CHEMICAL ENGINEERING / FUEL CYCLE CHEMISTRY

Master of Science
Nuclear Energy
Concentration in Fuel Cycle

INSTITUTION(S)

Chimie ParisTech
Institut Polytechnique de Paris
INSTN
Paris-Saclay University

DURATION OF STUDY Two-years formation

LANGUAGE

TRAINING LOCATION Gif-sur-Yvette
Orsay
Palaiseau
Paris

MODE OF STUDY
- Continuing education
- Full time programme

CONTACTS gael.sattonnay@universite-paris-saclay.fr

WEB www.universite-paris-saclay.fr
www-instn.cea.fr
www.ip-paris.fr
www.chimieparistech.psl.eu

PREREQUISITES

Students from scientific university programmes, in France or abroad, who have completed successfully 180 ECTS (bachelor degree in physics, chemistry, mechanics, or nuclear engineering).

Student engineers from engineering schools who have validated their first year.

SUMMARY

The Master in Nuclear Energy (MNE) is a two-year master degree programme taught exclusively in English. It aims to train high-level experts to meet current and future needs of the nuclear industry: performance optimization of the current reactor fleet, design of third-generation facilities, development of advanced processes and Generation IV reactors, operation of current reactors and facilities, dismantling of facilities, reprocessing of spent fuel, nuclear waste management, etc.

The first year consists in core courses with a specialization in either physics or chemistry.

The second year, different concentrations are available to students: Fuel Cycle (**FC**), Decommissioning & Waste Management (**DWM**), Nuclear Plant Design (**NPD**), Nuclear Reactor Physics & Engineering (**NRPE**), or Operations (**OP**).

Second year – Fuel Cycle (FC) : The Fuel Cycle concentration is a reference programme in the nuclear industry. It aims at giving future managers a global vision of chemistry and physical chemistry applied to the nuclear field through top-level theoretical and practical training. The specificity of this major is that it provides students with a fully comprehensive scientific background to study the behaviour of radionuclides in condensed phase. This programme also allows students to pursue their studies with a PhD and later move on to research careers.

The MNE master degree is accredited by the I2EN and awarded the I2EN Label.

SKILLS

- Wide range of scientific culture: nuclear materials, nuclear physics and chemistry, mathematics and computer science, project management;
- Design, develop and execute in industrial environments;
- Conduct applied research, update development, analysis, testing and implementation of innovations;
- Team management;
- Work in an international context and manage personal and professional projects.

CAREERS

- Radiation protection research associate;
- Power plant operator;
- Primary chemistry design engineer;
- Project engineer;
- Pursuit of a PhD.