Université Paris-Saclay

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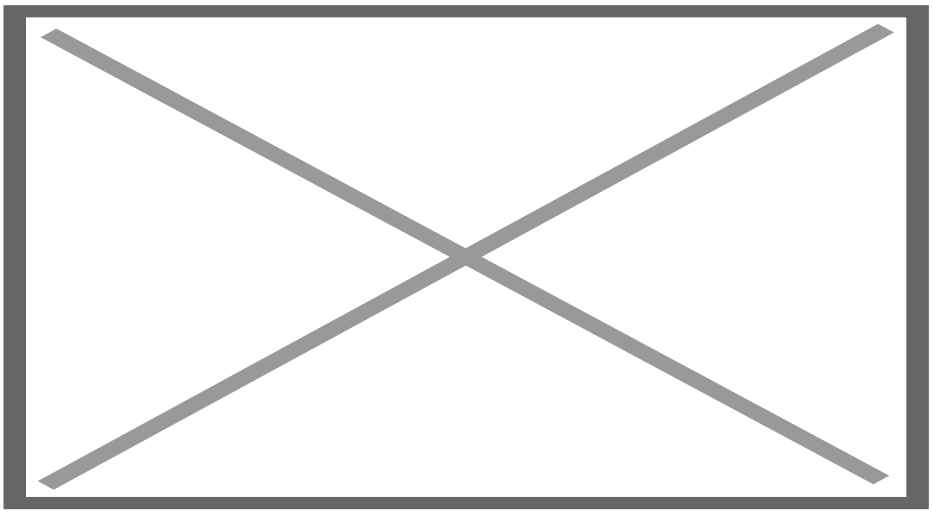
M2 Mechanics of mAterials, damaGe, fracture and multIphySics (MAGIS)

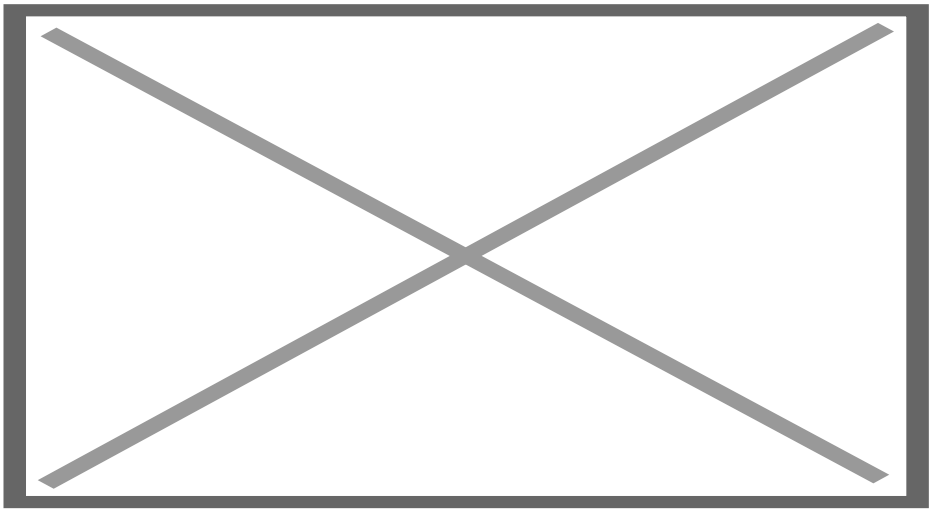
Master's degree
Specialisation Mechanics
Enrolment type
Formation initiale
Language(s) of instruction
English

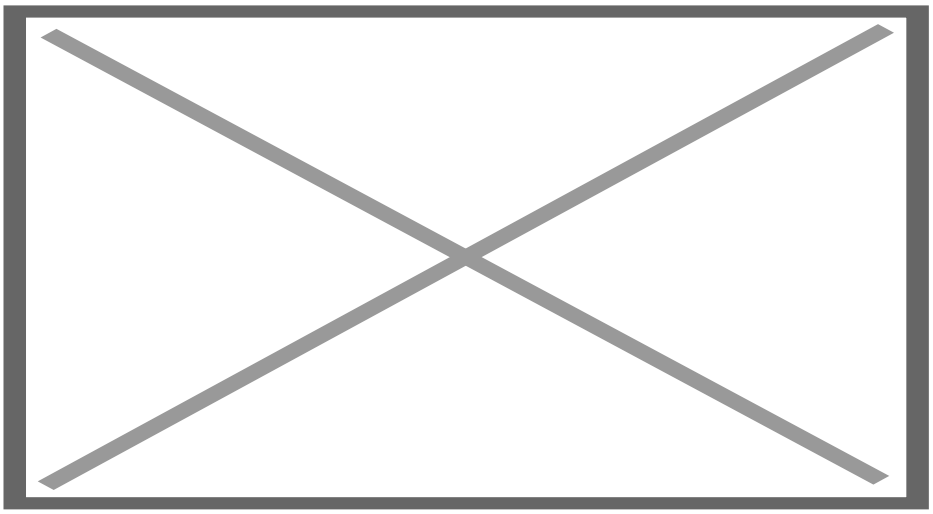
The MAGIS Master offers high-level international training in mechanics of materials. It aims to train students in tools to understand, build and apply models linking materials, their microstructure, phase changes, damage, and cracking to their mechanical properties, whether coupled with other physics or not, for advanced industrial applications.

