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

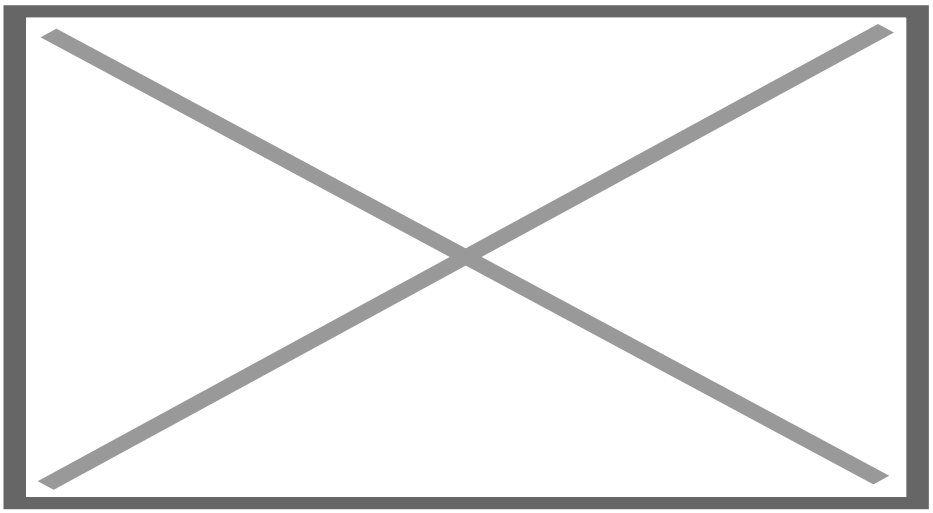
M2 Physique et ingénierie de l'énergie (PIE) : Réseaux électriques et énergies renouvelables

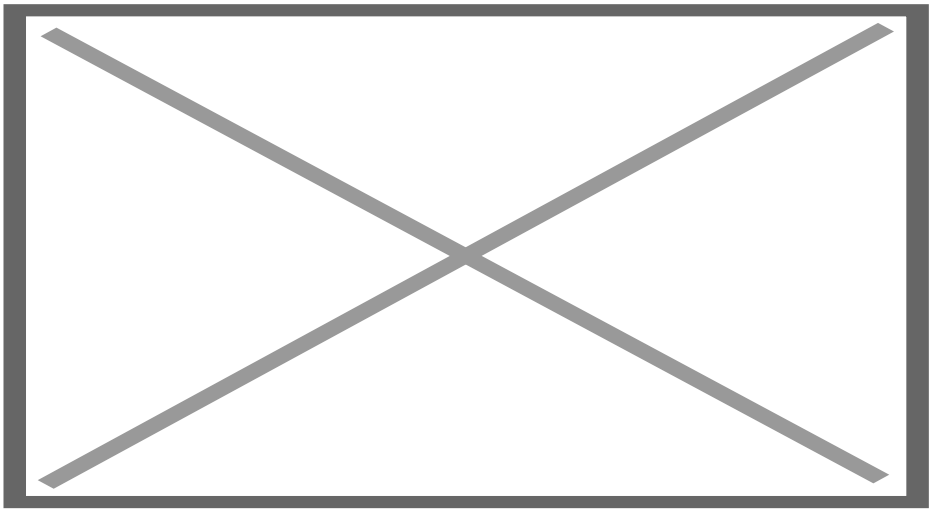
Master's degree
Specialisation Energy
Enrolment type
Formation initiale
Language(s) of instruction
English
French

