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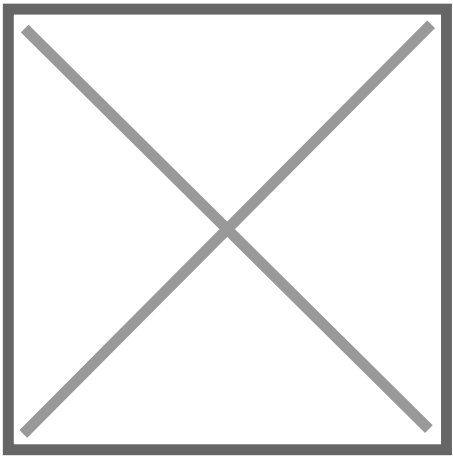
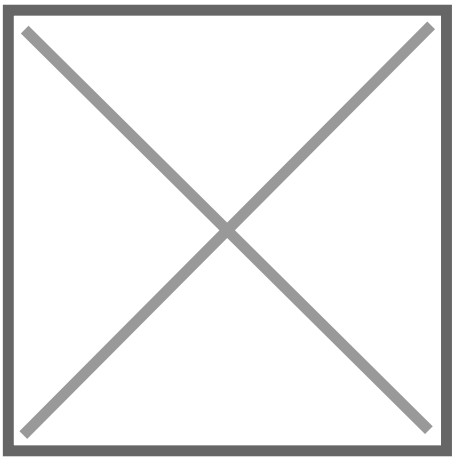
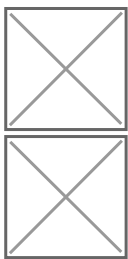
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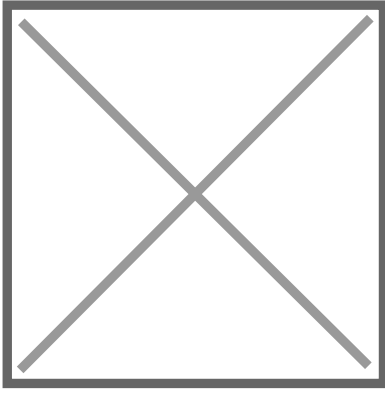
Envoyer

Une erreur est survenue. Merci de réessayer ultérieurement
Le mail de partage a bien été envoyé.

