Université Paris-Saclay

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M2 Nuclear Engineering

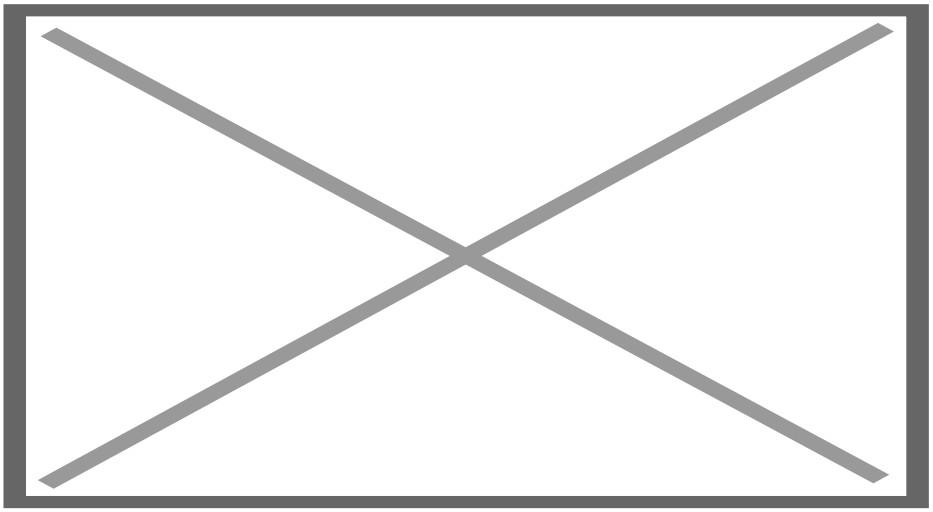
Master's degree
Specialisation Nuclear Energy
Enrolment type
Formation initiale
Formation continue
Language(s) of instruction
English

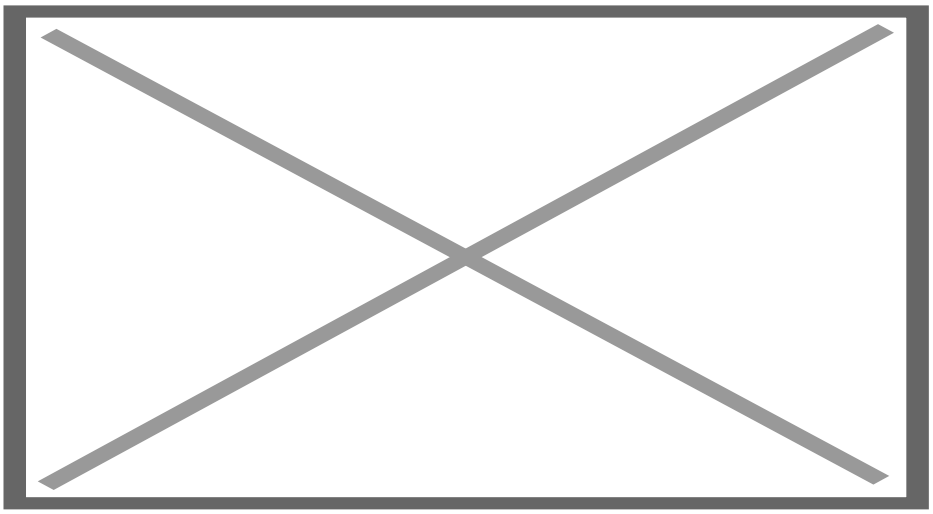
The Master’s in Nuclear Energy is an international program that equips talented students from around the world with cutting-edge expertise to drive innovation in the nuclear industry and contribute to the global transition towards low-carbon energy. As a reliable, large-scale and low-emission source of electricity, nuclear power plays a key role in the fight against climate change by helping reduce greenhouse gas emissions. This programm trains tomorrow's experts to tackle global challenges.

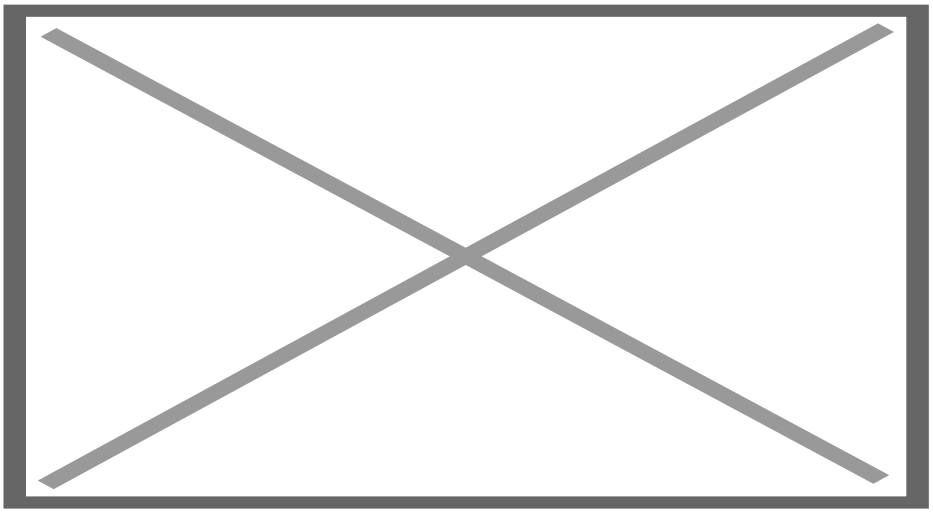
Five tracks are proposed :

