



International Master of Science (MSc)

Erasmus Mundus Joint Master Degrees

Safe and RELIable Nuclear Applications (SARENA)

This programme aims to develop scientific, technical and management skills enabling engineers to work in all domains related to nuclear energy and applications with a strong international culture. It addresses the important issues of safe management of radioactive waste and installations dismantlement and decommissioning. The common denominator of the SARENA programme is nuclear safety.

CURRICULUM

The programme proposes two different tracks:

1. Radioactive Waste Management and Decommissioning (RWMD)
2. Nuclear Reactors Operation and Safety (NROS)

1st Semester (30 ECTS)

France-IMT Atlantique

- > Physics of ionizing radiations
- > Nuclear modeling
- > Technologies in nuclear reactors
- > Management
- > French language and culture
- > Entrepreneurship
- > Neutron physics
- > Radiation detection

2nd Semester (30 ECTS)

Spain-UPM Madrid

- > Radiochemistry
- > Radioactive waste management
- > Environmental radiological impact
- > Nuclear safety
- > Partitioning and transmutation of nuclear waste

Finland-LUT Lappeenranta

- > Computational nuclear thermal hydraulics
- > Turbulence models
- > Nuclear power plant engineering
- > Nuclear reactor physics analyses

3rd Semester (30 ECTS)

France-IMT Atlantique

- > Waste conditioning and storage
- > Dismantlement and decommissioning of nuclear installations
- > Geological disposal
- > Sustainability and safety management

Slovenia-UL Ljubjana

- > Physics of fission reactors
- > Experimental reactor physics
- > Materials in nuclear engineering
- > Nuclear safety

4th Semester (30 ECTS)

Master thesis

6 months internship in company or institution

100 % taught in English

6-month internship in a company or lab

Erasmus Mundus full scholarships



Muhammad JUNAIDI (Indonesia)

Student, intake 1 (2021-2023)

"Being part of SARENA programme is amazing experience. It is kind of privilege to have the opportunity to immerse myself into nuclear energy field, to directly learn from the academic and industrial experts, and to open my eye the countless possibility of future career in nuclear domain. Furthermore, through the mobility programme, I gain intercultural understanding and personal development. Once Erasmus, Always Erasmus !"



ERASMUS MUNDUS SCHOLARSHIPS

Students from Programme countries

(Member States of the European Union + North Macedonia, Iceland, Liechtenstein, Norway Serbia, Turkey) :

up to 20.000 Euro/year

Students from Partner countries

(rest of the world) :

up to 25.000 Euro/year

CAREER OPPORTUNITIES

- > Project engineer in nuclear energy projects including design and conception of installations.
- > Project manager in dismantling and decommissioning.
- > Project or safety engineer in nuclear waste processing, conditioning, safe storage.
- > Research scientist and development engineer.
- > Operation and maintenance engineer in power plant and other industrial applications.

With the support of the Erasmus+ Programme of the European Union



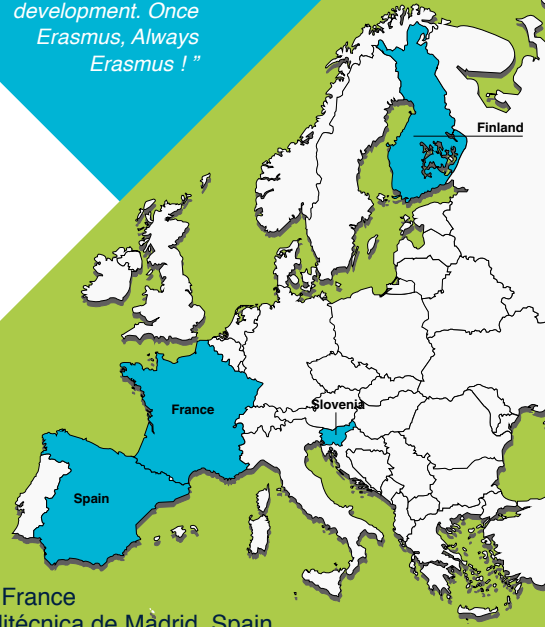
Participating universities:

IMT Atlantique, France

Universidad Politécnica de Madrid, Spain

Lappeenranta University of Technology, Finland

Univerza v Ljubljani, Slovenia



IMT ATLANTIQUE

IMT Atlantique, coordinator of the programme is a "Grande Ecole" ranked among the best French Graduate Engineering Schools, and recognized internationally as a leading Technological University (Shanghai, QS and THE rankings). It is a member of IMT, the largest group of public Engineering and Management Graduate Schools in France.

- > On-campus accommodation, restaurants, sports facilities
- > Orientation Days & French Summer School
- > A variety of student clubs

Find out more:

<http://www.imt-atlantique.fr/sarena/>

Contact us:

sarena@imt-atlantique.fr

Apply:

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