Add to Compare

M2 Large Scale Accelerators and Lasers - Erasmus Mundus Lascala





Master's degree

Specialisation Physique fondamentale et applications

Enrolment type

Full-time academic programmes

Language(s) of instruction

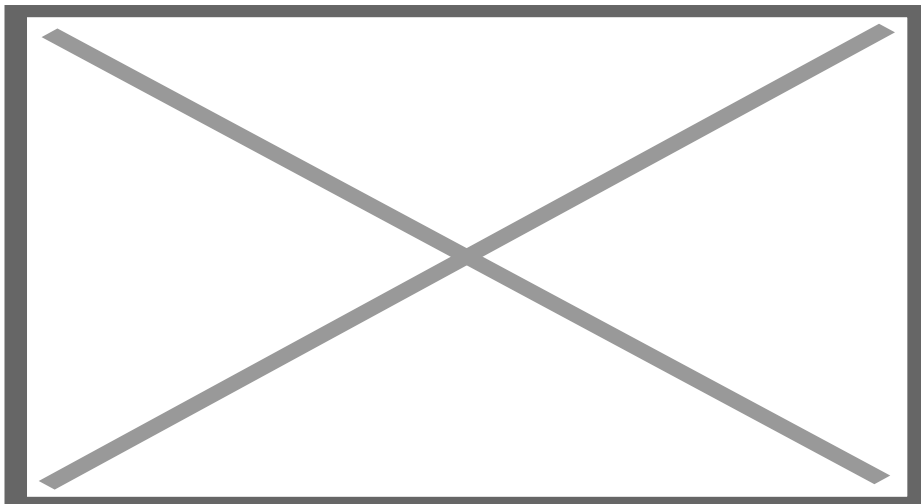
English

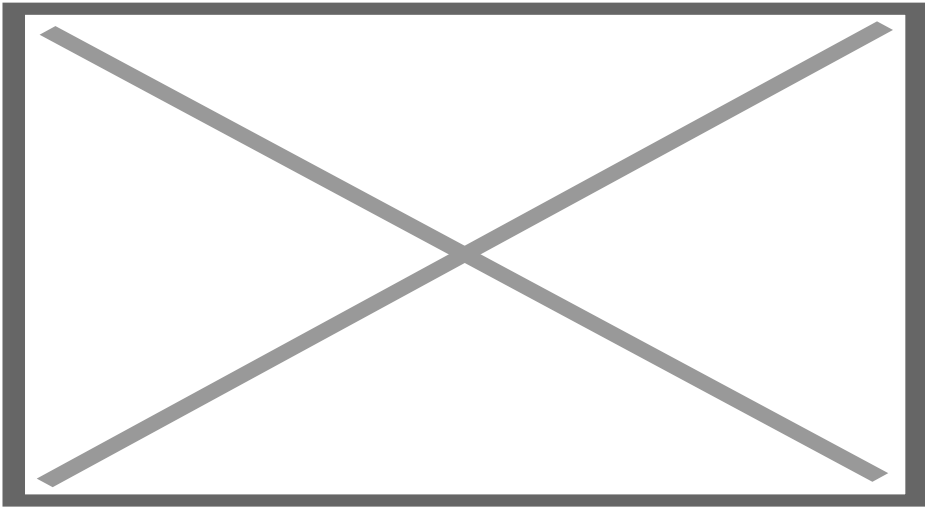
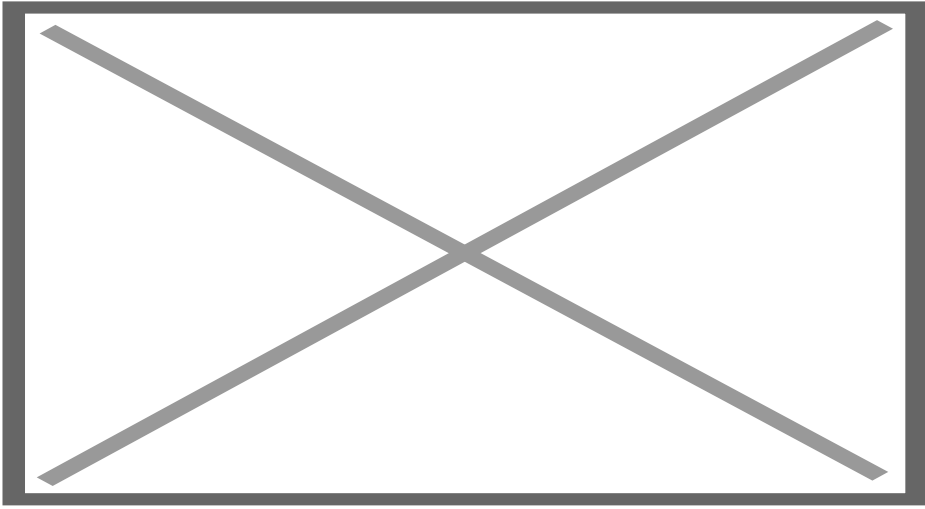
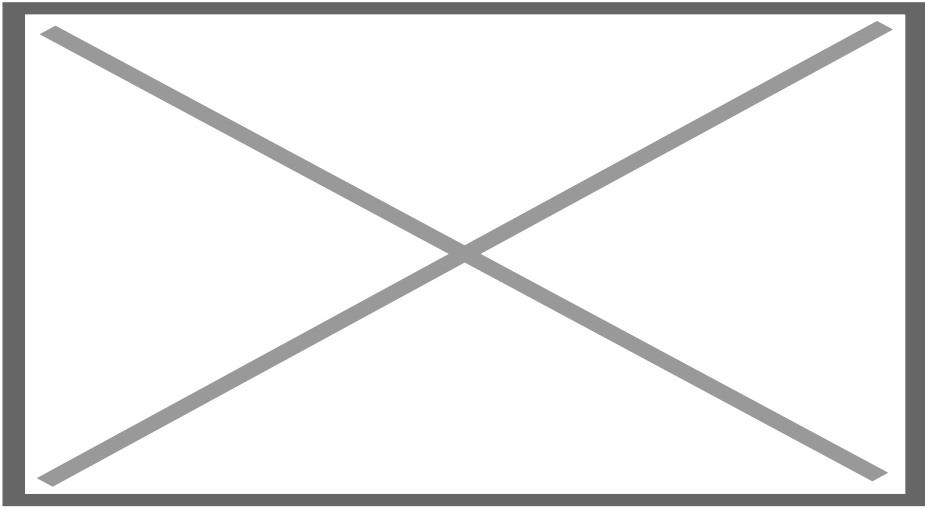
LASCALA is an Erasmus Mundus Master programme run in partnership with Sapienza Università di Roma, Lund University and Salamanca University dedicated to large-scale high-intensity lasers, accelerators and gravitational wave detectors. This programme leads to joint degrees from the partner universities and, for Paris Saclay, is based on the M1 General Physics and M2 GI/PLATO programmes.

