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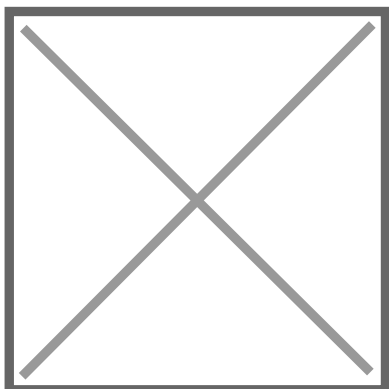
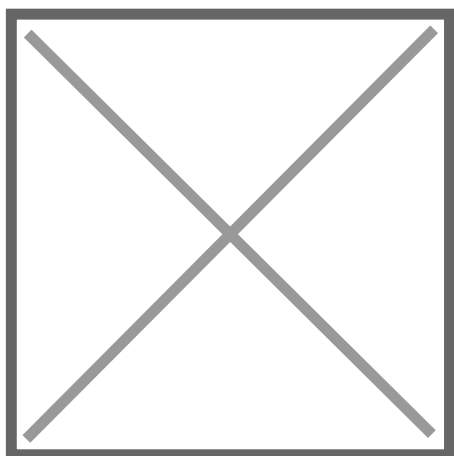
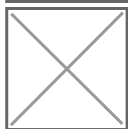
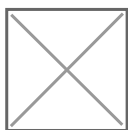
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Add to Compare

M1 Energy - International track



Master's degree

Specialisation Energy

Language(s) of instruction

English

The Energy Master's program is supported by an exceptional research ecosystem on the Plateau de Saclay, where its key themes — innovative materials, new energy technologies, networks, and sustainable mobility

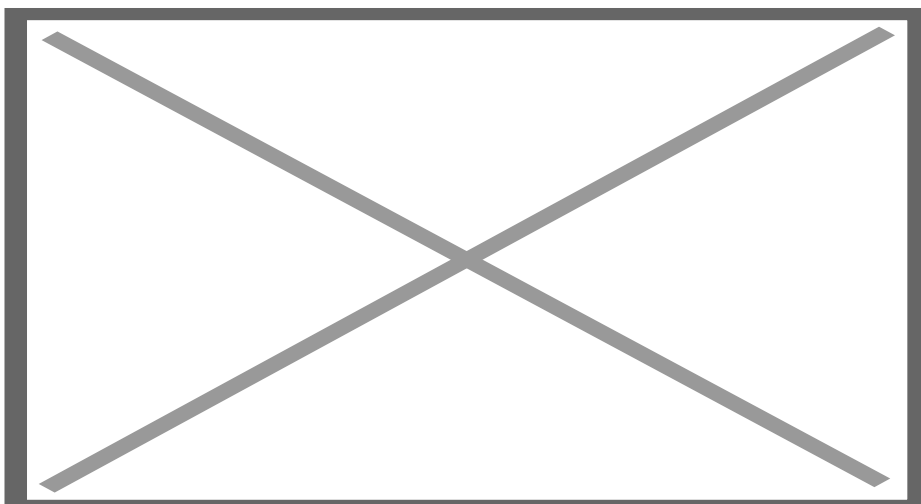
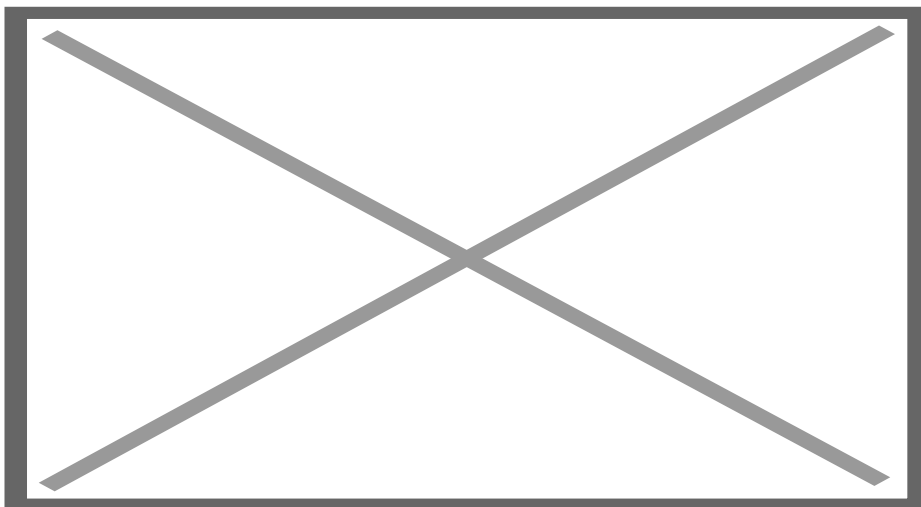
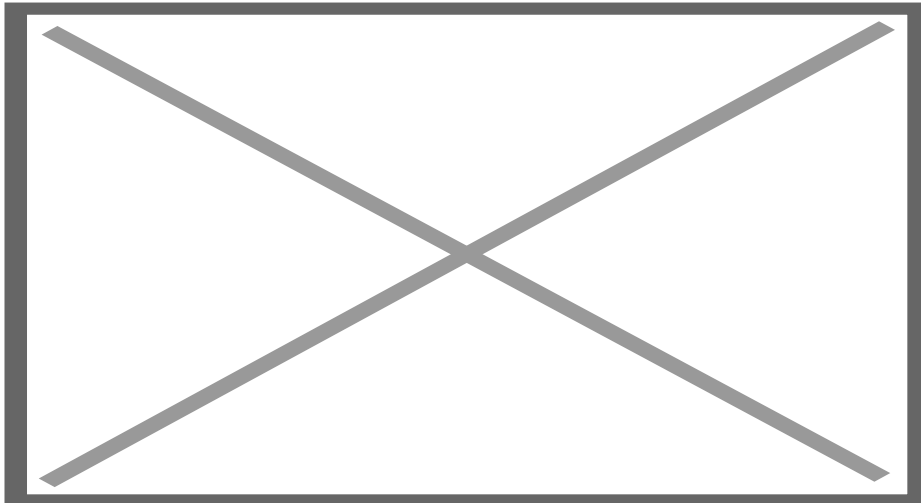
— are central to the work of the IPVF and VEDECOM institutes, as well as numerous academic (CNRS, CEA) and industrial (Renault, PSA, Thales, Safran, EDF) laboratories.

