Université Paris-Saclay
Sciences de l’ingénierie et des systèmes

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Mechanics

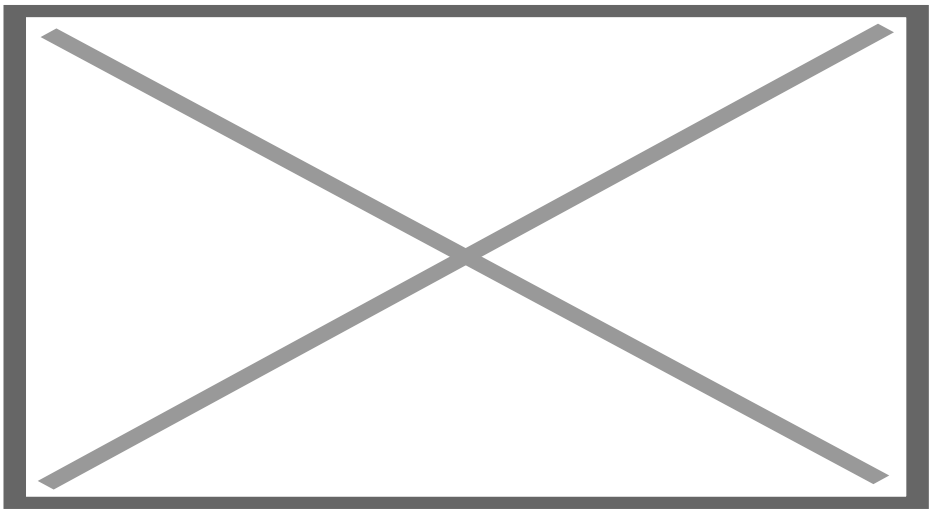
Master's degree
Language(s) of instruction
French

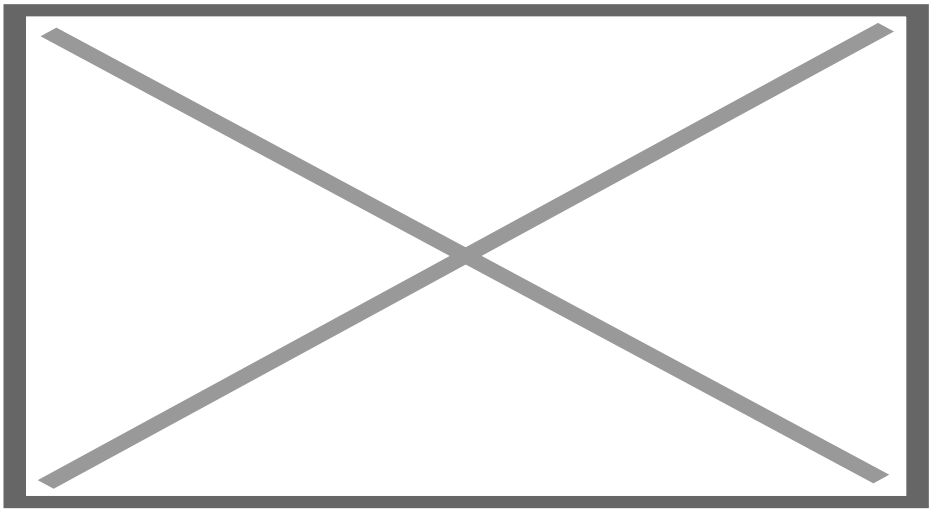
The aim of the Master of Mechanics is to provide students with solid foundations in both theory and practice, effectively preparing them for entry into the professional world. The Mechanical Engineering programme offers a variety of courses that allow students to pursue a wide range of career opportunities as engineers, senior managers or researchers, whether in companies or in laboratories within public institutions.

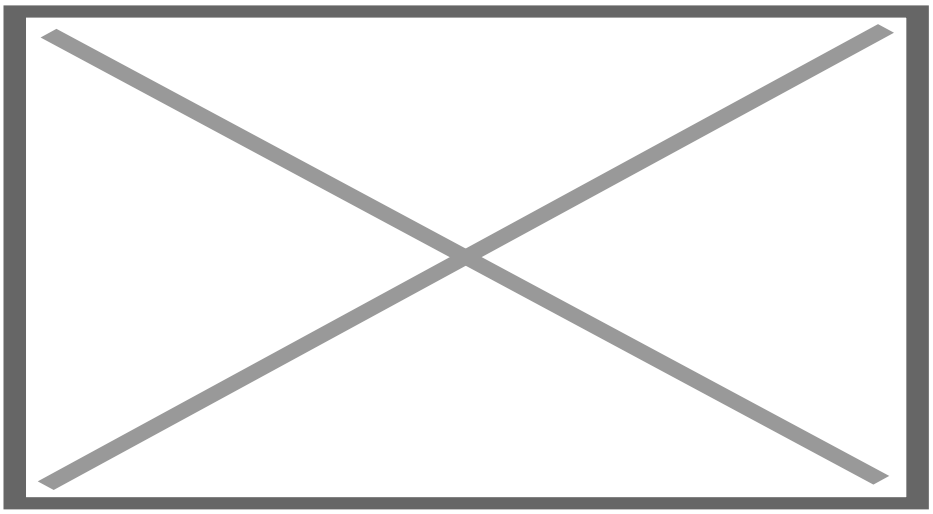
Aeronautics, space, transport, energy, environment, bio-medical, etc. are all fields whose development is based on the advances made in research in mechanics and mechanical engineering.