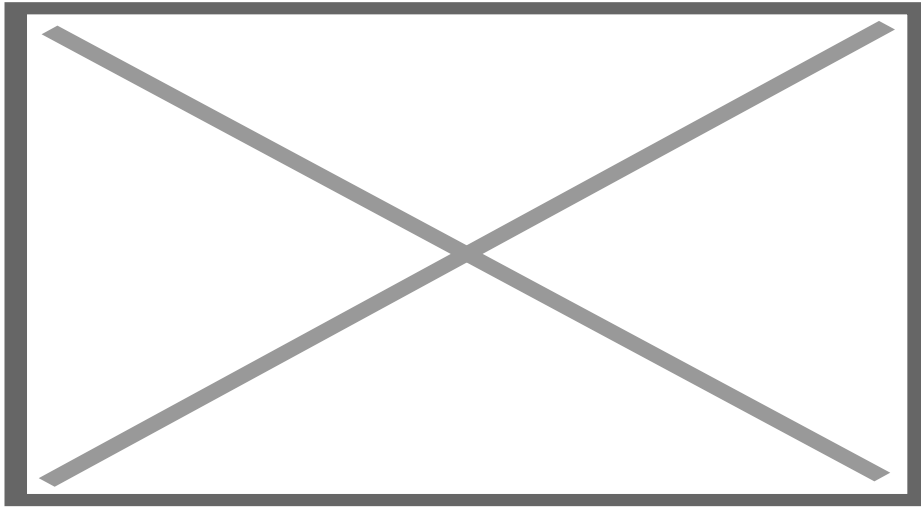
Students selected for the M1 programme choose to spend their first semester at Paris Saclay or Salamanca. For the second semester, they choose between Rome (focusing on accelerators and gravitational wave detectors) or Lund (focusing on lasers and femtosecond or attosecond physics). The third semester is spent at Paris Saclay with M2 GI/PLATO students. After a core curriculum and several immersion sessions on the major facilities at the Saclay plateau, students gradually specialise in one of three areas: intense lasers, accelerators, or gravitational wave detectors. The semester ends with a thematic winter school. The Master's programme concludes with a 5-month Master's thesis in a research laboratory or a company in the field.

[Télécharger la fiche détaillée](#)

[Apply Now](#)







■ ■

Information

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

Présentation

Skills

Students acquire solid knowledge of accelerator physics, intense lasers and their interaction with plasmas, as well as gravitational wave detection. Cross-disciplinary skills are also taught, such as cross-disciplinary technologies and large project management. Students also acquire experimental skills, the ability to work in groups and, of course, to work and express themselves in a highly international context.

Objectives

The aim of this programme is to train future researchers, engineers and project managers who will contribute to the European research landscape in the field of large-scale equipment for intense laser physics, accelerators and gravitational wave detectors. The programme is designed to be cross-disciplinary, international, fundamental and applied, with a specific focus on physical instrumentation. Most graduates go on to pursue doctoral studies in major European research laboratories.

Débouchés

Further Study Opportunities

R&D researcher or data modelling and analysis expert in leading-edge companies or laboratories.
Data Scientist, Data Analyst, Ingénieur·e en Machine Learning dans des secteurs innovants (tech, finance, santé, énergie, etc.) ;
PhD

Calendar

Start of programme (indicative date)

01/09/2026

End of programme (indicative date)

01/09/2027

Admission

Admission Route

Physics

Capacity

Available Places

25

Target Audience and Entry Requirements

Students recruited for this programme are enrolled in the first year of a Master's degree (M1 level) for a period of two years. The target audience is students who are comfortable with the international context of research, the use of English in teaching, and who have a solid foundation (Bachelor's degree level) in fundamental or applied physics.

Période(s) de candidature

Inception Platform

From 30/01/2026 to 25/04/2026

From 27/04/2026 to 10/07/2026

Supporting documents

Compulsory supporting documents

Motivation letter.

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

Certificate of English level.

Curriculum Vitae.

