

Master of Science

Nuclear Energy

Concentration in Operations



INSTITUTION(S)

Institut Polytechnique de
Paris
INSTN
Paris-Saclay University

DURATION OF STUDY Two-years programme

LANGUAGE 

TRAINING LOCATION Orsay
Palaiseau
Paris
Saclay



MODE OF STUDY • Continuing education
• Full time programme

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PREREQUISITES

Students from scientific university courses, in France or abroad, who have validated 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 of 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 - Operations (OP) concentration: This track trains experts to manage, control and maintain nuclear facilities. Future graduates will have the necessary skills to understand the phenomena that can disrupt the proper functioning of an installation, in normal or accidental situations. They will be able to ensure safety at work on the sites and protect the environment from radioactive risks. Partnerships with the main industrial players in the nuclear industry have been established. Graduates generally aim for jobs related to the operation of nuclear facilities such as research reactors or other nuclear facilities (such as for the major fuel cycle).

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

SKILLS

- Manage and maintain a nuclear facility;
- Knowing the standards and rules of nuclear safety and security, knowing how to manage the safety of personnel and the quality of the environment;
- Master the principles and methods of radiation protection during operation;
- Be able to optimize the operation of nuclear facilities;
- Be able to work as part of a team, share knowledge on the representations of a complex installation, human factors.

CAREERS

- Operating engineer;
- Operations manager;
- Safety and security engineer;
- Head of maintenance;
- Environmental process engineer;
- Training infrastructures.