One of the major contemporary challenges is meeting the growing global energy demand while reducing greenhouse gas and pollutant emissions. Today, nearly 80% of the energy consumed in France (and more than 85% in developed countries) still comes from fossil fuels, but the share of renewable and nuclear energy is expected to increase significantly in the coming years.

This transition paves the way for major innovation challenges in the production of cleaner and more efficient energy, as well as in the development of high-performance and sustainable distribution systems.

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Information

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

Présentation

Objectives

One of the world's most pressing challenges is to meet the fast-growing energy demand while at the same time reducing greenhouse gases and pollutant emissions. Today, and for the foreseeable future, 80% of the energy consumed in France comes from fossil fuels (over 85% in developed countries, and almost 100% in developing countries), but the production of renewable and nuclear energy is bound to increase sharply. This situation opens exciting new challenges in developing cleaner and more efficient energy production methods, as well as more effective energy distribution systems. The general objectives of the M1 are to:

- provide the scientific background required in the field of energy. In particular in transport phenomena, chemical engineering, materials, reactive media, treatment and conversion of electrical energy;
- give, through the core curriculum, an introduction to great energy challenges;
- give a first experience of numerical methods required to solve complex problems.

Admission

Admission Route

Physics, Chemistry
Engineering Sciences

Capacity

Available Places

20

Target Audience and Entry Requirements

Good background in physics, mechanical engineering, chemical engineering or electrical engineering and strong skills in mathematics. Bachelor level or equivalent.

Période(s) de candidature

Inception Platform

From 15/01/2026 to 15/06/2026

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 (compulsory for non-English speakers).

Curriculum Vitae.

Additional supporting documents

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

Programme

Languages S2

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning courses
French language 2	2	Semestre 2	10	10					
■									

French language 2

ECTS : 2

Semester: Semestre 2

Detail

Lecture: 10

Directed study: 10

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Minimum B1 level in French

Type of assessment

Evaluation Continue non Intégrale

[English](#)

[language 2](#)

[2](#)

■

Semestre 2
10 10

English language 2

ECTS : 2

Semester: Semestre 2

Detail

Lecture: 10

Directed study: 10

Language(s) of instruction

Français

Remote teaching

non

Type of assessment

Evaluation Continue non Intégrale

Languages S1

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning courses
French language 1	2	Semestre 1	10	10					

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

■

French language 1

ECTS : 2

Semester: Semestre 1

Detail

Lecture: 10

Directed study: 10

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

B1 level in French

Type of assessment

Evaluation Continue non Intégrale

[English](#)

language	2	Semestre	10	10
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[1](#)