Additional supporting documents

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

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

Compulsory courses - Paris-Saclay University

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d
Méthodes numériques et simulations	3	Semestre 1	20	10					

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

Méthodes numériques et simulations

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 20

Directed study: 10

Language(s) of instruction

Anglais

Remote teaching

non

Prerequisites

Master M1 de Physique et Ecoles d'Ingénieurs

Type of assessment

Evaluation Continue non Intégrale

[Projets et organisation des grandes installations](#)

2	Semestre 1	20	10
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Projets et organisation des grandes installations

ECTS : 2

Semester: Semestre 1

Detail

Lecture: 20

Directed study: 10

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[Physique et technologies transversales](#)

3	Semestre 1	20	10
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Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	d
----------	------	----------	---------	----------------	-----------------	------------------------	-------------------------	--------------------------------	---

Physique et technologies transversales

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 20

Directed study: 10

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[Manipulations](#)

[auprès des](#)

[grandes](#)

[installations](#)

4

Semestre

1

36

Manipulations auprès des grandes installations

ECTS : 4

Semester: Semestre 1

Detail

Practical study : 36

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

[TOSCA](#)

[summer](#)

[school](#)

3

Semestre

1

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

■

TOSCA summer school

ECTS : 3

Semester: Semestre 1

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

[free option](#) 2 Semestre
1

■

free option

ECTS : 2

Semester: Semestre 1

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

optional path 1 lasers and optical metrology

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

[introduction
to intense
laser
sources](#)

3 Semestre
1 12 12

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

introduction to intense laser sources

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Terminale

[advanced](#)

[femto and](#)

[attosecond](#)

[metrology](#)



advanced femto and attosecond metrology

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Terminale

[femtosecond](#)

[laser plasma](#)

[interaction,](#)

[compact](#)

[acceleration](#)



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

femtosecond laser plasma interaction, compact acceleration

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Terminale

[optical radiation sources](#)

3	Semestre 1	12	12
---	------------	----	----

optical radiation sources

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Terminale

[joint winter school on laser plasma interaction](#)

3	Semestre 1
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Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis
----------	------	----------	---------	----------------	-----------------	------------------------	-------------------------	--------------------------------	-----

joint winter school on laser plasma interaction

ECTS : 3

Semester: Semestre 1

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Terminale

optional path 2: Accelerators

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	di
Physique des accélérateurs	3	Semestre 1	20	10					c

Physique des accélérateurs

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 20

Directed study: 10

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Détection, mesure	3	Semestre 1	20	10
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Détection, mesure

ECTS : 3
Semester: Semestre 1
Detail
Lecture: 20
Directed study: 10
Language(s) of instruction
Anglais
Remote teaching
non
Type of assessment
Evaluation Continue non Intégrale
[Accélérateurs avancés](#) 3 Semestre 1 20 10



Accélérateurs avancés

ECTS : 3
Semester: Semestre 1
Detail
Lecture: 20
Directed study: 10
Language(s) of instruction
Anglais
Remote teaching
non
Type of assessment
Evaluation Continue non Intégrale
[JUAS winter school](#) 3 Semestre 1



JUAS winter school

ECTS : 3
Semester: Semestre 1
Language(s) of instruction
Anglais
Remote teaching
non
Type of assessment
Détail renseigné au niveau Élément Constitutif

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	di
sources of optical radiation	3	Semestre 1	12	12					c
■									

sources of optical radiation

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

optional path 3: gravitational wave detectors

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis
elements of general relativity and cosmology	3	Semestre 1	12	12					c
■									

elements of general relativity and cosmology

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis
quantum optics for gravitational wave detection	3	Semestre 1	12	12					c
■									

quantum optics for gravitational wave detection

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

[winter school on advanced gravitational wave data analysis](#)

■

winter school on advanced gravitational wave data analysis

ECTS : 3

Semester: Semestre 1

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
metrology for advanced femtosecond and attosecond sources	3	Annualisé	12	12					
■									

metrology for advanced femtosecond and attosecond sources

ECTS : 3

Semester: Annualisé

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

sources of radiations	3	Semestre 1	12	12
■				

sources of radiations

ECTS : 3

Semester: Semestre 1

Detail

Lecture: 12

Directed study: 12

Language(s) of instruction

Anglais

Remote teaching

non

Type of assessment

Détail renseigné au niveau Élément Constitutif

Internship and master thesis

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

[Internship](#)

[and](#)

[master](#)

[thesis](#)

