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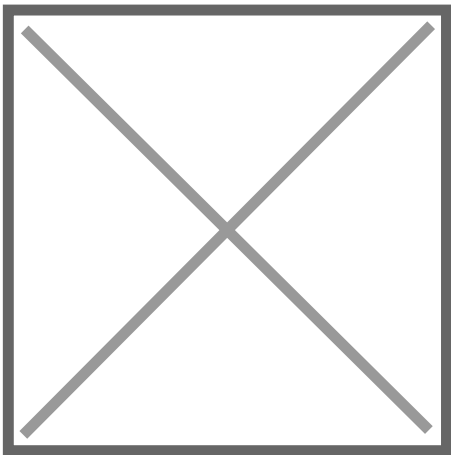
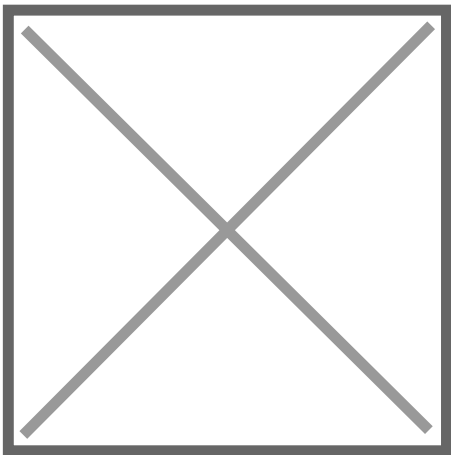
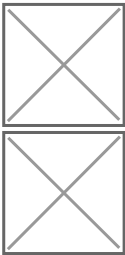
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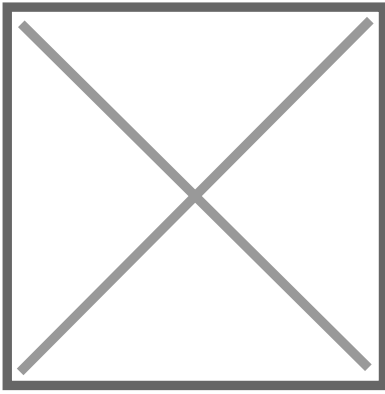
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Une erreur est survenue. Merci de réessayer ultérieurement
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Add to Compare

M2 Systèmes Biologiques et Concepts Physiques





Master's degree

Specialisation Physique fondamentale et applications

Enrolment type

Full-time academic programmes

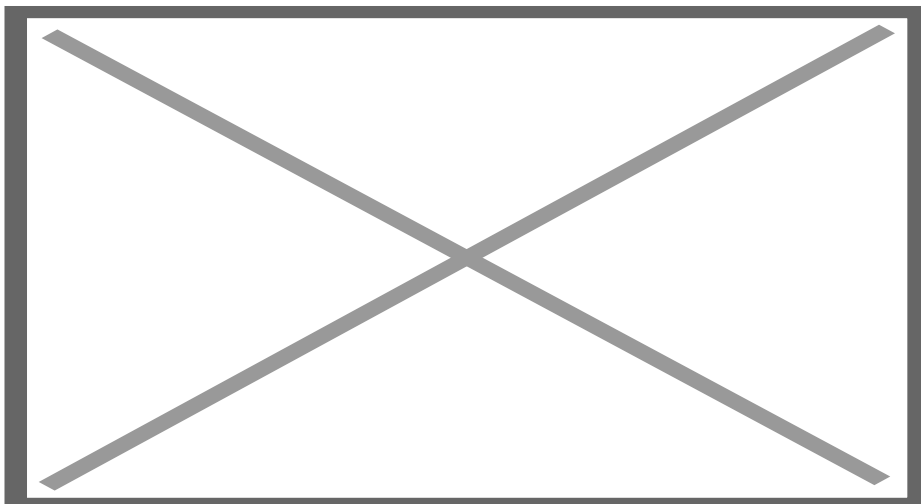
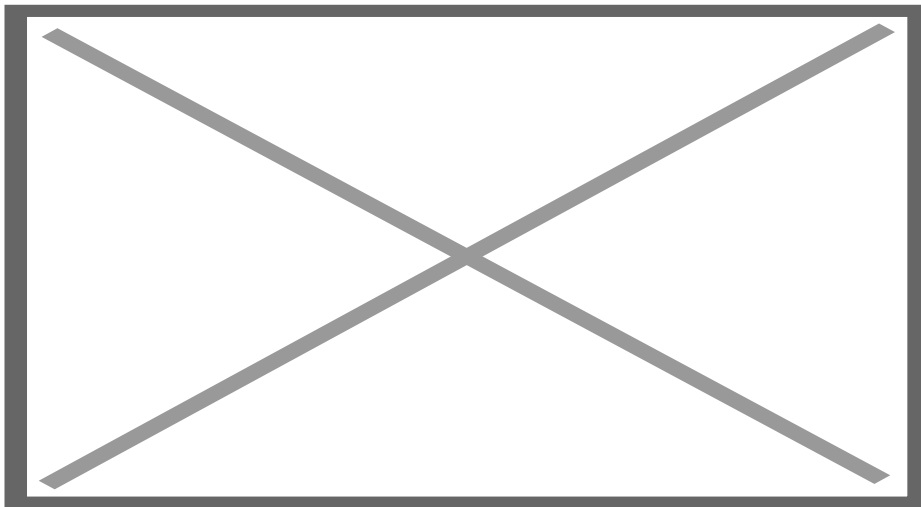
Language(s) of instruction