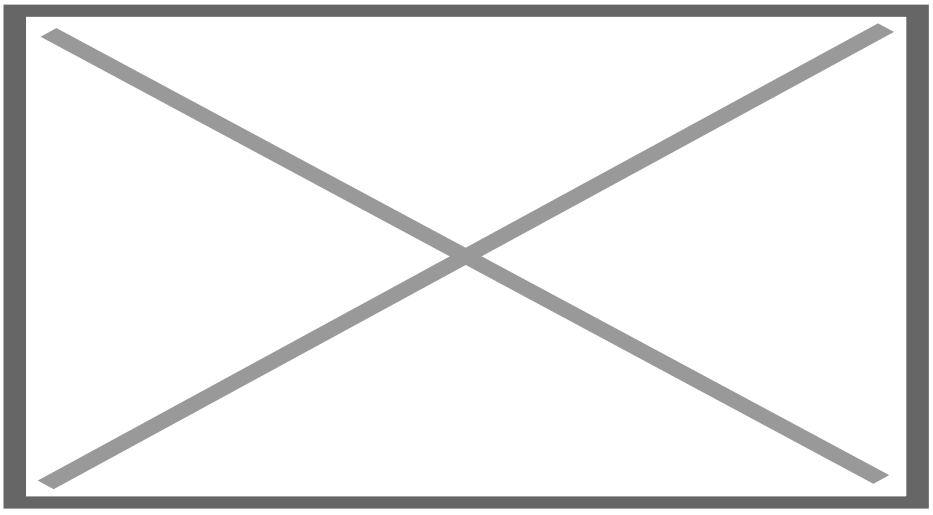
The MAGIS Master is divided into two semesters: the first is devoted to teaching knowledge through lectures, and the second to applying that knowledge in a research project and research internship.
The lectures are divided into two parts: one covering the fundamentals of mechanics of materials and the other covering related specializations.

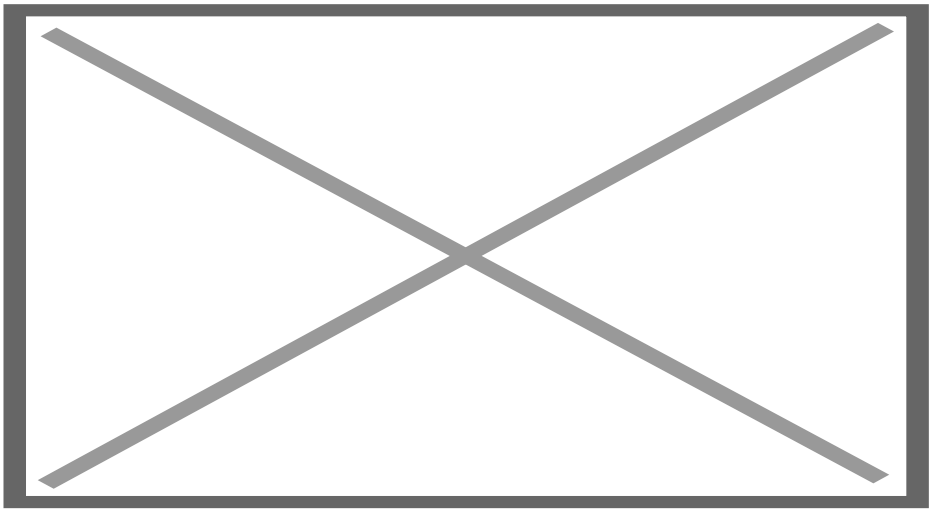
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

Autonomously formulate a mechanical problem to meet a given objective, from modelling the system under study to modelling stresses and boundary conditions, proposing an associated solution approach.

Objectives

The MAGIS Master offers high-level international training in mechanics of materials. It aims to train students in skills to understand, build and apply models linking materials, their microstructure, phase changes, damage, and cracking to their mechanical properties, whether coupled with other physics or not, for advanced industrial applications.
Students are trained in microstructural analysis methodologies (electron microscopy, spectral analysis, tomography, diffraction), field measurements for inverse property identification, modeling of deformation, damage, and cracking mechanisms, and the coupling between the various physical phenomena, as well as in simulation tools for the nonlinear mechanical behavior including methods using artificial intelligence.
The approach applies to a wide variety of materials (metals, ceramics, glasses, composites, polymers, foams, shape memory alloys, etc.) subjected to complex loadings (3D, quasi-random, anisothermal, multiphysics : thermal, electrical, magnetic, chemical, etc).

