The training also includes modules on project management, innovation, and entrepreneurship, reinforced through immersive experiences such as practical labs (measurement, programming), hackathons, interdisciplinary conferences, and collaborative projects.

Career opportunities include human movement analysis, physical ergonomics (occupational health, workplace design), sports performance, R&D in human-machine interaction, robotics, and data science applied to human behavior. Graduates go on to work as R&D engineers, data scientists, research officers, ergonomists, technical sales engineers, or pursue PhDs (CIFRE fellowships or ministerial contracts).

The program relies on a strong academic network within Université Paris-Saclay: the Faculty of Sport Sciences, the Faculty of Science (Departments of Physics and Biology), CentraleSupélec, UVSQ (Faculty of Sciences), and Polytech Paris-Saclay.

Débouchés

Career prospects

After a Master's or Master's + PhD: engineer (R&D, control, production, etc.)
After a Master's + PhD: researcher or lecturer
Data Scientist

After a Master's degree: Data scientist
After a Master’s degree: Research analyst
R&D Project Manager
Consulting
Research and Innovation Manager
Research professions
Lecturer (after a PhD)
Human-computer interaction ergonomist - HCI
Human factors ergonomist
Head of mission / projects
Human Factors Engineer
Project follow-up and evaluation manager
Data scientist

Further Study Opportunities

PhD
PhD thesis
Students with a 2nd year Master's degree have the possibility to pursue doctoral research.
Students in this track can turn to research at the end of the 2nd year Master's.
Engineering, research and development
Data Scientist, Data Analyst, Ingénieur·e en Machine Learning dans des secteurs innovants (tech, finance, santé, énergie, etc.) ;
R&D researcher or data modelling and analysis expert in leading-edge companies or laboratories.

Admission

Capacity

Available Places

25

Target Audience and Entry Requirements

To enroll in the M2 “Engineering, Data Science, Human Movement” program, you must have successfully completed the M1 STAPS:IEAP program at Université Paris-Saclay or be an engineering student (particularly at CentraleSupélec or Polytech Paris-Saclay, see dual degree agreement).

Due to the multidisciplinary nature of the Master's program, students will be introduced to new academic content that may not be part of their original training. For instance, students from STAPS, Biology, Cognitive Sciences, or Ergonomics will be introduced to engineering and data sciences (including some mathematics), while those from Engineering, Mathematics, or Physics will learn about human movement sciences. Therefore, applicants must demonstrate strong motivation to invest in the program and acquire knowledge and skills in new scientific and technological fields.

Période(s) de candidature

Inception Platform

From 30/01/2026 to 27/06/2026

Supporting documents

Compulsory supporting documents

Motivation letter.

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

Curriculum Vitae.

Additional supporting documents

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

Le niveau B2 est requis

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

Mandatory for students who are applying and have not validated the 1st year of the same master program (M1 STAPS:IEAP)

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	c
Tronc commum									
Understanding scientific research III	4	Semestre 1		30	6				
Charger le détail									
Innovation, Gestion de projet et Connaissance de l'entreprise	3	Semestre 1		32					
Charger le détail									
Human-machine interaction	3	Semestre 1	19	12					
Charger le détail									
Ergonomie, Biomécanique, Modélisation	4	Semestre 1	18	21	5				
Charger le détail									
Modélisation de systèmes physiologiques	3	Semestre 1	16	12					
Charger le détail									
Data Science III	5	Semestre 1	4	45					
Charger le détail									
Assistance et contrôle adapté	3	Semestre 1	12	9	9				
Charger le détail									
Spécialisation									
Ingénierie robotique	5	Semestre 1	24	21	9				

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	c
Charger le détail									
Des sciences cognitives à l'IA pour le mouvement humain II	5	Semester 1	22	26					
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practi class
Connaissance du milieu professionnel III								
Connaissance du milieu professionnel III	28	Semestre 2	20	10				
Charger le détail								
UE à choix (dont UE Libre)								
UE libre catalogue S1 et S2	2.5	Semestre 2						
Charger le détail								
UE Internationalisation	2	Semestre 2						
Charger le détail								

Teaching Location(s)

BURES SUR YVETTE
ORSAY
GIF SUR YVETTE
VELIZY VILLACOUBLAY

Contact

- **Michel-Ange AMORIM**

http://www.universite-paris-saclay.fr/formation/master/staps-ingenierie-et-ergonomie-de-lactivite-physique/m2-ingenierie-data-science-mouvement-humain