eit Knowledge & Innovation Community
KIC InnoEnergy

KIC InnoEnergy MasterSchool EMINE – EUROPEAN MASTER IN INNOVATION IN NUCLEAR ENERGY

MSc EMINE helps tomorrow's nuclear engineers take up the challenges that the nuclear energy industry faces in terms of safety, social acceptability and waste management. By offering outstanding technical training and addressing the economic, social and political issues of nuclear energy, the programme broadens the scope of traditional nuclear education.

PROGRAMME DESCRIPTION

As a significant contributor to energy supply security and diversity, the nuclear industry is a key component of EU energy policy. For example, the price of nuclear electricity is competitive and predictable, and carbon emissions are low and comparable with the best renewable. Nuclear energy is also a potential low-carbon substitute for fossil-fuel-based combined heat and power production.

MSc EMINE will help provide the industry, which already employs around 400,000 people in Europe, with the highly-qualified engineers required to meet the ambitious nuclear expansion plans that many countries are now drawing up. Its students receive the high-level technical education they need to master the engineering complexities of nuclear power generation, as well as business training related to innovation issues and energy management.

The programme thus helps students integrate the technical aspects of the nuclear industry with key political, economic and social issues.

INDUSTRIAL PARTNERS

The uniqueness of EMINE lies in the involvement of its industrial partners. Four major players of nuclear energy, AREVA, EDF, ENDESA and Vattenfall take active part in the master. The CEA is also actively involved in EMINE, bringing thus its expertise as one of the most important research centres in Nuclear energy in Europe.

PROGRAMME CONTENT

The two-year MSc EMINE programme teaches students about energy management issues and gives them in-depth knowledge of the nuclear industry. The first year is spent learning the fundamentals of nuclear engineering plus safety and radiation protection as well as the design and management of power plants, all mandatory for any nuclear engineer, at either of the following locations:

- Royal Institute of Technology (KTH), Stockholm, Sweden
- Technical University of Catalonia (UPC), Barcelona, Spain

MSc EMINE also includes mandatory international mobility among recognized universities in Europe. A second year is spent at either of the following:

- Grenoble Institute of Technology (Grenoble INP), France
- ParisTech, France

Grenoble INP offers specialization in Materials Science for Nuclear Energy with two options: Fuel or Components.

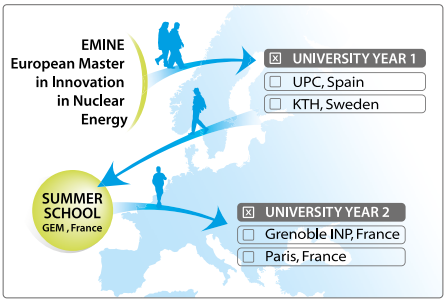
At ParisTech, five options are available:

- Nuclear Reactor Physics and Engineering
- Nuclear Plant Design
- Operations
- Fuel Cycle
- Decommissioning and Waste Management

At the end of the first year, students from both UPC and KTH gather at a summer school at Grenoble Ecole de Management (Grenoble, France) to discuss and dissect innovation issues in energy markets in general and nuclear in particular.

During their second specialization year, students have the opportunity to gain a closer insight into innovation issues through a live case study where they apply a methodological 'learning-by-doing' approach in projects coached by KIC InnoEnergy. After completing their second year, students perform a master thesis at an

industrial group or research laboratory.
As a result of this approach, MSc EMINE students gain a deep knowledge of what innovation is all about and acquire the soft skills very much appreciated by employers e.g. creating problem-solving solutions or developing fresh initiatives.



Furthermore, the involvement of leading actors from the European nuclear industry helps EMINE's students benefit from professional conferences and lectures as well as in-house training at key research centres.

CAREER OPPORTUNITIES

The EMINE programme leads to a comprehensive understanding of the stakes of the nuclear business. It opens a path towards a wide range of positions in the industry, from design and construction, to operation and maintenance, decommissioning and waste management. As MSc EMINE engineers are trained in soft skills, they are also able to evolve in management positions. In addition to a career in industry, EMINE students can also pursue a research career leading to a PhD degree.

APPLICATION PERIODS

Application Round 1
January 2nd - February 28th, 2013
Application Round 2
March 1 - April 30, 2013

PARTICIPATION FEES AND SCHOLARSHIPS

See info on website

REQUIREMENTS

Applicants must have completed a Bachelor of Science or Bachelor of Engineering or equivalent degree that provides a solid background in electrical engineering and/or Physics and/or Chemistry and/or Mechanics and/or Materials Science.

CONDITIONAL ACCEPTANCE

Students in their final year of undergraduate education may also apply and if qualified, receive a conditional offer. If you have not completed your studies, please include a written statement from the degree administration office (or equivalent department), confirming that you are enrolled on the final year of your education and giving your expected completion date. If you receive a conditional offer, you should present your degree certificate to the InnoEnergy Admissions Office before your admission in a specific programme can be formalized. The InnoEnergy Admission Office will forward this to your programme, and appointed Year 1 university, such that your admission can be completed.

ENGLISH PROFICIENCY

All applicants must provide proof of their English language proficiency, which is most commonly established through an internationally recognized test such as TOEFL, IELTS or University of Cambridge/ University of Oxford Certificates.

FUNDING DETAILS

KIC InnoEnergy grants scholarships to selected students. Scholarships include a monthly allowance during the 24 months of the training, as well as travel and installation costs in the case of non-European students. Students awarded a scholarship will have their tuition fees covered.

ACCREDITATION

On completion of the EMINE programme, a Master of Science degree will be awarded from the universities where studies were performed during year one and year two, i.e. a double-degree. A diploma from KIC InnoEnergy related to innovation and entrepreneurship will also be presented.

CONTACT

Program Director:
Emilie Ferrie
Tel: +33 (0) 4 76 82 63 41
emine@kic-innoenergy.com

For more information:
kic-innoenergy.com/emineprogramme

Partners

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