Université Paris-Saclay

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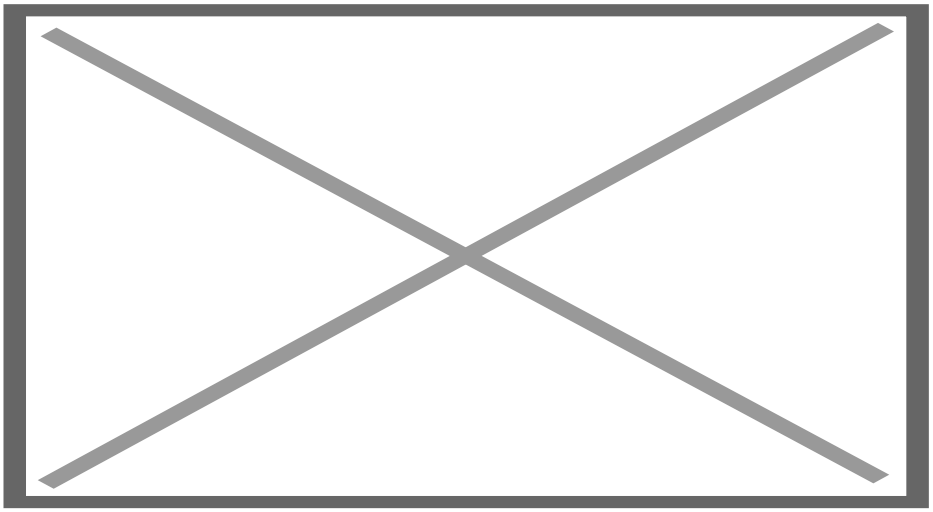
M1 Immunology and Physio-Physiopathology - Orsay campus

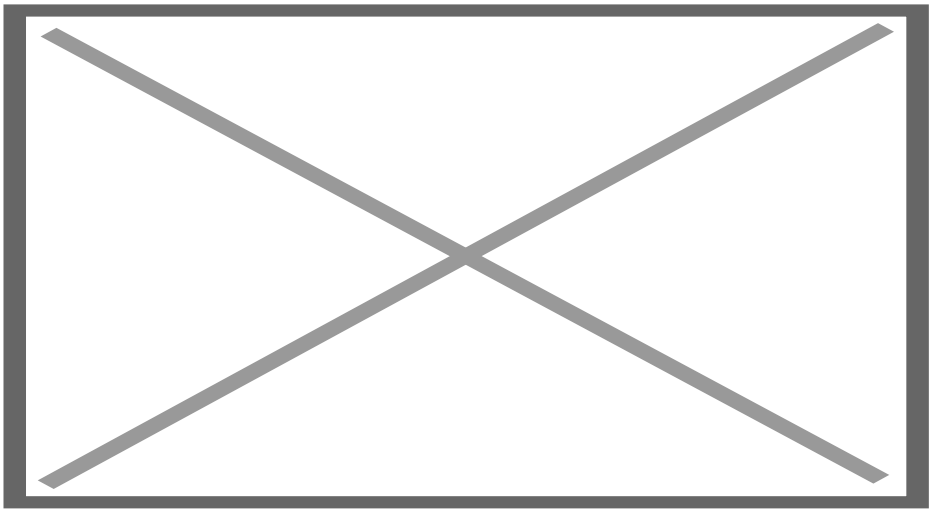
Master's degree
Specialisation Biologie moléculaire et cellulaire
Enrolment type
Formation initiale
Formation continue
Language(s) of instruction
English
French