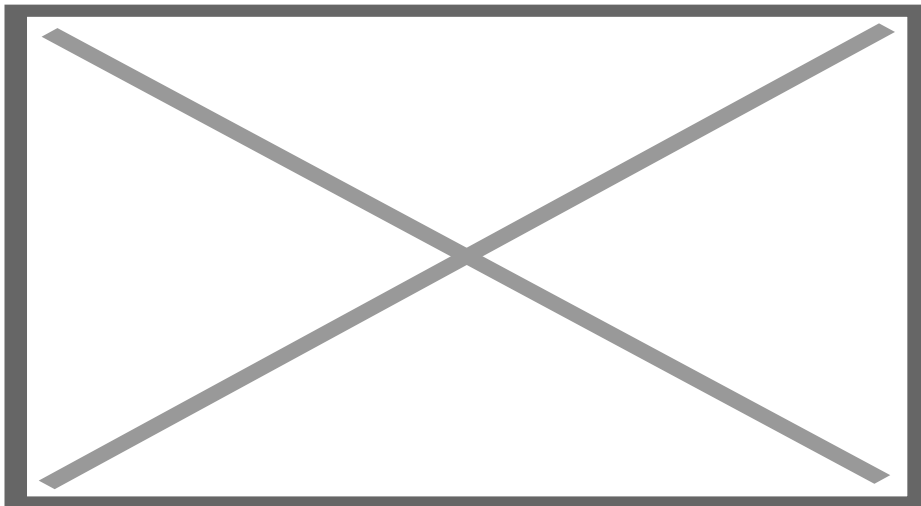
French

The Biological Systems and Physical Concepts master's program enables physics students, depending on the sub-course, to acquire a background in Biology while continuing their studies in Physics at a very high level, and also enables students coming from Biology to acquire greater conceptual and practical mastery of physical methods specific to the study of biological systems.

[Télécharger la fiche détaillée](#)

[Apply Now](#)





Information

- [Overview](#)
- [Application requirements](#)
- [Schedule](#)

Présentation

Objectives

By the end of the course, students have acquired both theoretical and experimental skills et the interface between biology and physic, enabling them to do a thesis in laboratories whose themes range from pure biology to soft matter physics.

Débouchés

Further Study Opportunities

PhD

Calendar

Start of programme (indicative date)

01/09/2026

End of programme (indicative date)

30/06/2027

Admission

Capacity

Available Places

15

Période(s) de candidature

Inception Platform

From 01/03/2026 to 15/07/2026

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.

Please fill the "FORMULAIRE DE CANDIDATURE" that you will find here: <https://master-physique-biologie.fr/contact-candidature/>

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

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

Additional supporting documents

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

Recommendation letters.

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

Approche fondamentale de l'interface Physique-Biologie (AFI)

Tronc commun

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	practical class	directed study/practical class
Physique de la cellule et des tissus	3	Semestre 1	30					



Physique de la cellule et des tissus

ECTS : 3
Semester: Semestre 1
Detail
Lecture: 30
Language(s) of instruction
Français
Remote teaching
non
Prerequisites

Cours d'introduction à la biologie

Type of assessment
Evaluation Continue non Intégrale

[Biologie de l'évolution, du développement et génétique](#) 3 Semestre 1 27



Biologie de l'évolution, du développement et génétique

ECTS : 3
Semester: Semestre 1
Detail
Lecture: 27
Language(s) of instruction
Français
Remote teaching
non
Prerequisites

Aucun prérequis.

