Université Paris-Saclay

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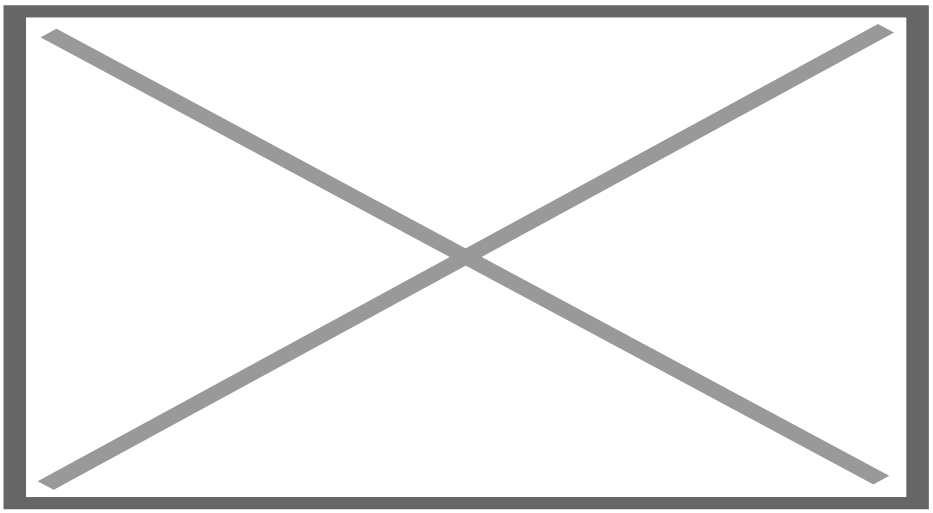
M2 Cognition, Behavior and Mental Disorders

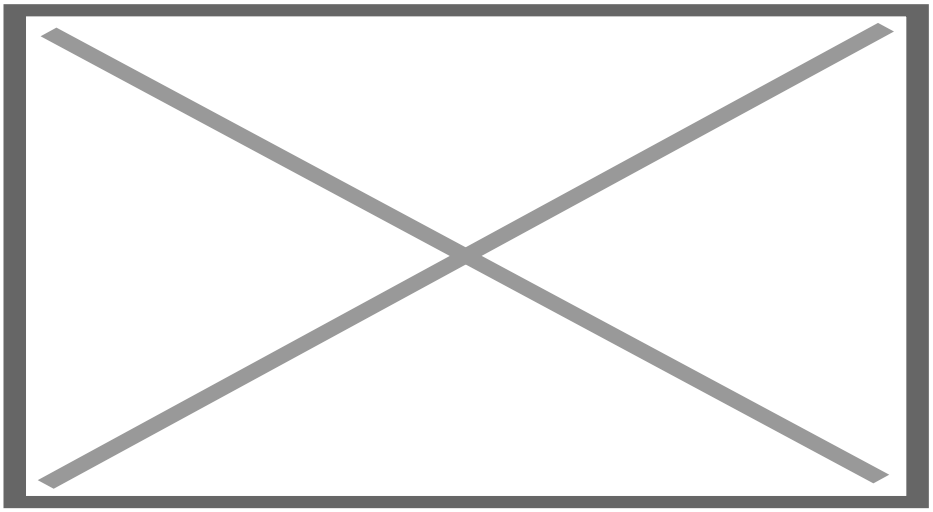
Master's degree
Specialisation Neurosciences
Language(s) of instruction
English