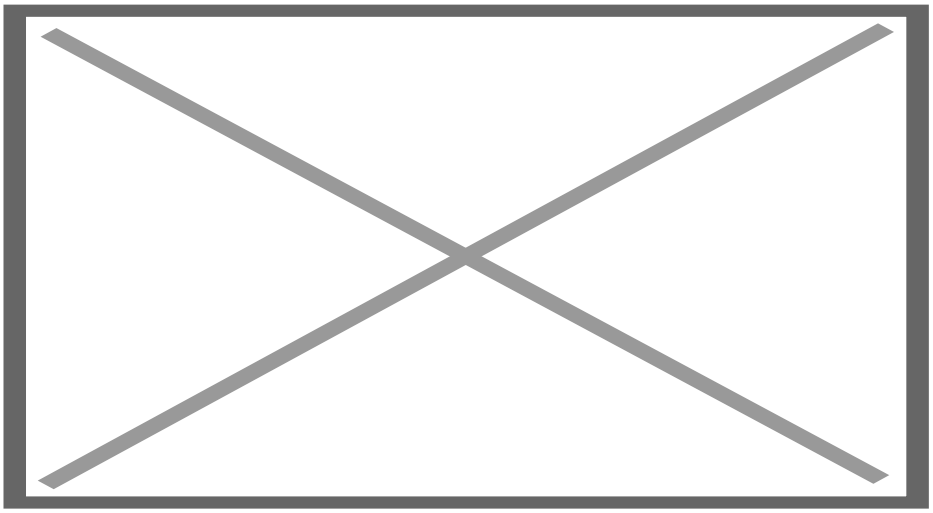
The Immunology and Physio-Physiopathologies (I2P) course offers a curriculum through and in research, focusing on the study of the body's main regulatory systems. You will explore how physiological mechanisms ensure the balance of living organisms, and how disruption of these mechanisms can lead to inflammation, autoimmunity, metabolic disorders or cancer, by taking a multidisciplinary approach to understanding the complexity of living organisms.

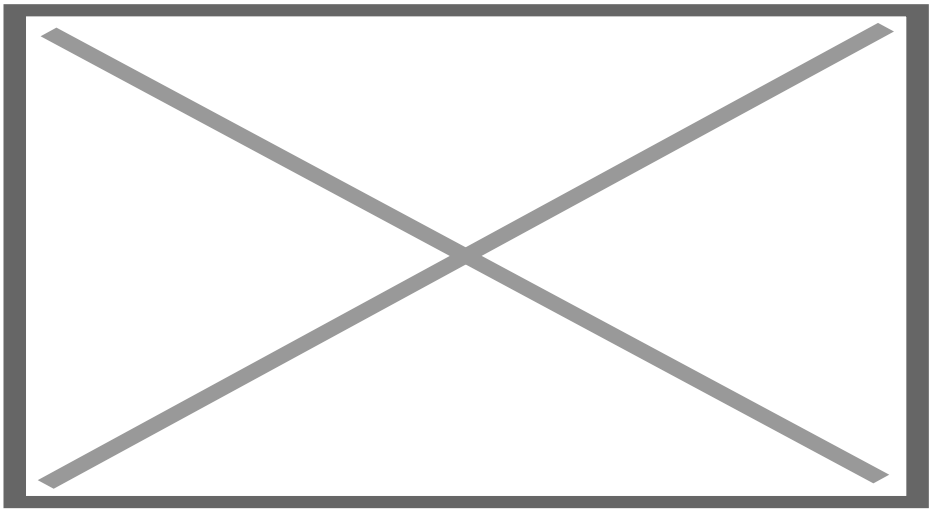
The **1st year Master's Immunology and Physio-Physiopathologies** is organised into **four blocks of knowledge and competencies**: **Methods and Fundamentals for the Study of Living Organisms** (12.5 ECTS) A springboard to an integral understanding of the life sciences! Strengthen key disciplines (scientific English, cellular and molecular biology, biochemistry, cell signalling and genomics) while developing the essential methodological competencies for analysing biological systems. **Immunology and Physio-Physiopathologies Major** (25 ECTS)** Give your 1st year Master's a specific focus by choosing from among the many TUs offered in the core of your course. **Minor (10 ECTS)** Broaden your **scientific culture** to develop a cross-disciplinary approach. **Immersion in Research (12.5 ECTS)** Dive right into the heart of research: Draft a **bibliographic dissertation** and complete an **8-week laboratory internship**. For the more inquisitive, combine the core TUs of two Majors to develop a double course.