■

English language 1

ECTS : 2

Semester: Semestre 1

Detail

Lecture: 10

Directed study: 10

Language(s) of instruction

Anglais

Remote teaching

non

Prerequisites

English B2

Type of assessment

Evaluation Continue non Intégrale

Common base S2

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Economics	4	Semestre 2	16.5	16.5				

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

Economics

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Common economics course

Type of assessment

Evaluation Continue non Intégrale

[Chemical Engineering](#)

4

Semestre
2

16.5

16.5

■

Chemical Engineering

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

None

Type of assessment

Evaluation Continue non Intégrale

[Thermodynamics](#)

4

Semestre
2

12

12

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

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 12

Directed study: 12

Tutored project 9

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

None

Type of assessment

Evaluation Continue non Intégrale

[Research project](#) 6 Semestre 2



Research project

ECTS : 6

Semester: Semestre 2

Detail

Tutored project 120

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

None

Type of assessment

Evaluation Continue non Intégrale

[Materials](#) 4 Semestre 2 16.5 16.5

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

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

None

Type of assessment

Evaluation Continue non Intégrale

[Renewable](#)

4

Semestre

2

15

18

[Energy](#)

■

Renewable Energy

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 15

Practical study : 18

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Electrical energy

Type of assessment

Evaluation Continue non Intégrale

[Energy](#)

4

Semestre

2

16.5

16.5

[Conversion](#)

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

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Electric Energy

Type of assessment

Evaluation Continue non Intégrale

[Simulations and](#)

[MultiPhysics](#)

[Coupling](#)

4	Semestre 2	13.5	13.5
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Simulations and MultiPhysics Coupling

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 13.5

Directed study: 13.5

Tutored project 6

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Partial Differential Equations

Type of assessment

Evaluation Continue non Intégrale

[Nuclear](#)

[Engineering](#)

4	Semestre 2	16.5	16.5
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Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
■								

Nuclear Engineering

ECTS : 4

Semester: Semestre 2

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Basic notions of physics and chemistry

Type of assessment

Evaluation Continue non Intégrale

Common base S1

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	directed study/practical class
Heat Transfer	4	Semestre 1	15	18					
■									

Heat Transfer

ECTS : 4

Semester: Semestre 1

Detail

Lecture: 15

Directed study: 18

Language(s) of instruction

Anglais

Remote teaching

non

Prerequisites

Transport Phenomena

Type of assessment

Evaluation Continue non Intégrale

Transport Phenomena	4	Semestre 1	16.5	16.5
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Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
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Transport Phenomena

ECTS : 4

Semester: Semestre 1

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

Basics of mathematics and thermodynamics
(studied during the first 2
university years).

Type of assessment

Evaluation Continue non Intégrale

Reactive Media	4	Semestre 1	16.5	16.5
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■

Reactive Media

ECTS : 4

Semester: Semestre 1

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Anglais

Remote teaching

non

Prerequisites

Transport Phenomena

Type of assessment

Evaluation Continue non Intégrale

Fluid mechanics	4	Semestre 1	16.5	16.5
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Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distance learning
----------	------	----------	---------	----------------	-----------------	------------------------	-------------------------	--------------------------------	-------------------

■

Fluid mechanics

ECTS : 4

Semester: Semestre 1

Detail

Lecture: 16.5

Directed study: 16.5

Language(s) of instruction

Anglais

Remote teaching

non

Prerequisites

Transport Phenomena

Type of assessment

Evaluation Continue non Intégrale

Electrical Energy	4	Semestre 1	15	18
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■

Electrical Energy

ECTS : 4

Semester: Semestre 1

Detail

Lecture: 15

Directed study: 18

Language(s) of instruction

Français

Remote teaching

non

Prerequisites

None.

Type of assessment

Evaluation Continue non Intégrale

Laboratory classes	6	Semestre 1	48
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Laboratory classes

ECTS : 6

Semester: Semestre 1

Detail

Practical study : 48

Language(s) of instruction

Anglais

Remote teaching

non

Prerequisites

None.

Type of assessment

Evaluation Continue non Intégrale

Teaching Location(s)

GIF SUR YVETTE

Contact

- **Gabi-Daniel STANCU**
CentraleSupélec
- **CentraleSupélec SUPPORT SCOLARITE**
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<http://www.universite-paris-saclay.fr/formation/master/energie/m1-energy-international-track>