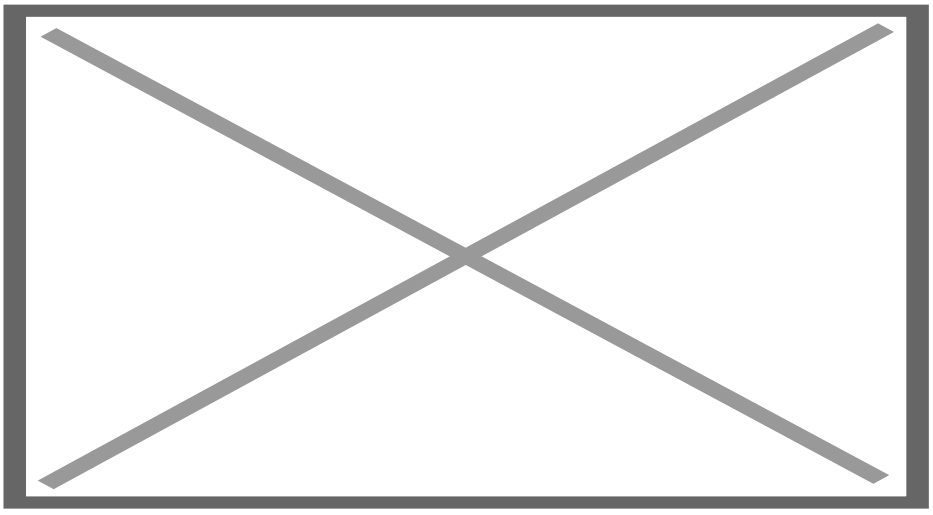
Within this broad context, the Mechanics degree course at Université Paris-Saclay is aimed at students who have a Bachelor's degree (obtained in Mechanics or an equivalent) and who have a particular interest in digital and experimental sciences, a curiosity and scientific rigour.

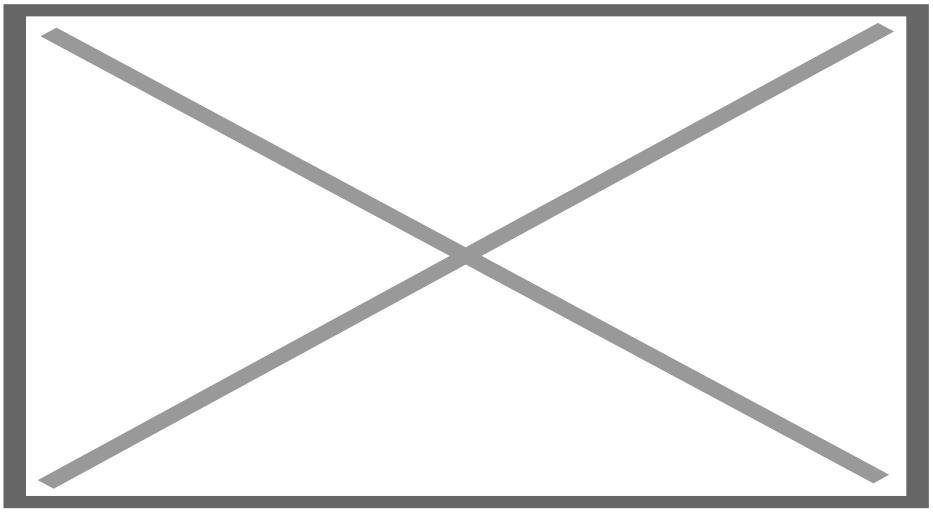
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Information