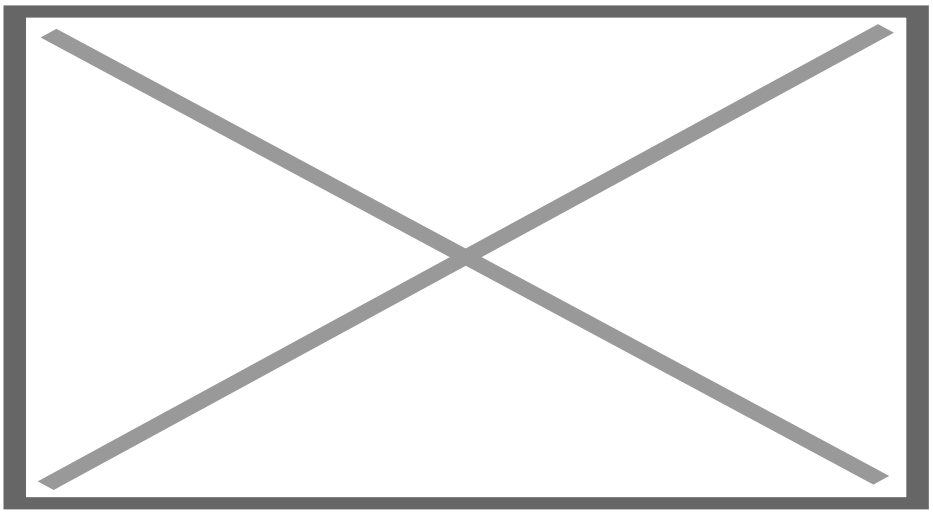
The M2-PIE offers training with a strong scientific focus, ensuring a genuine understanding of energy-related issues. The programme covers all current and future issues relating to energy production, transport, distribution and storage, with a strong emphasis on renewable energies and innovative solutions such as smart grids, advanced storage and smart microgrids.

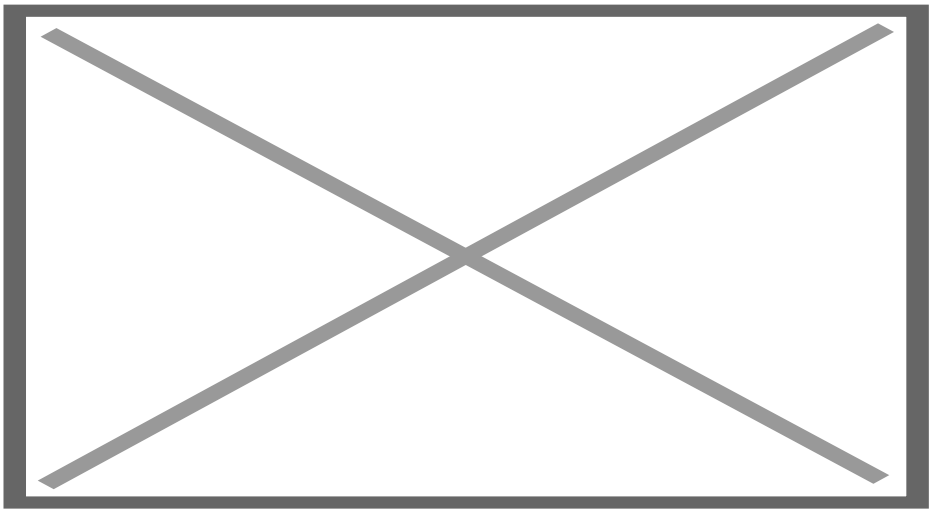
The program is organized into four specialized tracks : electrical networks, renewable energies, electrical networks and energy conversion, and a hybrid program. The electrical networks and energy conversion sub-course is taught entirely in English. Finally, the hybrid sub-course is intended for engineering students enrolled in a dual degree program at CentraleSupélec. The first semester includes all disciplinary courses, while the second semester is dedicated to professionalisation.

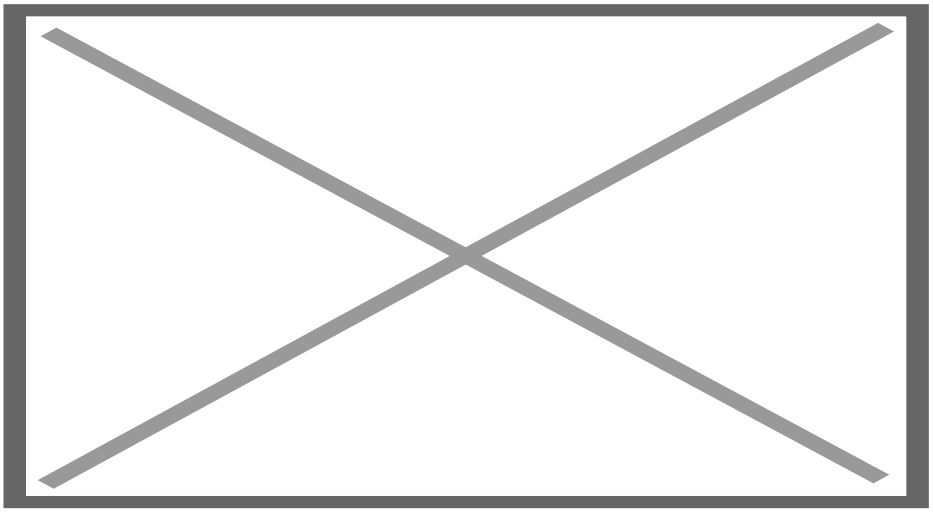
Télécharger la fiche détaillée
Apply Now











Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

- Use and develop appropriate models, choose the right modelling scale and relevant simplifying assumptions to address the problem.
- Solve the problem using approximation, simulation and experimentation.
- Investigate a field or discipline related to fundamental sciences or engineering sciences in greater depth.
- Create knowledge using a scientific approach.
- Identify, formulate and analyse a problem in its scientific dimensions.
- Be clear about the objectives and expected results. Be rigorous about assumptions and approach. Structure your ideas and arguments. Highlight the value created.
- Conduct a project, or a team

Objectives

This programme provides students with the knowledge and skills they need in a constantly evolving field. Some teaching units are shared with the M2-PIE (PIE: electrical systems for energy and mobility and PIE: new energy technologies) and the 3A programme at CentraleSupélec. The programme allows students to tailor their education to their career goals. In order to give the programme a real engineering dimension, students are required to take courses in project management and professional English. They also have the opportunity to carry out a research project in a Paris-Saclay University research laboratory as part of their introduction to research. They carry out practical work using a variety of numeric tools and experimental

platforms. Seminars and visits to companies and energy production sites complement the training programme.

Débouchés

Career prospects

After a Master's + PhD: researcher or lecturer
Business Manager
Research Engineer
Research Engineer
Design engineer
Research officer

Further Study Opportunities

PhD thesis
Students in this track can turn to research at the end of the 2nd year Master's.

Calendar

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

Admission Route

Physics
Electronics, Electrical Energy, Control
Engineering Sciences

Capacity

Available Places

35

Target Audience and Entry Requirements

Master's degree or equivalent (four or five years of university studies) with skills in electrical engineering, etc.

Période(s) de candidature

Inception Platform

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

Supporting documents

Compulsory supporting documents

Rank of previous year and size of the promotion.

Copy of passport.

Copy of identity document.

Motivation letter.

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.

Additional supporting documents

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

Recommendation letters.

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	Lecture/practical	directed study/practic class
Electrical actuators	3	Semestre 1	13.5	6	4.5			
Charger le détail								
Power electronic conversion	3	Semestre 1	21	7.5				
Charger le détail								
Matériaux du Génie électrique	3	Semestre 1	26	4				
Charger le détail								
Multi-physique	3	Semestre 1	22	13				
Charger le détail								
Méthodes d'optimisation	3	Semestre 1	18	6				
Charger le détail								
Réseaux d'énergie électrique	3	Semestre 1	21	3				
Charger le détail								
Electromagnetism and numerical modeling	3	Semestre 1	18	3	3			
Charger le détail								
Optimization for electric power networks	3	Semestre 1	18		6			
Charger le détail								
Electrical networks	3	Semestre 1	21	3				
Charger le détail								
UE libre Catalogue S1	2.5	Semestre 1						

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

Charger le détail

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Economie des réseaux	3	Semestre 1	21					

Charger le détail

Stabilité, perturbations et protection des réseaux électriques	3	Semestre 1	18	3				

Charger le détail

Risques électrostatiques, décharges et arcs électriques	3	Semestre 1	24					

Charger le détail

Stockage d'énergie	3	Semestre 1	18	3				

Charger le détail

Supergrids et réseaux à faible inertie	3	Semestre 1	16.5	3				

Charger le détail

Réseaux embarqués	3	Semestre 1	18	3				

Charger le détail

Commande des réseaux électriques	3	Semestre 1	15	6				

Charger le détail

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practica class
Energy and society	3	Semester 1	12.5	11.5				

