Université Paris-Saclay

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M2 Advanced Manufacturing and Smart Systems

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

The AMSS track (Advanced Manufacturing and Smart Systems) provides training in intelligent production systems, digital twins, and advanced simulation approaches applied to the factory of the future.

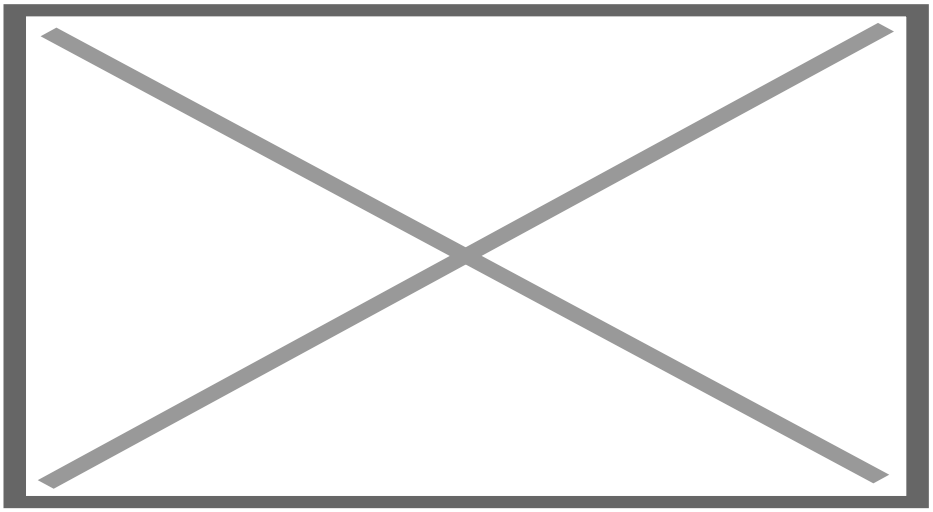
The AMSS program combines a common core focused on applied science courses and projects with two specialization tracks (1 track to choose from) :

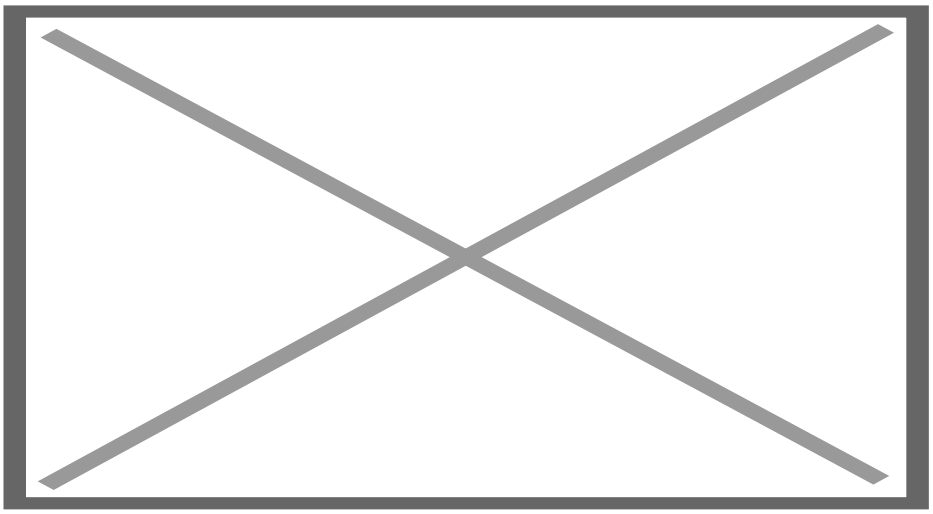
- **IN2P** (*Numerical Engineering for Product and Process*), focused on multiphysics simulation, additive manufacturing, and convergent manufacturing.
- **CSC** (*Complex Systems Design*), centered on the modeling of cyber-physical systems, systems engineering, and discrete-event simulation.