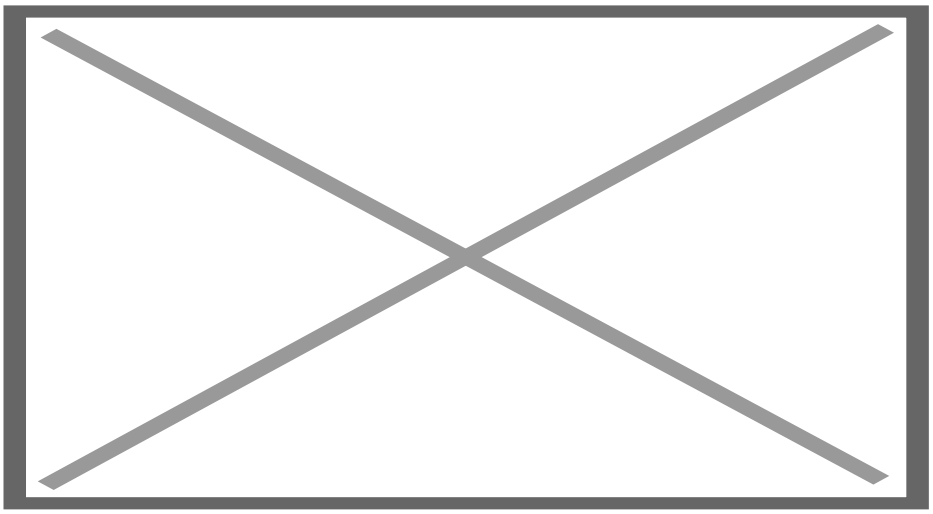
Learning, memory, planning, decision-making, and social interaction are cognitive functions enabled by a functional brain in all animals. How does a healthy brain support the development and maintenance of these complex functions? How do brain cells interact, or how are neurotransmitters involved in these processes? How, when, and why are these functions altered in developmental, neurodegenerative, or psychiatric conditions? These exciting questions will be explored in this Master's program.

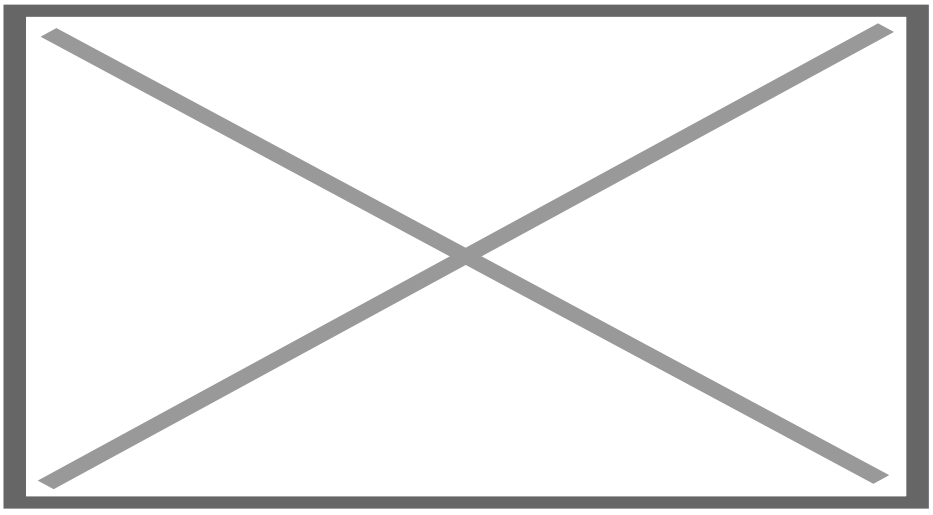
The M2 ***Behavior, Cognition and Mental Disorders*** will provide the opportunity to study cognitive functions and their underlying neural mechanisms in healthy subjects or associated with neurodevelopmental, psychiatric or neurodegenerative diseases. During the first semester, 6 theoretical and practical teaching units are offered: 'Brain plasticity, learnings and memories', 'Psychiatric disorders: translational approaches and treatments', 'Social cognition in normal and pathophysiological conditions', 'Human cognitive neuroscience of development', 'Gut-brain axis in the control of eating behaviors and emotions', and 'Methods in cognition'. Four additional units can be chosen in the '*M2 Systems Neuroscience: from cells to brain functions'* or other units addressing specific topics in neuroscience. During the second semester, a six-month research internship will allow students to deepen their theoretical knowledge and develop advanced technical skills in cognitive and behavioral neuroscience

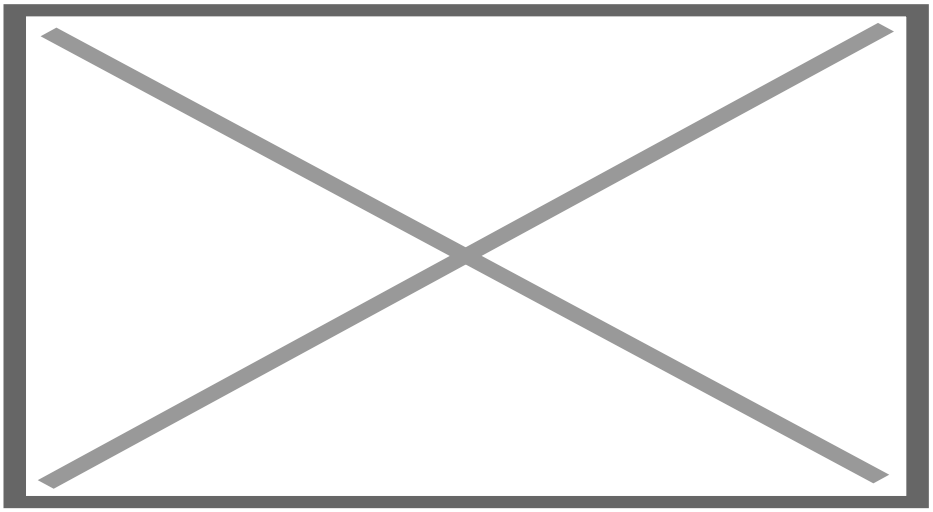
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