- List of Pathways
- Overview
- Application requirements

Liste parcours

Master’s Year 1

M1 Ingénierie des Systèmes Mécaniques - Formation par Apprentissage

Add to Compare

M1 Ingénierie des Systèmes Mécaniques

Add to Compare

M1 Mechanics - International track

Add to Compare

M1 Mécanique - Mécanique des Fluides

Add to Compare

M1 Mécanique - Mécanique des Matériaux et des Structures

Add to Compare

M1 Mécanique - Mécanique et Ingénierie de la Production

Add to Compare

M1 Mécanique - Méthodes Mathématiques pour la Mécanique

Add to Compare

Master’s Year 2

M2 Advanced Manufacturing and Smart Systems

Add to Compare

M2 Dynamique des Fluides et Energétique

Add to Compare

M2 Formation à l'Enseignement Supérieur en Mécanique - FESup Mécanique

Add to Compare

M2 Ingénierie de la Conception et de la Modélisation en Mécanique - Apprentissage

Add to Compare

M2 Ingénierie de la Conception et de la Modélisation en Mécanique

Add to Compare

M2 Ingénierie du Design Industriel

Add to Compare

M2 Mathématique et Mécanique Fondamentale

Add to Compare

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

Add to Compare

M2 Modelling and Simulation in the Mechanics of Structures and Coupled Systems

Add to Compare

Présentation

Skills

- Independently formulate a mechanical problem to meet a given objective, from the modelling of the system of study to the modelling of stresses and boundary conditions by proposing an approach to an appropriate solution.
- Use theoretical or practical concepts and knowledge to understand a problem and put it into an equation.
- Apply analytical, numerical or experimental problem-solving tools at a level of proficiency: justified choice of existing tools or ad hoc production of specific tools and critical analysis of results.
- Design and optimise an innovative scientific and/or technological solution from a development or research perspective (this may concern a product or an experimental protocol).
- Communicate in written or oral form, in a clear, concise and educational manner, scientifically argued, interpreted and discussed ideas with a view to their development and use by the scientific community (professional or student).
- Carry out an individual or team project in a corporate and inter-personal manner (coordination or management of actions, project management, feedback, teamwork, independence, responsibility, initiatives, etc.).

Fiche nationale du Répertoire National des Certifications Professionnelles (RNCP)

Learning outcome targets

The aims of the course are:

- to provide a framework within the Université Paris-Saclay to coordinate Master's degree courses in the field of mechanics,
- to offer students courses associated with innovative fields of research,
- to offer students the possibility of an apprenticeship,
- to strengthen the international influence of a community brought together by the Université Paris-Saclay,
- to attract the best students from around the world.

The Mechanics course therefore aims to provide students with a solid training which is also accessible as an apprenticeship and is both theoretical and practical. In this way students can easily integrate into the world of work both in France (in large companies as well as in SMEs and SMIs in the Ile-de-France industrial area) and abroad.
The courses available make it possible to find either highly technical professional opportunities or jobs as engineers, senior managers or researchers in companies or in the laboratories of public institutions or universities. Through the support of laboratories in partner institutions, the course allows students to pursue a doctorate in the doctoral institution SMEMaG ‘Mechanical, energetic and material sciences and geosciences’, for example.

In order to achieve its objectives, the organisation is essentially structured around specialisations centred on disciplines (fluid mechanics, materials, structures, design and mechanical engineering, etc.) but also around more inter-disciplinary courses (higher education, mathematics and mechanics) and offers students the possibility to build courses aimed at either:

- areas of academic or industrial research,
- fields of applications such as: aeronautics, space, vehicles, energy, environment, bio-medical, instrumentation, scientific computing.

By the end of their Master's training, graduates are specialists whose disciplinary and cross-disciplinary skills can be applied in three essential areas:

- General scientific skills: modelling, analysing and solving problems requiring abstract skills, designing and implementing an experimental approach, using data acquisition, simulation and analysis software, conducting a critical analysis of results.
- Organisational skills: working independently, using information and communication technology, researching information, implementing a project and carrying out a study.
- Interpersonal skills: communicating, working in a team, taking on responsibilities in a professional environment.

As a result of the course, students will have acquired theoretical and experimental expertise in mechanics and its interfaces, the ability to work independently and a critical sense.

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.)
R&D Engineer
design study engineer
R&D Project Manager
Design engineer industry / public research
Admission

Target audience

Recommended undergraduate disciplines:

- Undergraduate degree in Mechanics
- Undergraduate degree in Physics (with Mechanics focus) or Mathematics
- Undergraduate degree in Engineering sciences

  Thus, among the prerequisites, applicants are expected to have a knowledge base in general mechanics, solid mechanics and fluid mechanics, structural dynamics, matrix algebra and differential calculus, and numerical methods.
  For courses in French, a certified French level of at least B2 with an oral comprehension score greater than 15/25 is required.

Contact

- **François Louf**

http://www.universite-paris-saclay.fr/formation/master/mecanique