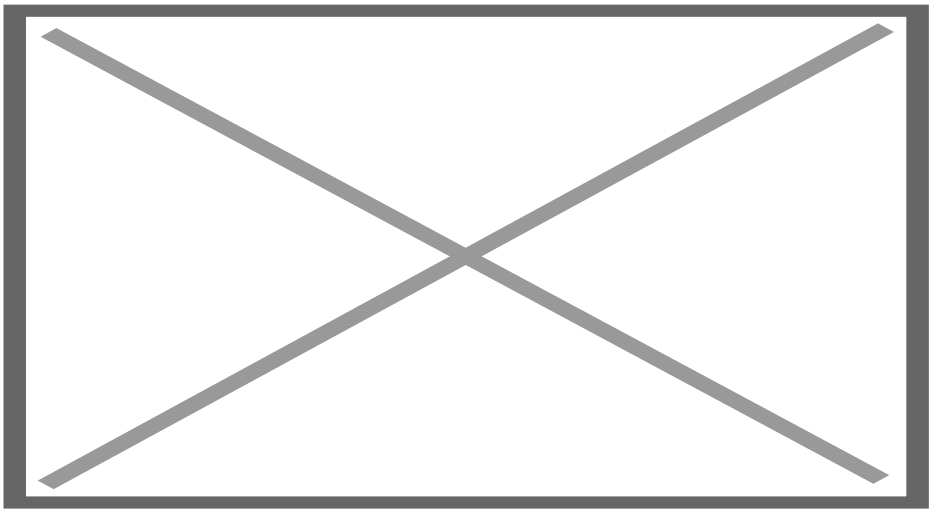
The first semester alternates lectures, tutorials, practicals, and projects, while the second semester is dedicated to a research internship or R&D project in a laboratory or industrial environment.

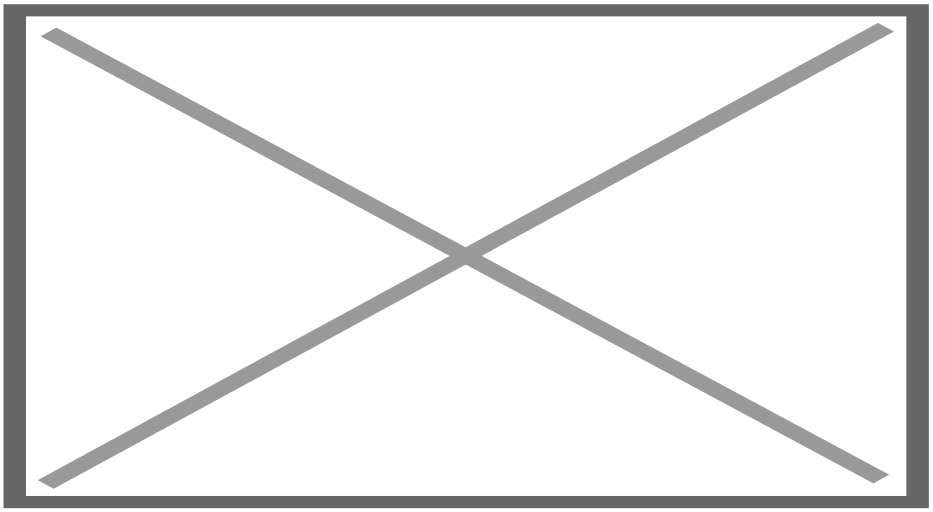
More information here.

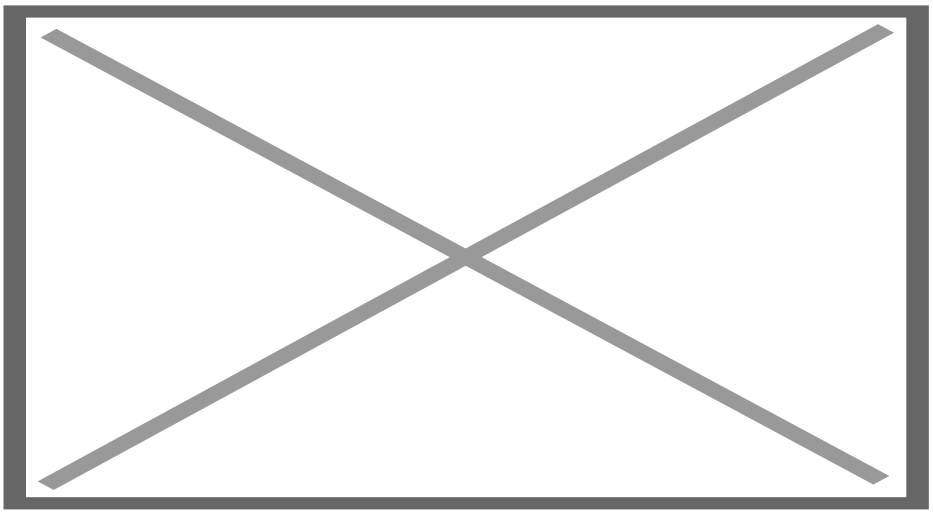
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

- Design and deployment of digital twins for products and processes.
- Multiphysics and discrete-event simulation for complex systems analysis.
- Optimization and control of advanced processes (including additive manufacturing and hybrid processes).
- Mastery of numerical engineering tools for innovation and industrial transfer.