At the end of this program, the students will be able to:

- Define the fundamental principles of cognitive functions and brain structures involved.
- Have a comprehensive overview of the brain anatomy, neurophysiology and neurotransmission of healthy mammals
- Explain the current knowledge concerning brain dysfunctions associated to some neurodevelopmental, psychiatric or neurodegenerative diseases, at different scales (from behavioral to cellular and molecular)
- Assess behavioral, neurochemical and/or cellular dysfunctions associated with specific neuropathologies either investigated in preclinical models or in human populations
- Understand the principle of cutting edge brain imaging methods, in rodents and in humans through the involvement of world-renown brain imaging centers
- Analyze data with appropriate statistical methods
- Analyze, understand and present orally scientific publications in the field of Neuroscience
- Show an ability to work in a team and interact scientifically with colleagues
- Develop autonomy in scientific thinking and work organization
- Develop an ethical thinking of Neuroscience research
- Build and communicate a research project (both orally and in writing) and design experimental protocols to study brain-function relationships in healthy individuals, as well as in preclinical or in clinical populations.

Objectives

The objectives of the M2 are to provide students with a solid knowledge regarding brain functioning (at different scales) allowing the development and implementation of behavior and cognitive functions in healthy subjects, in clinical populations or in preclinical models of psychiatric, neurodevelopmental or neurodegenerative disorders. Relying on their innovative research, neuroscience experts will present current knowledge about how healthy brains develop and function, along with the latest innovative methods used to assess brain activity in humans and animal models. Another central objective of the program is to equip students with the tools to assess brain dysfunction in clinical populations and to evaluate efficiency of innovative therapeutics. This will be explored through examples of pathologies involving social dysfunction, eating disorders, learning developmental issues, and major psychiatric disorders including depression, addiction and post-traumatic stress disorders. All these aspects will rely on the close relationship among clinical, animal, and in silico approaches, offering a unique opportunity for students to question and discuss with experts the strength, ethics and limitations of each approach. The Master courses will be at the edge of current questions in Neuroscience, thus providing students with the knowledge and experience needed to take an active part in the laboratory where they will carry out their internship during the second semester.

The global objective of the Master degree is to provide students at the same time with technical/methodological understanding as well as a strong conceptual knowledge enabling them to comprehend and perform in multiple Neuroscience domains, from behavioral studies in preclinical models to pathophysiological assessments in healthy human or clinical populations.

The Master provides a unique opportunity for each student to shape her/his own path by choosing four optional units on top of the six mandatory ones. Students will learn how to design a Neuroscience research project, how to conceptualize a scientific question, why choosing specific methods, how to analyze data and appropriately present them to an audience.

Débouchés

Career prospects

After a Master's + PhD: researcher or lecturer
Healthcare project engineer
Research or Design Engineer
Research & Development Engineer
Research professions

Further Study Opportunities

Engineering, research and development

PhD thesis
Clinical Research associate or assistant course

Calendar

Start of programme (indicative date)
07/09/2026
End of programme (indicative date)
30/09/2027
Admission

Admission Route

Psychology
Life Sciences
Life and Earth Sciences

Capacity

Available Places

15

Target Audience and Entry Requirements

The access in M2 Cognition, Behavior and Mental Disorders is open to:

- Master Students who have obtained the M1 in Neuroscience, or related fields with at least 2-3 units teaching in Neuroscience (basic knowledge in brain anatomy and functioning, at different scales).
- Medical, pharmacy or engineer students (with a specific knowledge in Neuroscience)

The level in English will be assessed during the interview.

Période(s) de candidature

Inception Platform

From 02/02/2026 to 04/04/2026

From 04/05/2026 to 21/06/2026

Supporting documents

Compulsory supporting documents

Motivation letter.