Type of assessment
Evaluation Continue non Intégrale

[Projet expérimental à l'interface Physique-Biologie](#) 3 Semestre 1 14

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
■									

Projet expérimental à l'interface Physique-Biologie

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 14

Tutored project 27

Project : 40

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Tronc commun sous-parcours AGI/AFI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
Physique statistique pour la Biologie	4.5	Semestre 1	35	0					
■									

Physique statistique pour la Biologie

ECTS : 4.5

Semester: Semestre 1

Detail

Lecture: 35

Directed study: 0

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Bases de physique statistique d'un M1 de physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
Analyse de données	1.5	Semestre 1	5			10			
■									

Analyse de données

ECTS : 1.5

Semester: Semestre 1

Detail

Lecture: 5

Practical study : 10

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Tronc Commun sous-parcours AFI/AQI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
Microscopie optique pour la Biologie	3	Semestre 1	20						
■									

Microscopie optique pour la Biologie

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 20

Project : 8

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

cours d'optique ondulatoire L3 physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
Projets de physique numérique	4.5	Semestre 1							

Projets de physique numérique

ECTS : 4.5

Semester: Semestre 1

Detail

Project : 45

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

UE de physique numérique de licence et de master de physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

UEs obligatoires pour le sous-parcours AFI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
Matière molle pour la biologie	6	Semestre 1	30	15					

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning courses
----------	------	----------	---------	----------------	-----------------	------------------------	-------------------------	--------------------------------	---------------------------

■

Matière molle pour la biologie

ECTS : 6

Semester: Semestre 1

Detail

Lecture: 30

Directed study: 15

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

cours de physique statistique pour la biologie du M2.

Type of assessment

Evaluation Continue non Intégrale

[Machine learning](#) 1.5 Semestre 1 5 10

■

Machine learning

ECTS : 1.5

Semester: Semestre 1

Detail

Lecture: 5

Practical study : 10

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Cours de Analyse de données du M2

Type of assessment

Evaluation Continue non Intégrale

Options de second semestre AGI/AFI (3 parmi 4)

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning courses
----------	------	----------	---------	----------------	-----------------	------------------------	-------------------------	--------------------------------	---------------------------

[Biologie
Systémique
et intégrative](#) 3 Semestre 27
2

Biologie Systémique et intégrative

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[Modèles en
neurobiologie
et
neurosciences](#) 3 Semestre 27
2

Modèles en neurobiologie et neurosciences

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Cours d'Introduction à la Biologie (M2 semestre
1) et UE Méthodes et Concepts en Biologie

Type of assessment

Evaluation Continue non Intégrale

[Physique des
Systèmes
Biologiques](#) 3 Semestre 27
2

Physique des Systèmes Biologiques

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

UE d'optique ondulatoire de licence et/ou de master de physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

[Systèmes](#) 3 Semestre 27
[Dynamiques](#) 2

Systèmes Dynamiques

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

UE Physique statistique et Biologie du 1er semestre du M2.

Type of assessment

Evaluation Continue non Intégrale

Stage AGI/AFI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	practical class	directed study/practical class	distance learning courses
Stage AGI/AFI	21	Semestre 2							

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning courses
----------	------	----------	---------	----------------	-----------------	------------------------	-------------------------	--------------------------------	---------------------------

■

Stage AGI/AFI

ECTS : 21

Semester: Semestre 2

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Approche Génétique de l'Interface Physique-Biologie (AGI)

Tronc commun

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning courses
----------	------	----------	---------	----------------	-----------------	------------------------	-------------------------	--------------------------------	---------------------------

[Physique de la cellule et des tissus](#)

3

Semestre 1 30

■

Physique de la cellule et des tissus

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 30

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Cours d'introduction à la biologie

Type of assessment

Evaluation Continue non Intégrale

[Biologie de l'évolution, du développement et génétique](#)

3

Semestre 1 27

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	practical class	directed study/practical class	distance learning
----------	------	----------	---------	----------------	-----------------	------------------------	-----------------	--------------------------------	-------------------

■

Biologie de l'évolution, du développement et génétique

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Aucun prérequis.

