NUCLEAR MEDICAL APPLICATIONS
MASTER OF SCIENCE

ACCREDITATION
The MSc in Nuclear Engineering (NE), track in Nuclear Medical Applications is accredited by the Ministry of Higher Education, Research and Innovation. National Accreditation Reference: 20170877-1701324R.

Mention
Nuclear Engineering

KEY WORDS
Nuclear Medicine, Radioprotection, Medical physics, Dosimetry, Project Management.

SCHOOL OFFERING THE MASTER
IMT Atlantique is a "Grande Ecole" ranked among the best French Graduate Engineering Schools, and recognized internationally as a leading Technological University in the world most prestigious rankings. It is a member of Institut Mines-Télécom (IMT), the largest group of public Engineering and Management Graduate Schools in France.

LOCATION
This MSc program is offered on Nantes campus. Nantes is France’s sixth-largest city and capital of the thirdlargest 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
CEA, ARRONAX, GE Healthcare...

LANGUAGE OF TEACHING
Year 1: in English
Year 2: in French

ENVIRONMENT
Nantes is the main center of Western France in the field of medical physics and nuclear medicine, thanks to the presence of important research centers such as the Research laboratory SUBATECH, the cyclotron ARRONAX, the university Hospital of Nantes, etc. Students can benefit from more than ten years of teaching team experience and from the adapted Research environment.

COURSE AIMS
This Master develops fundamental scientific, technical and industrial knowledge of the different nuclear technologies used in the medical field. It has a particular focus on the safety and radioprotection, to be considered in the management of a large project in this field.

PROGRAM
Scientific and technical modules:
> Physics of Ionizing Radiation
> Introduction to Nuclear modeling
> Introduction to Neutron physics
> Radioprotection
> Physico-Chemistry of Environment

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, 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://ne.imt-atlantique.fr

STRONG POINTS OF THE SCHOOL
> MSc accredited by the Ministry of Higher Education, Research and Innovation
> International Faculty
> Masters taught 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
> Accommodation 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
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COMPETENCES ACQUIRED
> Acquire the basic scientific knowledge relative to nuclear technologies, necessary for understanding their utility and danger in medical applications
> Master the operational techniques and strategies for the management of a project in nuclear medicine. Implement appropriate solutions through projects in/with industry
> Develop competences in radioprotection and nuclear waste management in the medical environment
> Build contacts with a large number of international key players in the field
> Develop an awareness of societal considerations related to nuclear medicine

TYPICAL JOBS
> Project engineer related to medical installations
> Safety engineer in medical installations
> Operation engineer of medical installations (radiology equipments, accelerators…)
> Research scientist and development engineer for medical installations

COST
Participation cost for free movers:
> €12,000/year

SCHOLARSHIPS
Scholarships are available depending on the applicant's situation:
> Excellence of profile
> Country of origin
> University of origin
> Participation to student's fair
> Recommendation from French Embassy, etc

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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