Charger le détail

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Renewable energy sources and grid integration	3	Semestre 1	27					
Charger le détail								
Transfert d'énergie sans contact	3	Semestre 1	18		6			
Charger le détail								
Risques électrostatiques, décharges et arcs électriques	3	Semestre 1	24					
Charger le détail								
Machine learning pour la maîtrise de la consommation électrique	3	Semestre 1	12	12				
Charger le détail								
Solaire photovoltaïque	3	Semestre 1	21		7			
Charger le détail								
Générateurs électrochimiques : batteries, piles à combustible et hydrogène	3	Semestre 1	16	8	4			
Charger le détail								

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dist lea co
Gestion de projet	2	Semestre 2	12	12					
Charger le détail									
Introduction to research	3	Semester 2							
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dist lea co
Anglais / Français	2	Semestre 2	24						
Charger le détail									
UE libre catalogue S1 et S2	2.5	Semestre 2							
Charger le détail									
Seminars	1	Semestre 2							
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learni cours
Stage	22	Semestre 2							
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Renewable energy sources and grid integration	3	Semestre 1	27					
Charger le détail								
Advanced Power electronic conversion	3	Annualisé	15	6	3			
Charger le détail								
Advanced AC and DC power systems	3	Semestre 1	16.5		7.5			
Charger le détail								
Design Methodologies for Renewable Energies	3	Semestre 1	6		18			
Charger le détail								

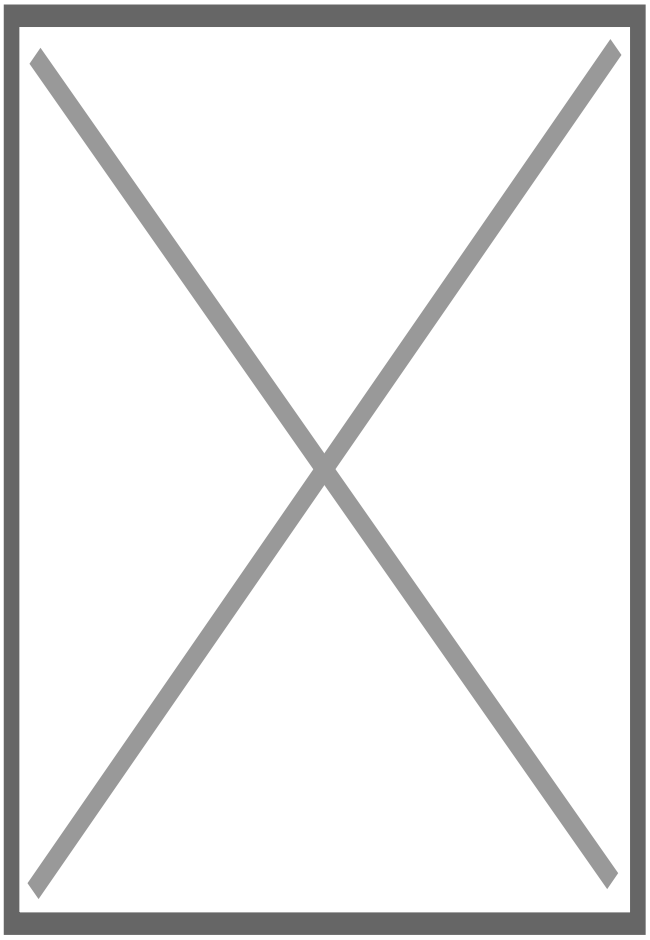
Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class
Modelling, control and stability of electrical systems Charger le détail	3	Annualisé	9	7.5	7.5			
Electromgnetic compatibility for power electronics Charger le détail	3	Semestre 1	15	3	6			

Teaching Location(s)

ORSAY
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

- **Mohamed BENSETTI**

  Professeur à Centrale Supélec, GeePs

- **CentraleSupélec SUPPORT SCOLARITE**

  Support scolarité

http://www.universite-paris-saclay.fr/formation/master/energie/m2-physique-et-ingenierie-de-lenergie-pie-reseaux-electriques-et-energies-renouvelables