Type of assessment

Evaluation Continue non Intégrale

[Projet](#)

[expérimental à](#)

[l'interface](#)

[Physique-](#)

[Biologie](#)

■

3 Semestre 1 14

Projet expérimental à l'interface Physique-Biologie

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 14

Tutored project 27

Project : 40

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Tronc commun sous-parcours AGI/AFI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	practical class	directed study/practical class	distance learning
----------	------	----------	---------	----------------	-----------------	------------------------	-----------------	--------------------------------	-------------------

[Physique statistique pour la Biologie](#) 4.5 Semestre 1 35 0

Physique statistique pour la Biologie

ECTS : 4.5

Semester: Semestre 1

Detail

Lecture: 35

Directed study: 0

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Bases de physique statistique d'un M1 de physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

[Analyse de données](#) 1.5 Semestre 1 5 10

Analyse de données

ECTS : 1.5

Semester: Semestre 1

Detail

Lecture: 5

Practical study : 10

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

UEs obligatoires pour le sous-parcours AGI

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

Génétique et épigénétique moléculaires - Institut Pasteur

ECTS : 15

Semester: Semestre 1

Detail

Lecture: 92

Practical study : 100

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Cours d'introduction à la biologie et UE
concepts et Méthodes en Biologie

Type of assessment

Evaluation Continue non Intégrale

Options de second semestre AGI/AFI (3 parmi 4)

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	di le c
Biologie Systémique et intégrative	3	Semestre 2	27						

Biologie Systémique et intégrative

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	di
Modèles en neurobiologie et neurosciences	3	Semestre 2	27						
■									

Modèles en neurobiologie et neurosciences

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Cours d'Introduction à la Biologie (M2 semestre 1) et UE Méthodes et Concepts en Biologie

Type of assessment

Evaluation Continue non Intégrale

[Physique des Systèmes Biologiques](#)

3

Semestre 2 27

■

Physique des Systèmes Biologiques

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

UE d'optique ondulatoire de licence et/ou de master de physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	directed study/practical class
Systèmes Dynamiques	3	Semestre 2	27						

Systemes Dynamiques

ECTS : 3

Semester: Semestre 2

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

UE Physique statistique et Biologie du 1er semestre du M2.

Type of assessment

Evaluation Continue non Intégrale

Stage AGI/AFI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning courses
Stage AGI/AFI	21	Semestre 2							

Stage AGI/AFI

ECTS : 21

Semester: Semestre 2

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Approche Quantitative de l'Interface Physique-Biologie (AQI)

Tronc commun

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Mathematics	5	1	40	10	10	40	10	10
Physics	5	1	40	10	10	40	10	10
Chemistry	5	1	40	10	10	40	10	10
Biology	5	1	40	10	10	40	10	10
Computer Science	5	1	40	10	10	40	10	10
Engineering	5	1	40	10	10	40	10	10
Business Administration	5	1	40	10	10	40	10	10
Law	5	1	40	10	10	40	10	10
Medicine	5	1	40	10	10	40	10	10
Education	5	1	40	10	10	40	10	10
Psychology	5	1	40	10	10	40	10	10
Social Sciences	5	1	40	10	10	40	10	10
Humanities	5	1	40	10	10	40	10	10
Art and Design	5	1	40	10	10	40	10	10
Health Sciences	5	1	40	10	10	40	10	10
Environmental Studies	5	1	40	10	10	40	10	10
Interdisciplinary Studies	5	1	40	10	10	40	10	10
Language and Literature	5	1	40	10	10	40	10	10
History	5	1	40	10	10	40	10	10
Geography	5	1	40	10	10	40	10	10
Political Science	5	1	40	10	10	40	10	10
Economics	5	1	40	10	10	40	10	10
Statistics	5	1	40	10	10	40	10	10
Mathematics	5	2	40	10	10	40	10	10
Physics	5	2	40	10	10	40	10	10
Chemistry	5	2	40	10	10	40	10	10
Biology	5	2	40	10	10	40	10	10
Computer Science	5	2	40	10	10	40	10	10
Engineering	5	2	40	10	10	40	10	10
Business Administration	5	2	40	10	10	40	10	10
Law	5	2	40	10	10	40	10	10
Medicine	5	2	40	10	10	40	10	10
Education	5	2	40	10	10	40	10	10
Psychology	5	2	40	10	10	40	10	10
Social Sciences	5	2	40	10	10	40	10	10
Humanities	5	2	40	10	10	40	10	10
Art and Design	5	2	40	10	10	40	10	10
Health Sciences	5	2	40	10	10	40	10	10
Environmental Studies	5	2	40	10	10	40	10	10
Interdisciplinary Studies	5	2	40	10	10	40	10	10
Language and Literature	5	2	40	10	10	40	10	10
History	5	2	40	10	10	40	10	10
Geography	5	2	40	10	10	40	10	10
Political Science	5	2	40	10	10	40	10	10
Economics	5	2	40	10	10	40	10	10
Statistics	5	2	40	10	10	40	10	10

[Physique de la cellule et des tissus](#) 3 Semestre 1 30



Physique de la cellule et des tissus

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 30

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Cours d'introduction à la biologie

Type of assessment

Evaluation Continue non Intégrale

[Biologie de l'évolution, du développement et génétique](#) 3 Semestre 1 27



Biologie de l'évolution, du développement et génétique

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 27

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Aucun prérequis.