Letter of recommendation from a trainee.

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).

Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practic class
Fundaments in Neuroscience								
Brain plasticity, learnings and memories	3	Semester 1	20					
Charger le détail								
In-depth exploration of Cognition, Behavior and Mental Disorders								
social cognition in normal and physiopathological conditions	3	Semester 1	14	0	6			
Charger le détail								
Methods in cognition	3	Semester 1	2	9	9			
Charger le détail								
Psychiatric disorders: translational approaches and treatments	3	Semester 1	5	15				
Charger le détail								
Human developmental cognitive neurosciences	3	Semester 1	16	4				
Charger le détail								

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practic class
Microbiota-gut-axis in the control of eating behaviors and emotions	3	Semester 1	20					
Charger le détail								

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practic class
Advanced Systems Neuroscience								
Sensory systems and perception	3	Semester 1	25					
Charger le détail								
Neuroethology	3	Semester 1	16	4				
Charger le détail								
Methods in systems neuroscience	3	Semester 1	5		15			
Charger le détail								
Motor systems and actions	3	Semester 1	13.5	6.5				
Charger le détail								
Glia in brain health and disease	3	Semester 1	15	5				
Charger le détail								
Elective courses								
Neural stem cells and neurogenesis	3	Semestre 1	15	5				
Charger le détail								
Closed loop neuroscience	3	Semester 1	25					
Charger le détail								
Models and ethics in neuroscience	3	Semester 1	14	6				
Charger le détail								
Neurodegenerative diseases	3	Semester 1	16	4				

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practic class
Charger le détail								
Functional neuroanatomy, development and evolution	3	Semester 1						
Charger le détail								

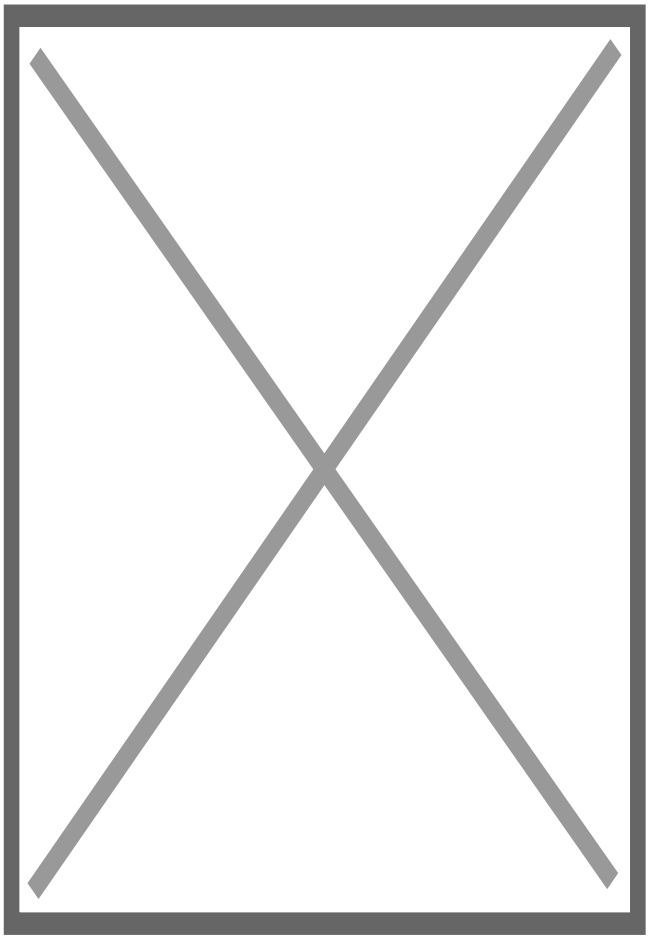
Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learn cour
Internship CBMD	27	Semester 2							
Charger le détail									
Scientific Project CBMD	3	Semester 2							
Charger le détail									

Teaching Location(s)

SACLAY

Training campus

Javascript est requis pour visualiser cette carte.



Saclay Moulon

Saclay / Gif-sur-Yvette / Orsay
Bus 4606 / 4609 / 4611 / 5154
RER B Le guichet
Voir
Student restaurant (CROUS)
Library
Sports facilities
Student residence

Contact

- **Arnaud Petitjean**

  secrétaire pédagogique
- **Sylvie Granon**

  PR
- **roseline poirier**

  PR

disorders