



## COURSE IN ENGLISH

International  
higher education  
degree.

Human Movement Science  
Performance Optimization  
Exercise Physiology  
Training  
Biomechanics

### ADMISSION REQUIREMENTS:

Bachelor's degree  
Foreign higher education degree  
Open to Health professionals

# Master Sports Science for Health & Performance

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## Course presentation:

The general objective of the Master is to bridge the gap between research in human movement science and sports practice. More specifically, this Master aims to promote the acquisition of basic knowledge and scientific skills in the fields of Physiology, Biomechanics, Psychology and Neuroscience in order to rationalize and improve practices in training, as well as to optimize sports performance. With a strong relationship between basic research and applied sport science, the overall objective is the promotion of athletes health and well-being, and naturally the opportunity for students to pursue into research and development in human movement and sport sciences. The Master will gather highly renowned scholars, health and sport professionals working closely together in a theoretical and practical teaching environment providing students with an original and relevant approach that puts human movement science into practice, and vice versa.

In modern sports, athletes training and methods for the optimization of performance are under constant development, and require basic knowledge in human movement science to be mostly efficient. The objective of this first year is to facilitate the acquisition of basic knowledge and scientific skills in the fields of Physiology, Biomechanics, Psychology and Neuroscience applied to human movement. Understanding the multifactorial dimension of movement organization and related

motor performance will allow students to better handle complex situations in sports during their internship in laboratory and professional structures (e.g. sport federations or institutes). By interacting with researchers and professionals, students will learn the use of cutting-edge technology within different scientific fields (e.g. fast camera, force platform, connected objects, portable gas analyser, etc.), and how to analyze and interpret collected data (e.g. signals processing, quantitative / qualitative statistics, etc.).

## Course strengths:

National and International partnerships:

- Army Biomedical Research Institute (IRBA)
- Institut de Gasquet (Paris)
- University of Porto (Portugal)
- University of Coimbra (Portugal)
- University of Waterford (Ireland)
- University of Munster (Germany)

## Course opportunities:

- Sport and Exercise scientist
- Exercise physiologist
- Physical trainer
- Personal coach
- Sports coach

| Year 1 program   | Hours | Year 2 program  | Hours |
|--|-------|---|-------|
| <b>Neuroscience &amp; Psychology</b> <ul style="list-style-type: none"> <li>• Neuroscience and human movement</li> <li>• Fundamentals in sports psychology</li> </ul>  | 27 h  | <b>Athlete health</b> <ul style="list-style-type: none"> <li>• Prevention of injuries</li> <li>• Athlete rehabilitation and readaptation</li> <li>• Re-athletisation</li> </ul>   | 51 h  |
| <b>Biomechanics and human movement</b> <ul style="list-style-type: none"> <li>• Sports biomechanics</li> <li>• Biomechanical basis of postural control</li> <li>• Coordination between posture and movement</li> </ul>                         | 30 h  | <b>Sports training and optimization</b> <ul style="list-style-type: none"> <li>• Adaptations to physical training</li> <li>• Mental training and coaching</li> <li>• Theory and methodology of training</li> <li>• Optimisation of sport performance</li> </ul> | 120 h |
| <b>Physiology of sports and exercise 1</b> <ul style="list-style-type: none"> <li>• Muscular physiology</li> <li>• Cardiorespiratory physiology</li> <li>• Applied environmental physiology</li> </ul>   | 48 h  | <b>Project development</b> <ul style="list-style-type: none"> <li>• Personalized professional project</li> <li>• Conception of innovative projects</li> </ul>   | 34 h  |
| <b>Materials and methods in human movement sciences 1</b> <ul style="list-style-type: none"> <li>• Research methods 1</li> <li>• Measurement tools for sports performance</li> <li>• Analysis of movement and physiological signals</li> </ul> | 77 h  | <b>Materials and methods in human movement sciences 3</b> <ul style="list-style-type: none"> <li>• Research methods 2</li> <li>• Statistics 2</li> </ul>  | 18 h  |
| <b>Physiology of sports and exercise 2</b> <ul style="list-style-type: none"> <li>• Bioenergetics of Exercise</li> <li>• Nutrition and exercise metabolism</li> </ul>  | 34 h  | <b>Sport performance internship</b>   |       |
| <b>Materials and methods in human movement sciences 2</b> <ul style="list-style-type: none"> <li>• Statistics 1</li> <li>• Performance Analysis and monitoring</li> </ul>  | 48 h  |   |       |
| <b>Sport performance internship</b>  |       |   |       |

## Presentation of the University of Paris-Saclay:

Université Paris-Saclay offers a complete and varied range of Bachelor's, Master's and Doctorate degrees, whose quality is recognised internationally thanks to the reputation of its research and the commitment of its teaching staff. Its constituent faculties and component institutions further expand this offer with cutting-edge thematic training in science and engineering, life sciences and health, social sciences and humanities.

With 275 laboratories shared with CEA, CNRS, IHES, Inrae, Inria, Inserm, Onéra, Université Paris-Saclay represents 13% of the French research potential.

Located south of Paris, on a vast territory (from Paris to Orsay, via Evry and Versailles), Université Paris-Saclay benefits from a strategic geographical and socio-economic position enhanced by its international visibility.

The Sport Science Faculty of Paris-Saclay and the Sport Sciences department of the University of Evry have developed a specialization in the fields of Sport and Exercise Science, Exercise and Health, Human Factors and Ergonomics, Sports engineering, and Sports management from which a graduate School has been recently created, namely the Graduate School of Sport, Movement and Human Factors. The department of Sport and Exercise

Science and the laboratory "Biologie de l'Exercice pour la Performance et la Santé" from the University of Evry belong to this graduate School. The research laboratory is a joint venture between the French Army Biomedical Research Institute (IRBA) and the laboratory "Biologie de l'Exercice pour la performance et la Santé" involving also a diabetic research center, the CERITD "Centre d'Étude et de Recherche sur l'Intensification du Diabète".

### Application period(s):

M1 From 15/03/2021 to 15/06/2021

M2 From 01/05/2021 to 15/06/2021

### All Master's degree admissions require an application form.

#### 1. Submit your application to the University Paris-Saclay application platform

Compulsory supporting documents:

- Curriculum Vitae
- Motivation letter
- All transcripts of validated year/semester grades from the bachelor's degree at the date of application

#### 2. Examination of your application by the Master's selection committee

#### 3. Decision sent to the email provided in your application

### Registration:

Successful applicants will receive an email about the registration procedures at the University of Evry

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