Type of assessment

Evaluation Continue non Intégrale

[Projet expérimental à l'interface Physique-Biologie](#) 3 Semestre 1 14

Projet expérimental à l'interface Physique-Biologie

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 14

Tutored project 27

Project : 40

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Tronc Commun sous-parcours AFI/AQI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	discovery learning
Microscopie optique pour la Biologie	3	Semestre 1	20						

Microscopie optique pour la Biologie

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 20

Project : 8

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

cours d'optique ondulatoire L3 physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

[Projets de physique numérique](#)

4.5 Semestre 1

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

Projets de physique numérique

ECTS : 4.5

Semester: Semestre 1

Detail

Project : 45

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

UE de physique numérique de licence et de master de physique fondamentale.

Type of assessment

Evaluation Continue non Intégrale

UEs obligatoires pour le sous-parcours AQI

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

[Analyse de données](#)

1.5

Semestre 1

5

10

Analyse de données

ECTS : 1.5

Semester: Semestre 1

Detail

Lecture: 5

Practical study : 10

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[Molécules et membranes](#)

3

Semestre 1

28

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

■

Molécules et membranes

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 28

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[Techniques](#)

[d'investigation](#) 3 Semestre 18 10

[en biologie](#)

■

Techniques d'investigation en biologie

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 18

Directed study: 10

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

UEs Options pour le sous-parcours AQI (2 parmi 3)

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d
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[L'informatique](#)

[comme outil](#) 3 Semestre 14 14

[en biologie](#)

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

L'informatique comme outil en biologie

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 14

Practical study : 14

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[Neurones : de](#)

[la réalité à](#)

[l'artificialité](#)

3

Semestre

1

28

Neurones : de la réalité à l'artificialité

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 28

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[Communiquer](#)

[en Sciences](#)

3

Semestre

1

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
■									

Communiquer en Sciences

ECTS : 3

Semester: Semestre 1

Detail

Project : 45

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Stage AQI

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
Stage AQI	30	Semestre 2							

■

Stage AQI

ECTS : 30

Semester: Semestre 2

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Teaching Location(s)

ORSAY

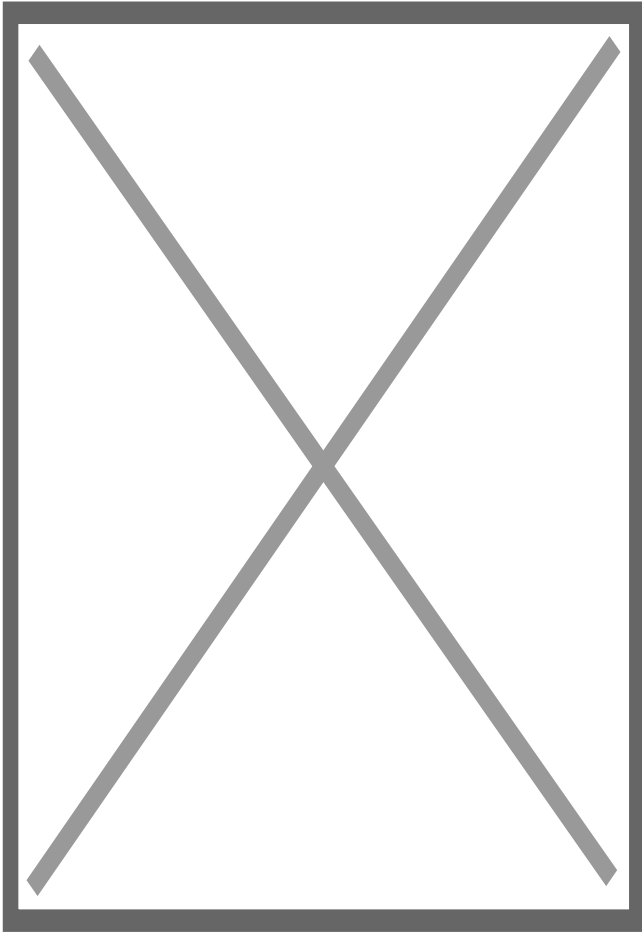
PARIS 15

Academic Partner(s)

Université Paris-Cité, Sorbonne Université, IOGS

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

- **Christophe POULARD**

Responsable de formation

<http://www.universite-paris-saclay.fr/formation/master/physique-fondamentale-et-applications/m2-systemes-biologiques-et-concepts-physiques>