Practical information

The programme will have its first intake in 2020/22 and is open for all applicants around the world. The number of places in the programme being limited, admission is highly competitive.

Requirements

Degree

- Degree of bachelor in Science or Engineering
- Technical degree of bachelor in Mechanical Engineering, Electrical Engineering Technical degree of bachelor in Energy Engineering

Excellent level of english

Fees & scholarships

Participation fees

- From a Programme Country? 4,500 € / year
- From a Partner Country? 9,000 €/ year

EMJMD student scholarships

- Participation costs automatically paid
- Housing and general subsistence (monthly allowance of 1000 €)
- Travel and installation costs (up to €7000 a year, depending to the country of residence)

Diploma

- Master Énergie parcours «Decentralised Smart Energy System», Université de Lorraine, France and one of the following degree depending on the specialization track selected for the 3rd semester:
- Master of Science (Teknologie Masterexamen), KTH, Sweden
- MSc in Energy and Nuclear Engineering (Laurea Magistrale in Ingegneria Energetica e Nucleare), PoliTo, Italy
- Erasmus Mundus Master in Decentralised Smart Energy Systems, with Thermal Energy Engineering Specialization, UPC, Spain

densys.univ-lorraine.fr

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Partners

Core partners

Université de Lorraine

KTH Vetenskap och Konst

Politecnico di Torino

Universitat Politècnica de Catalunya BarcelonaTech

Academic associated partners

Liège université

ESADE Business School

Universidad de la República Uruguay

Universidad EAFIT

Université Internationale de Rabat L'université innovante

Université de Carthage

Taipei Tech National Taipei University of Technology

Industrial and non-academic partners

ArcelorMittal

Engie eps

iren

John Cockerill

KEMIWATT Your energy bank

Naturgy

RANOTOR

termofluids

VATTENFALL

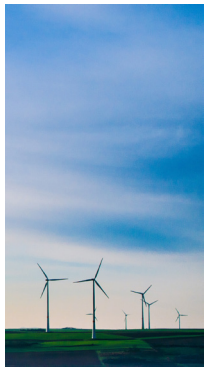
IRESEN Institut de Recherche en Energie Solaire et en Energies Nouvelles

eit InnoEnergy Knowledge Innovation Community

EUA European University Association

DENSYS

MASTER ERASMUS MUNDUS DECENTRALISED SMART ENERGY SYSTEMS



Co-funded by the Erasmus+ Programme of the European Union

What is DENSYS ?

Erasmus Mundus Joint Master Degree DENSYS is a collaborative two-year (120 ECTs) joint master degree programme with the goal to provide training in the inter-disciplinary fields of **Decentralised smart ENergy SYStems**. These systems play an increasing role in the perspective of a massive integration of the renewable energy sources into the energy system and the ongoing transition towards a low carbon society. This requires an optimized interplay between several energy carriers, namely electricity, heat, gas, hydrogen, chemicals, that have to be optimized,...

Overall goals

- To educate top skilled engineers with multiphysics approaches, who will be able to design, size, optimize and operate decentralised smart energy systems
- To train future researchers (for both public and private sectors), as decentralized energy systems still require strong R&D investments
- To offer a broad opening on the human and social sciences to enable the students in having a general understanding and a holistic view of the energy systems
- To provide to students an international network as well as a genuine European learning, an integrated multicultural and language experience.

A programme with innovative features

- The programme will provide to students a systemic overview and the ability to dialog with a large panel of specialists, while having solid core competences.
- Students are actors of the architecture of their education and thus of their skill profiles: they can choose a challenge topic, elective modules, a 3rd semester specialization track.

Two years in 4 leading European universities

Université de Lorraine
Nancy, France

Kungliga Tekniska högskolan-
Royal Institute of Technology
Stockholm, Sweden

Politecnico di Torino, Italy

Universitat Politècnica
de Catalunya
BarcelonaTech, Spain

3 specialization tracks

1st Semester	2nd Semester	3rd Semester	4th Semester
UL *(Nancy, France)*	UL *(Nancy, France)*	KTH *(Stockholm, Sweden)* POLITO *(Torino, Italy)* UPC *(Barcelona, Spain)*	Company or Research laboratory
Core Curriculum in Engineering (mechanical, chemical, electrical) Breadth courses, UL *60 ECTS*		Track "Decentralised Smart Energy Systems in a global energy system", KTH *30 ECTS* Track "Power-to-X, innovative pathways for energy storage", POLITO *30 ECTS* Track "Thermal Energy Management", UPC *30 ECTS*	Master thesis / Internship *30 ECTS*
30 ECTS	*30 ECTS*	*30 ECTS*	*30 ECTS*

a one year challenge topic

Opportunities for cooperation with industry

Immersive week in University of Liège

LIÈGE université

A one-week immersive session is organized in University of Liège (Belgium), acting as an associated partner of DENSYS, on the topic of digitalization and artificial intelligence applied to energy network management.

The session will lead by Prof. Damien Ernst, a world-class expert in the field.

3 Summer schools

The opportunity to deepen topics, like entrepreneurship and finance in the energy field (in ESADE Barcelona), hydrogen energy (UL, Nancy), power-to-X energy storage (PoliTo, Turin) and energy systems modelling (KTH, Stockholm).

During the summer schools, students will meet industrial and societal actors.

One summer school of one week will be focused on finance and business at ESADE Business School, Barcelona.

ESADE Business School