Objectives

The Advanced Manufacturing and Smart Systems Master program meets a real today industrial need in terms of engineering and research, combining major themes of the industry of the future, in particular the optimization of the manufacturing processes, and of the automatic control of critical systems. This master's program has multiple objectives:

- Acquire the scientific, theoretical, and practical knowledge necessary for future research engineers in mechanical engineering and/or automation.
- Acquire and learn how to apply cross-disciplinary skills enabling participation in research and development projects (analysis of articles and patents, development of computer prototypes, oral communication, report writing, etc.).
- Develop expertise in multiphysics modeling and numerical simulation for advanced processes.
- Train students in the use of digital twins for the design, monitoring, and optimization of production systems.
- Prepare for industrial challenges in the factory of the future, integrating cyber-physical systems, artificial intelligence, and multi-scale optimization.

Calendar

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

Capacity

Available Places

24

Target Audience and Entry Requirements

- Students with a Master 1 (or equivalent) background in mechanical engineering, industrial engineering, control/automation, computer science, or related fields.
- Graduates from engineering schools aiming to specialize in digital engineering, advanced processes, and smart systems.
- The program requires strong skills in applied mathematics and, depending on the chosen track: multiphysics modeling of mechanical systems and manufacturing processes, or the modeling and control of linear and discrete-event systems.
- Interest in research and innovation in intelligent systems, advanced manufacturing, and digital engineering.
- Good command of English.

Période(s) de candidature

Inception Platform

From 01/02/2026 to 30/06/2026

Supporting documents

Compulsory supporting documents

Rank of previous year and size of the promotion.

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.

Additional supporting documents

Certificate of English level.

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

B2 level required as a minimum

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

Every documents and achievements which could support the candidacy (report, case study, partnership prospectus, event creation, etc.).

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	dist lear co

Tronc commun S1	0	5	22,5	7,5
Tronc commun S2 : Stage de recherche	0	1	22,5	7,5
Cursus IN2P : Ingénierie Numérique Produit Process	0	5	22,5	7,5

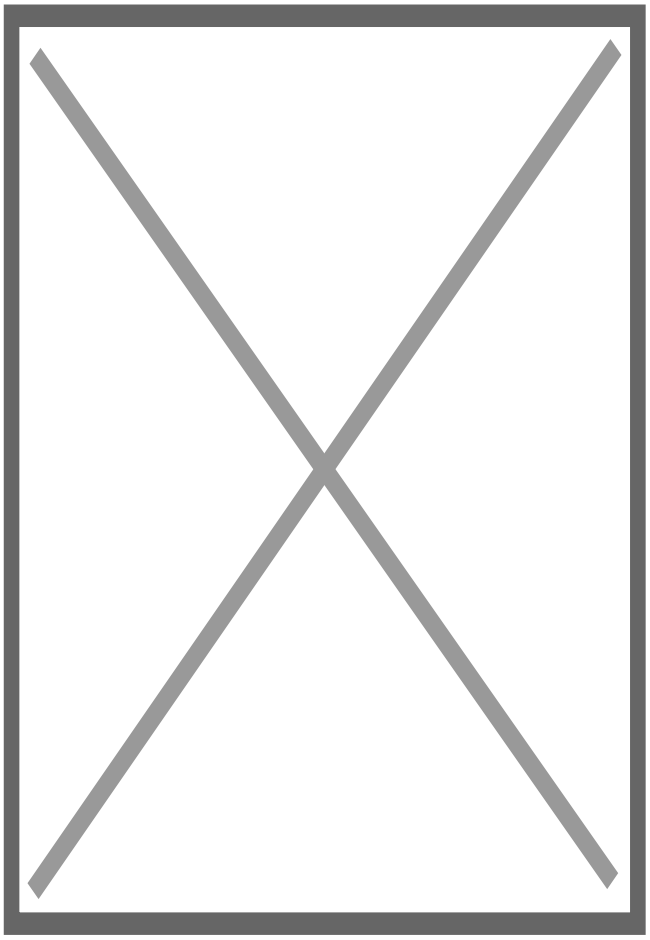
Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dist lea co
Tronc commun S1	0	5	22,5	7,5					
Tronc commun S2 : Stage de recherche	0	1	22,5	7,5					
Cursus CSC : Commande des Systèmes Critiques	0	5	22,5	7,5					

Teaching Location(s)

GIF SUR YVETTE

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

- **Kevin GODINEAU**

  Enseignant-Chercheur

http://www.universite-paris-saclay.fr/formation/master/mecanique/m2-advanced-manufacturing-and-smart-systems