30

Semestre

2



Internship and master thesis

ECTS : 30

Semester: Semestre 2

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

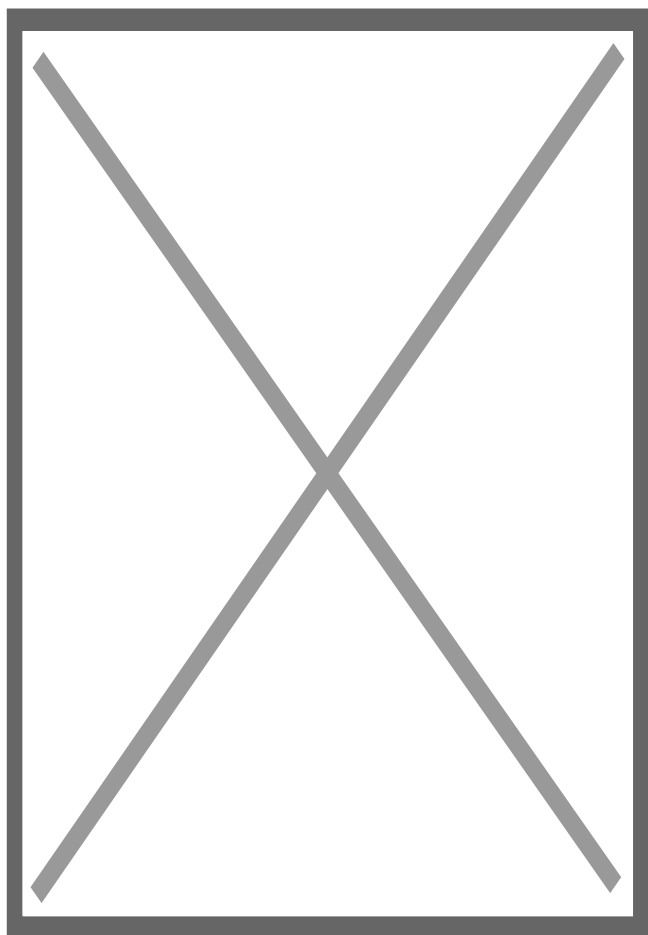
Evaluation Continue non Intégrale

Academic Partner(s)

Sapienza Università di Roma, Lund University, Salamanca University, Paris Saclay University

Training campus

Javascript est requis pour visualiser cette carte.



Orsay Bures

Orsay / Bures-sur-Yvette

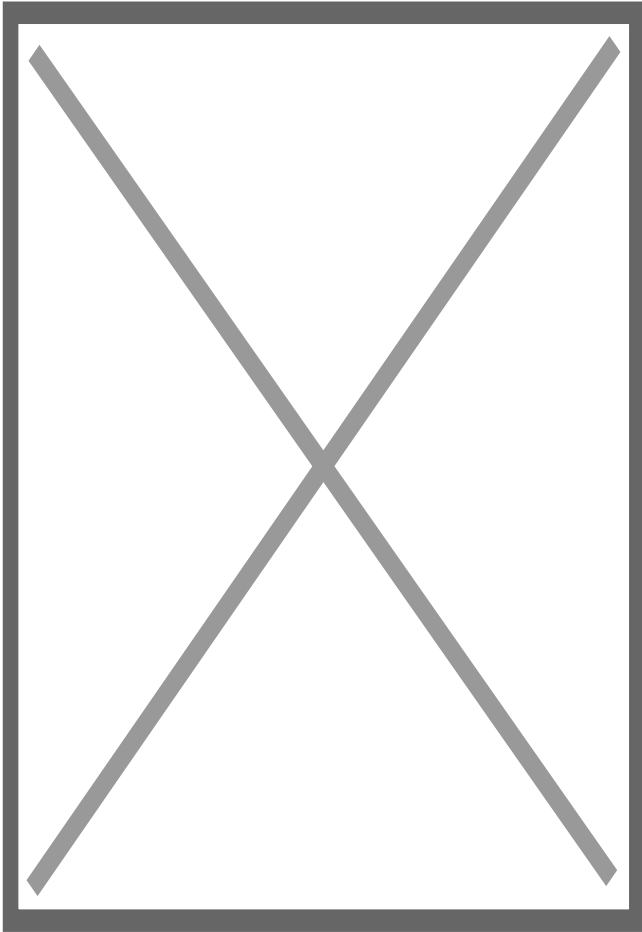
Bus 4607, 4626

RER B Orsay ville ou Bures-sur-Yvette

[Voir](#)

Library

Community center



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

- **Sophie Kazamias**

<http://www.universite-paris-saclay.fr/formation/master/physique-fondamentale-et-applications/m2-large-scale-accelerators-and-lasers-erasmus-mundus-lascala>