Université Paris-Saclay

Share

Email destinataire :

Vous devez renseigner un email valide

Envoyer

Une erreur est survenue. Merci de réessayer ultérieurement

Le mail de partage a bien été envoyé.

Add to Compare

# M1 Ingénierie des systèmes complexes - Voie recherche

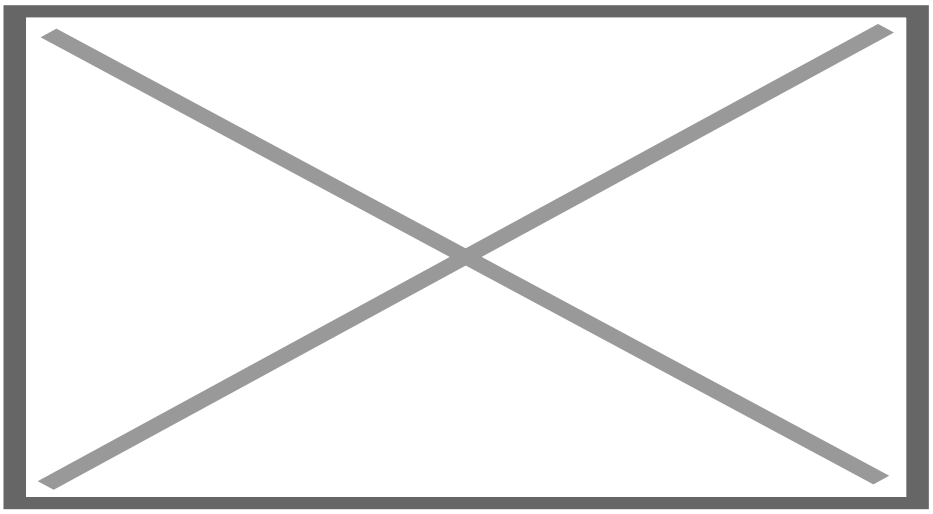
Master's degree
Specialisation Industrial Engineering
Enrolment type
Formation initiale
Language(s) of instruction
English
French

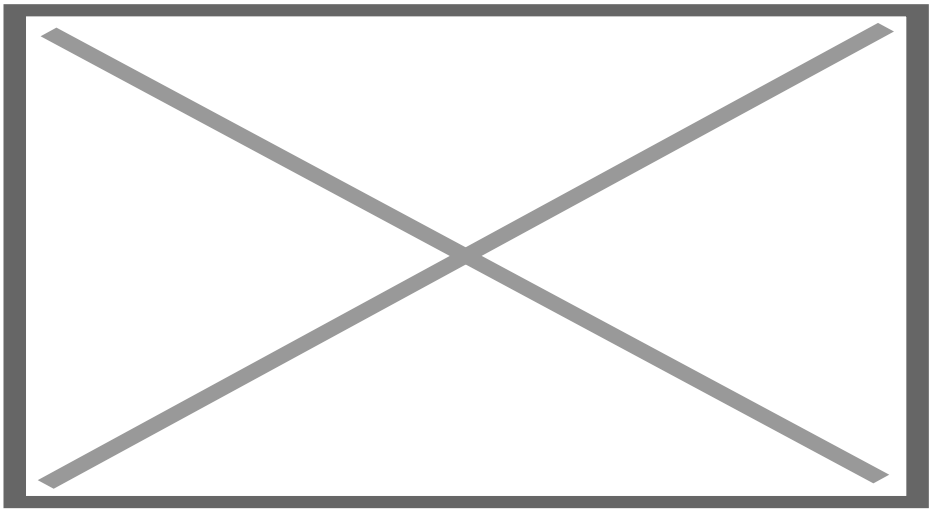
The M1 Complex Systems Engineering – Research track provides training in the methods and tools used to model and analyze socio-technical and economic systems.