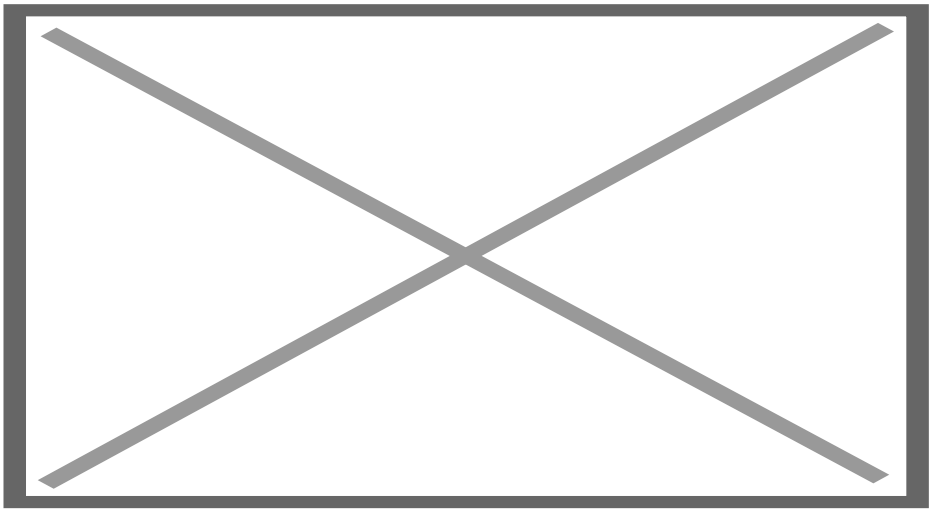
- Fuel Cycle: this course aims to learn the physico-chemistry necessary for the different stages of the nuclear fuel cycle. This track is only accessible from M1 Chemistry;
- Decommissionning and Waste Management: this course aims to acquire the knowledge, skills and attitudes necessary to conduct a project to clean up and dismantle old nuclear installations (reactor, plant, workshop, laboratory, installation, contaminated site or soil) and to manage radioactive waste;
- Operation: the objective here is to learn how to operate, control and maintain a nuclear installation, in particular a nuclear power plant;
- Nuclear Plant Design: this course provides students with in-depth training in the design and construction of nuclear facilities such as nuclear power plants or fuel processing plants:
- Nuclear Reactor Physics and Engineering : this training is focusing on the physics of nuclear reactors. This track is only accessible from M1 Physics.

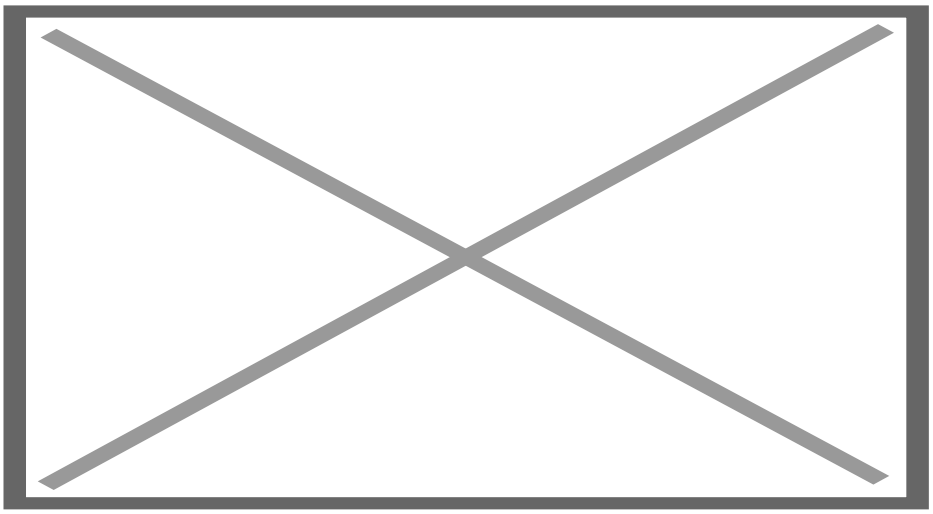
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Information

- Overview
- Application requirements
- Schedule

Présentation

Skills

Analyze, design and propose solutions to complex problems in one of the major fields of nuclear energy: Engineering, Operations, Waste Management and Decommissioning, Fuel Cycle.