Télécharger la fiche détaillée
Apply Now









Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

Competency 1: Scientific approach C1. Take a scientific approach, develop innovative ideas and produce new knowledge. Competency 2: Expertise, critical thinking and self-training C2. Acquire highly specialised disciplinary knowledge and methodologies in one field and at the interface of several fields of work (complex interdisciplinarity) Competency 3: Scientific communication C3.3: Extract and scrutinise relevant information from scientific documents or lectures in English. Competency 4: Professional soft skills C4. Analyse and adapt actions to a professional context

Objectives

The **Immunology and Physio-Physiopathologies** (I2P) course of the Master of Molecular and Cellular Biology offers a curriculum through and for research, focused on the study of regulatory systems in living organisms, and how these are disrupted. You will **consolidate your disciplinary foundations**, learn to **analyse scientific literature**, **lead projects** and **work on specific problems**, while being free to **personalise your course** according to your preferences and ambitions. In particular, you will learn how to use the necessary conceptual and methodological tools for understanding the fundamental mechanisms of immunity and major physiological functions (endocrinology, reproduction, metabolism, cardio-respiratory), and analyse how these are disrupted in the main human pathologies. The *I2P* course provides: * an in-depth understanding of immunology: development, differentiation and regulation of immune cells, innate and adaptive responses, tolerance and autoimmunity, immunopathologies and therapeutic approaches; * a solid grounding in integrative physiology, including endocrinology, hormonal regulation of the metabolism,

reproduction, as well as cardio-respiratory functions and how these are disrupted ; * a mechanistic approach to pathophysiology, where inflammatory, autoimmune, metabolic, tumoral and infectious processes are covered, as well as aspects related to nutrition, ageing and longevity; * a cross-disciplinary approach in which immunity and physiology are linked, with the aim of understanding the complexity of multifactorial diseases. You benefit from a **unique freedom to plan your course through a wide choice of TUs**. You will also be introduced to modern experimental methods (cytometry, imaging, omics analysis, experimental models). This flexibility of this course allows you to plan your curriculum and start developing targeted expertise in the disciplines that interest you and where you plan to pursue your studies for your 2nd year Master's.

Débouchés

Career prospects

After a Master's + PhD: researcher or lecturer
R&D Engineer
Design engineer industry / public research

Further Study Opportunities

2nd yea Master of Biology of ageing
2nd year Master of Endocrinology and metabolism
2nd year Master of Immunology
2nd year Master of Immune Interactions and Cellular Engineering
2nd year Master of Reproduction and Development

Admission

Admission Route

Life Sciences
Life and Earth Sciences

Capacity

Available Places

10

Target Audience and Entry Requirements

Hold a **National undergraduate degree in Life Sciences** or Life and Earth Sciences, obtained before September 1st of the academic year for which you are applying. Have a solid foundation in the fundamentals of biology: Molecular biology, cell biology, biochemistry, genetics. Must have validated TUs in the 2nd/3rd year undergraduate degree in line with the themes of the relevant course. **For French-speaking international students**: Have a diploma equivalent to an undergraduate degree in Life Sciences, guaranteeing the same prerequisites, obtained before 1st September of the academic year for which you are applying. If your full-time academic programme is highly specialised, we recommend that you first apply for a 3rd year undergraduate degree in Life Sciences (National diploma). Required level of French: C1 (certification). For **English-speaking international students:** You may apply to the International track in France if you graduated with a Bachelor degree, major in Biology, or if you will graduate before Sept 1st of the academic year for which you apply.

Période(s) de candidature

Inception Platform

From 15/01/2026 to 16/03/2026

MonMaster Platform

From February 17th to March 16th, 2026

To find out which platform you should apply through, please see the Masters' applications and enrolment page.

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

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

Cette fiche n'est pas demandée si vous êtes ou serez diplomé·e d'une Licence ou d'un Bachelor obtenu en France ou à l'international.
Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class

Formation Préparatoire	0	2	22,5	7,5
Méthodes et Fondamentaux pour l'Exploration du Vivant	0	2	22,5	7,5
Immersion Recherche	0	3	22,5	7,5
Mineure (parcours I3P)	0	9	22,5	7,5
Majeure 1 (Double Majeure I3P))	0	0	22,5	7,5
Majeure 2 (Double Majeure I3P)	0	5	22,5	7,5

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Formation Préparatoire	0	2	22,5	7,5				
Méthodes et Fondamentaux pour l'Exploration du Vivant	0	2	22,5	7,5				
Immersion Recherche	0	3	22,5	7,5				
Majeure I3P	0	1	22,5	7,5				
Mineure (parcours I3P)	0	9	22,5	7,5				

Contact

- **Karim BENIHOUD**
- **Rami BECHARA**

http://www.universite-paris-saclay.fr/formation/master/biologie-moleculaire-et-cellulaire/m1-immunologie-et-physio-physiopathologie-site-orsay