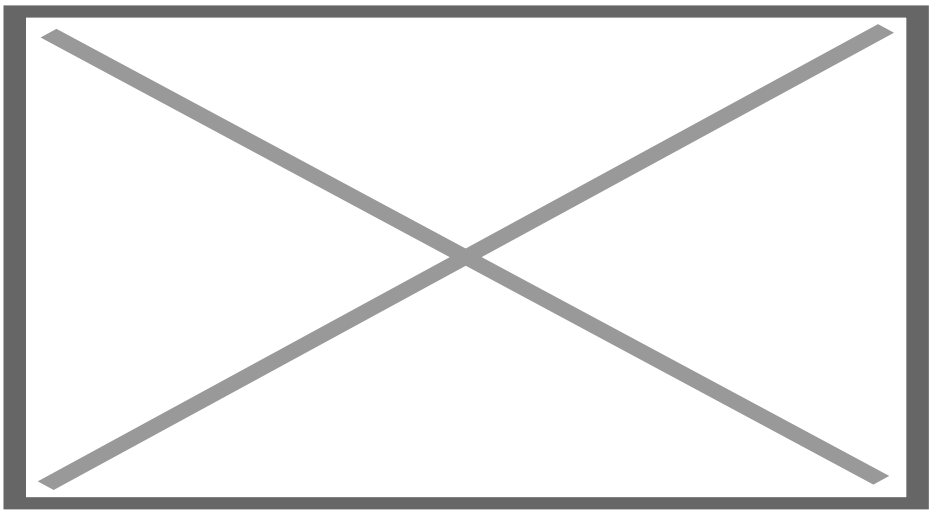
It prepares students for the M2 Complex Systems Engineering program, which leads to academic or industrial R&D careers, and is offered in conjunction with the first- and second-year engineering curriculum at CentraleSupélec.

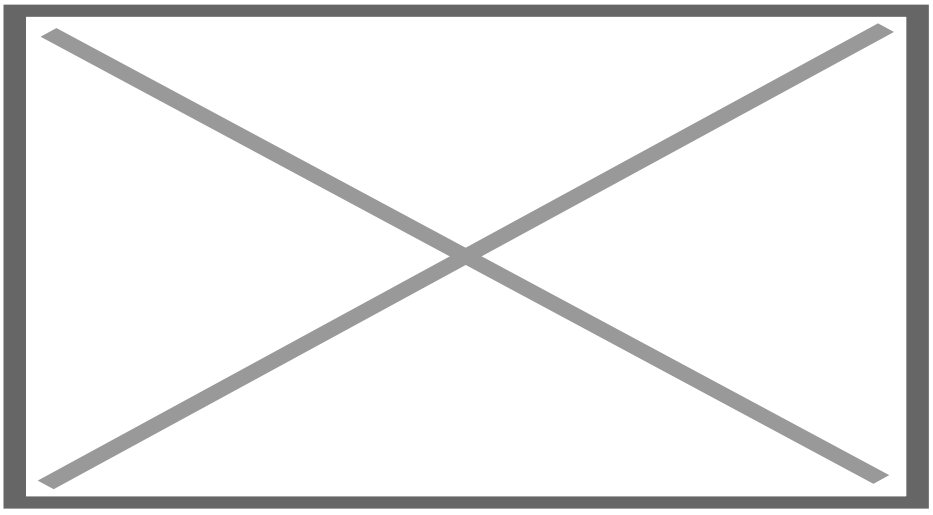
This is an introductory research program designed to provide students with the fundamental methods and tools of Complex Systems Engineering, enabling them to model, analyze, and simulate socio-technical and economic systems.

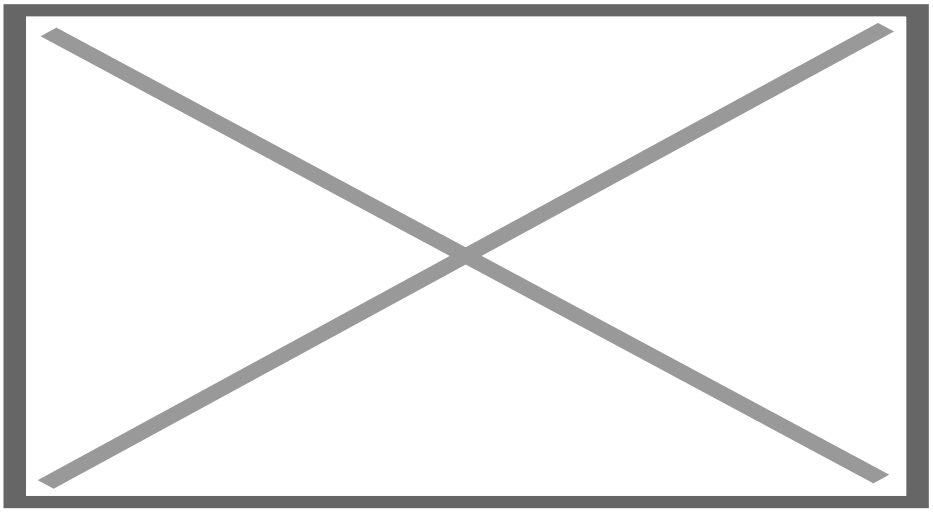
Télécharger la fiche détaillée
Apply Now











# Information

- Overview
- Application requirements
- Schedule

Présentation

# Skills

Be able to identify a complex system (industrial, technological, or socio-economic) and define its scope.

