

NUCLEAR ENERGY PRODUCTION & INDUSTRIAL APPLICATIONS

MASTER OF SCIENCE

ACCREDITATION

The MSc in Nuclear Energy Production & Industrial Applications (NEPIA) is accredited by the Ministry of Higher Education and Research.

National Accreditation Reference: 1701324R

Mention

Nuclear Engineering

KEY WORDS

Nuclear Technology, Energy, Physics, Reactors, Safety, Nuclear installations

SCHOOL OFFERING THE MASTER

IMT Atlantique, a «Grande Ecole» which is part of the Institut Mines-Telecom, a leading French higher Education and Research Institution in Engineering, with 12,500 students.

LOCATION

This MSc program is offered on Nantes campus. Nantes is France's sixth-largest city and capital of the third-largest industrial region. Nantes lies just 50 km from the Atlantic coast; Paris is 2 hours away by high-speed train. Nantes is a dynamic city, which has been frequently recognized for its quality of life. The campus provides all the students facilities: student's residence, sports facilities, wireless network, library, associations, etc.

INDUSTRIAL PARTNERS

EDF, Areva, Andra, Daher...

LANGUAGE OF TEACHING

100% English

ENVIRONMENT

The MSc NEPIA is designed to provide skilled and specialized human resources to the European and international states developing nuclear technology. The combination of scientific and technical skills with management knowledge and strong safety culture (human factor and organizational safety) is meant to put the human being and environment safety as the priority number one.

COURSE AIMS

The MSc NEPIA specializes in nuclear sciences applications including energy production (power reactors) and industrial applications (E.g accelerators, cyclotrons...).

PROGRAM

Scientific and technical modules:

- > Physics of Ionizing Radiation
- > Introduction to Nuclear modeling
- > Introduction to Neutron physics
- > Safety and Radioprotection
- > Physico-Chemistry of Environment
- > Introduction to Nuclear Technology
- > Basics for reactors
- > Dismantlement and Decommissioning of Nuclear Installations
- > Nuclear materials
- > Operation & maintenance

Management modules:

- > Nuclear: Management, Safety and Society
- > Energy mix and energetic transition
- > Environmental Management and Strategy of sustainability

Company visits, Scientific seminars, Technical projects, Generic methods for Engineers, French language & culture

Professional coaching (Student centred process of reflection on competencies and professional objectives)

> 6-month MSc thesis in Industry or research lab

ADMISSION REQUIREMENTS

This Master is open to applicants with at least a scientific Bachelor of Science degree in a scientific discipline such as Nuclear, Chemistry, Physics, Chemistry, Electrical, Mechanical, Chemical, Energy, Environmental or Civil Engineering. Possible admission directly in the 2nd year for students who have a 4-year Bachelor degree or first year of Master in Nuclear Engineering or Nuclear Physics.

LANGUAGE REQUIREMENTS

English

- > Mother tongue or
 - > Bachelor degree taught in English or
 - > English test such as TOEFL IBT 80, IELTS 6.0, TOEIC 750, Cambridge
- No prerequisite in French

APPLYING

Apply at

<https://sneam.imt-atlantique.fr>

Applications are opened from October to May each year.

STRONG POINTS OF THE SCHOOL

- > MSc accredited by the Ministry of Higher Education and Research
- > International Faculty
- > Masters taught entirely in English and in small groups
- > Strong links with the industries
- > 6-month master thesis in industry or in a research lab
- > Intercultural seminars
- > Free French language courses
- > Master boosted by a research department
- > An international team for international students
- > A quality chart to welcome international students
- > Nantes airport/train station pick up
- > Accomodation available on campus
- > Scholarship based on excellence.
- > French Summer School program in July and August for students who wish to improve French language and culture skills.

COMPETENCES ACQUIRED

- > Acquire basic knowledge necessary for understanding nuclear energy production (power reactors) and industrial applications, e.g. accelerators, cyclotrons...
- > Develop competences in reactor operation, maintenance and safety issues including radioprotection.
- > Develop competences in particles beams production and qualification.
- > Develop competences in nuclear radiations applications: instrumentation, non destructive control, security...
- > Develop an awareness of societal considerations related to nuclear energy production.
- > Take into account societal issues related to nuclear energy production.

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TYPICAL JOBS

- > Project engineer related to nuclear energy.
- > Operation and maintenance engineer in power plant and other industrial applications.
- > Safety engineer in nuclear power plant operation and industrial installations, and environmental controls.
- > Research scientist and development engineer for industrial installations and power plants.

COST

Participation cost: 12 000 € / year

SCHOLARSHIPS

Special rates for :

- > European students from the Erasmus zone (6 000 € / year)
- > EU Graduate students from our partner universities (3 000 € / year)
- > EU students met at Education fairs (5 400 € / year)
- > excellent EU applications or recommended EU applications (2 600 € / year)
- > Non-EU students graduated from our partner universities (6 500 € / year)
- > Non-EU students met at Education fairs (9 600 € / year)
- > Non-EU Excellent applications or recommended applications (6 000 to 9 000 € / year)
- > Double-Degree students (4 500 € / year)
- > Possible Industrial sponsorship.

CALENDAR

One intake per year in September.

Year 1: Two academic semesters on Nantes campus

Year 2: One academic semester on Nantes campus + 6 month Master thesis in industry or in a research lab.

LODGING

The student's residence (called «MDE») located on campus offers furnished individual rooms. They are 18m2 and equipped with a private bathroom and a small kitchen.

Some rooms for couples are also available. The standard size is 30m2, including a living room and a separate bedroom.

housing-nantes@imt-atlantique.fr

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DETAILS OF SCHOOL

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