Débouchés

Career prospects

After a Master's or Master's + PhD: engineer (R&D, control, production, etc.)
After a Master's + PhD: researcher or lecturer
After a Master's or Master's + PhD: engineer (Research & Development, control, production, etc.)
Design engineer in the industrial sector
Design engineer in the research / scientific sector
Design engineer industry / public research
Research or Design Engineer
Research Engineer

Further Study Opportunities

PhD
PhD thesis

Calendar

Start of programme (indicative date)
01/09/2026
Admission

Admission Route

Mechanics
Engineering Sciences

Capacity

Available Places

24

Target Audience and Entry Requirements

To access this study path, applicants must hold study an M1 in MIP, MMS or IT in the discipline (transfer paths may be granted from an M1 in MMF, ISM or ISM Learning).
Applicants from outside the discipline: M1 in Mechanics, Materials Science, Physics (with a strong focus on mechanics) or Mathematics.
Minimum level B2 in English.

Période(s) de candidature

Inception Platform

From 15/02/2026 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.

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

Curriculum Vitae.

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

Prerequisites courses form for M2 MAGIS.

Download at the following link: https://nc.ens-paris-saclay.fr/s/aLboxAZy9KnqTjW

Additional supporting documents

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

If you're english native speaker, just upload a PDF with "I'm english native speaker because... "

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

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

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/practica class
Fundamentals of Mechanics of Materials								
Advanced Materials Science	3	Semester 1	24		6			
Charger le détail								
Mechanics and Thermodynamics of Solid Materials	3	Semester 1	20	7	3			
Charger le détail								
Nonlinear Material and Structural Computation by FEM	3	Semester 1	18		6			
Charger le détail								
Digital Image Correlation and Identification in Experimental Mechanics	3	Semester 1	12		12			
Charger le détail								
Multiphysics Couplings	3	Semester 1	16		8			
Charger le détail								
Advanced Mechanics of Materials								

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practica class
Homogenization and Macroscopic Properties of Heterogeneous Materials	3	Semester 1	27		3			
Charger le détail								
Fracture Mechanics and Fatigue	3	Semester 1	24		6			
Charger le détail								
Continuum Damage Mechanics	3	Semester 1	30					
Charger le détail								
Materials and Structures Submitted to Transient and Impact Loadings	3	Semester 1	21		6			
Charger le détail								
Scientific Machine Learning — Application to Mechanics of Materials	3	Semester 1	24		9			
Charger le détail								
UE libre Catalogue S1	2.5	Semestre 1						
Charger le détail								

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learn cour
Research Project	6	Semester 2	3						
Charger le détail									
Research internship	24	Semester 2							
Charger le détail									

Teaching Location(s)

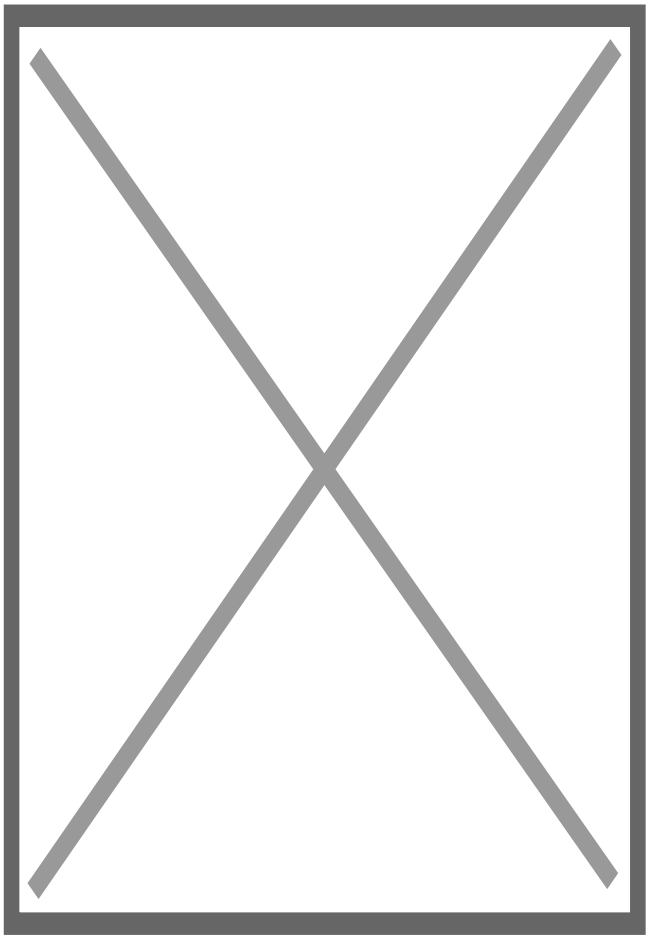
GIF SUR YVETTE

Academic Partner(s)

Laboratoire de Mécanique Paris-Saclay (LMPS)

Training campus

Javascript est requis pour visualiser cette carte.



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Voir
Student restaurant (CROUS)
Library
Sports facilities
Student residence

Contact

- **Olivier HUBERT**

  PU
- **Yoann GUILHEM**

  MCF

http://www.universite-paris-saclay.fr/formation/master/mecanique/m2-mecanique-des-materiaux-endommagement-rupture-et-multiphysique-magis