# Objectives

This is an introductory research program designed to provide students with the fundamental methods and tools of Complex Systems Engineering, enabling them to model, analyze, and simulate socio-technical and economic systems.

The concepts and approaches introduced in the first-year Master's program (M1) are further developed in the second-year program (M2), which prepares students for both academic and industrial careers, particularly within industrial R&D departments.

The M1 Complex Systems Engineering – Research track lies at the crossroads of several disciplines:

- Applied Mathematics
- Control Engineering (Automation)
- Industrial Computing
- Industrial and Mechanical Engineering
- Decision Support and Operations Research

The content of the M1 program is organized around several key principles:

- Students should acquire a cross-disciplinary understanding of the major issues and challenges related to the design, production, and distribution processes of complex industrial systems.
- Students should gain familiarity with various modeling, design, and management techniques for complex industrial systems.
- Students should master the mathematical and computational tools required for the formalization and resolution of typical problems encountered in Complex Systems Engineering.
- Students should be introduced to research practices in a spirit of openness and international collaboration.

Admission

# Admission Route

Computer Science
Mathematics
Engineering Sciences

# Capacity

### Available Places

15

# Target Audience and Entry Requirements

The Master’s program is intended for students who hold a Bachelor’s degree or have completed the first year of a general engineering school or an equivalent program in science and technology.

The first-year Master’s program (M1) requires a strong capacity for abstraction as well as solid scientific and engineering skills.

Applications are assessed based on the student’s academic background, the quality of their results, and their career objectives.

The M1 program is highly open to applications from French-speaking international students. A good command of English is essential (a TOEIC or TOEFL score is required).

# Période(s) de candidature

Inception Platform

From 30/01/2026 to 30/06/2026

# Supporting documents

### Compulsory supporting documents

Motivation letter.

Letter of recommendation or internship evaluation.

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

Curriculum Vitae.

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

## Additional supporting documents

Certificate of English level (compulsory for non-English speakers).

Le niveau d'anglais recommandé doit être au moins équivalent au B1 dans le CECRL

Certificate of French (compulsory for non-French speakers).

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

| Subjects | ECTS | Semester | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | dista learn cou |
|---|---|---|---|---|---|---|---|---|---|
| Stage en entreprise ou laboratoire de recherche (4mois) | 15 | Semestre 2 | | | | | | | |

Charger le détail

| Subjects | ECTS | Semester | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practic class |
|---|---|---|---|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Organisation et gestion des données métier | 5 | Semestre 1 | |
| Charger le détail | | | |
| Méthodologie de la conception et innovation | 5 | Semestre 1 | |
| Charger le détail | | | |
| Ingénierie des systèmes | 5 | Semestre 1 | |
| Charger le détail | | | |
| Performance industrielle | 5 | Annualisé | |
| Charger le détail | | | |
| Dimensionnement et simulation des systèmes de production | 5 | Semestre 1 | |
| Charger le détail | | | |
| Sécurité des hommes – ergonomie | 5 | Annualisé | |
| Charger le détail | | | |

| Subjects | ECTS | Semester | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | dis lea co |
|---|---|---|---|---|---|---|---|---|---|
| Evaluation de performance de systèmes de production | 3 | Semestre 2 | 10 | 8 | 12 | | | | |
| Charger le détail | | | | | | | | | |

| Subjects | ECTS | Semester | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | di le |
|---|---|---|---|---|---|---|---|---|---|
| ST7 - Circular Economy | 12 | Semester 2 | 30 | | | | | | |
| Charger le détail | | | | | | | | | |

| Subjects | ECTS | Semester | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | di le |
|---|---|---|---|---|---|---|---|---|---|
| S7 - Absolute Sustainability of Territories<br>Charger le détail | 12 | Semester 2 | 30 | | | | | | |
| ST7 - Optimisation de système de transport passager<br>Charger le détail | 12 | Annualisé | 30 | | | | | | |
| ST7 – Simulation de flux industriels<br>Charger le détail | 12 | Semestre 2 | 30 | | | | | | |

# Teaching Location(s)

GIF SUR YVETTE

# Contact

- **CentraleSupélec SUPPORT SCOLARITE**

  Support scolarité
- **Ghada Bouillass**

  CentraleSupelec

http://www.universite-paris-saclay.fr/formation/master/ingenierie-des-systemes-complexes/m1-ingenierie-des-systemes-complexes-voie-recherche