Objectives

The Master Nuclear Energy is an international Master's degree, whose objective is to provide high-level foreign and French students with the main knowledge necessary for the nuclear industry producing low-carbon electricity. Through the quality and scope of the content processed, it makes it possible to meet a wide spectrum of the needs of companies in this field by recruiting students with high initial employability. This Master's degree also aims to prepare students for research in the nuclear field (e. g. Reactor Physics, Modeling and Simulation, Instrumentation, Radiochemistry). The entire Master's degree therefore addresses the different professions in civil nuclear energy. Its teaching is entirely provided in English.The first year is splitted in two track: Physics and Chemistry. Each of these intend to provide student essential knowledge to prepare them for the second year in the master.

Débouchés

Further Study Opportunities

PhD
Engineering, research and development
Engineering methods and industrialisation
R&D researcher or data modelling and analysis expert in leading-edge companies or laboratories.

Admission

Capacity

Available Places

100

Target Audience and Entry Requirements

Bachelor in Physics Bachelor in Chemistry

Période(s) de candidature

Inception Platform

From 21/01/2026 to 04/07/2026

Supporting documents

Compulsory supporting documents

Motivation letter.

It is required to apply to at least 2 courses of the M2 The letter of motivation must specify in a well-founded manner the M2 course(s) desired.

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 (compulsory for non-English 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/practic class
Bloc 1 (common courses) : Safety and Risk Management 2	0	2	22,5	7,5			
Bloc 2 (common courses) : Electricity Production : tools, needs and capacities (NDWM/NFC/NPD/NPO/NRPE)	0	3	22,5	7,5			
Bloc 3 NRPE : Introduction to reactor physics	0	4	22,5	7,5			
Bloc 4 NRPE : Advanced reactor physics and simulation	0	4	22,5	7,5			
Bloc 5 : Internship	0	1	22,5	7,5			

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practic class
Bloc 1 (common courses) : Safety & Risk Management (NDWM/NFC/NPO/NPD/NRPE)	0	3	22,5	7,5			

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practic class
Bloc 2 (common courses) : Electricity Production : tools, needs and capacities (NDWM/NFC/NPD/NPO/NRPE)	0	3	22,5	7,5			
Bloc 3 NPD : Reactor Physics and operation	0	4	22,5	7,5			
Bloc 4 NPD : Mechanical engineering and design for nuclear power plants	0	5	22,5	7,5			
Bloc 5 : Internship	0	1	22,5	7,5			

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practic class
Bloc 1 (common courses) : Safety & Risk Management (NDWM/NFC/NPO/NPD/NRPE)	0	3	22,5	7,5			
Bloc 2 (common courses) : Electricity Production : tools, needs and capacities (NDWM/NFC/NPD/NPO/NRPE)	0	3	22,5	7,5			
Bloc 3 NPO : Basic Reactor Physics	0	2	22,5	7,5			
Bloc 4 NPO : Operation Management: risk, safety, piloting for production	0	4	22,5	7,5			
Bloc 5 : Internship	0	1	22,5	7,5			

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practic class
Bloc 1 (common courses) : Safety & Risk Management (NDWM/NFC/NPO/NPD/NRPE)	0	3	22,5	7,5			
Bloc 2 (common courses) : Electricity Production : tools, needs and capacities (NDWM/NFC/NPD/NPO/NRPE)	0	3	22,5	7,5			
Bloc 3 NDWM : Decommissioning Waste Management: principles and Methodology	0	4	22,5	7,5			
Bloc 4 NDWM : Decommissioning Waste Management: applications	0	4	22,5	7,5			
Bloc 5 : Internship	0	1	22,5	7,5			

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

Bloc 1 (common courses) : Safety & Risk Management (NDWM/NFC/NPO/NPD/NRPE)	0	3	22,5	7,5
Bloc 2 (common courses) : Electricity Production : tools, needs and capacities (NDWM/NFC/NPD/NPO/NRPE)	0	3	22,5	7,5
Bloc 3 NFC : Chemistry and Physics for Fuel Cycle	0	3	22,5	7,5
Bloc 4 NFC : Nuclear Fuel Cycle : from front-end to back-end	0	5	22,5	7,5
Bloc 5 : Internship	0	1	22,5	7,5

Teaching Location(s)

ORSAY
GIF SUR YVETTE
PARIS 15
CHAMPS SUR MARNE
PALAISEAU

Contact

- **Gaël Sattonnay**

http://www.universite-paris-saclay.fr/formation/master/ingenierie-nucleaire/m2-nuclear-engineering