

ENSEM WEBSITE

Home:

<https://ensem.univ-lorraine.fr/en/engineering-school/>

International page:

<https://ensem.univ-lorraine.fr/en/study-at-ensem/>

INTERNATIONAL RELATIONS OFFICE

Contact:

ensem-international@univ-lorraine.fr

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Assistant: Latifa Zoua

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APPLICATION PROCESS

1. NOMINATION

Send an email with nomination table (semester and program of mobility at ENSEM, name of the student, email address, field and level of education) to:

drie-mobilite-contact@univ-lorraine.fr and copy ensem-international@univ-lorraine.fr

> Deadline for nominations:

- 1st semester (Fall): May 15th
- 2nd semester (Spring): October 15th

2. APPLICATION

After nomination, the student will receive an email with a link to register on our platform (Mobility Online) and with the instructions on the process (forms to fill and required documents to upload)

> Deadline for applications:

- 1st semester (Fall): May 31st
- 2nd semester (Spring): October 31st

PROGRAMS AVAILABLE FOR EXCHANGE STUDENTS

Program taught in English: Renewable Energy engineering

- 30 ECTS credits
- Fall or Spring semester
- Master level
- Minimum required level : to have validated at least 6 undergraduate semesters
- Link: <https://ensem.univ-lorraine.fr/en/exchange-courses/>

Programs taught in French: Energy Engineering or Digital Systems Engineering

- From semester 5 to semester 9 (3rd to 5th year of higher education)
- Link: <https://ensem.univ-lorraine.fr/en/ensem-degrees/>

Research projects: supervised in English in the fall or spring semester
(between 6 and 25 ECTS credits)

ACADEMIC CALENDAR

Fall semester: September to January (Semesters 5, 7 and 9)

Spring semester: Mid January to June (Semesters 6 and 8)

ACADEMIC INFORMATION

Full semester = 30 ECTS credits (about 400h)

All courses are available to exchange students.

Courses from different degrees and semesters cannot be mixed.

Grading systems: from 0 to 20. Pass grade =10

USEFUL INFORMATION

For more information, various French administrative procedures, accommodation, etc. please visit:

> <https://www.univ-lorraine.fr/welcome/en/home>

> Or our [FAQ](#)

Short Syllabus

RENEWABLE ENERGY ENGINEERING

LORRAINE
INP Ensem

ÉCOLE D'INGÉNIEURS CRÉÉE EN 1900

Fall Semester (September to December) or Spring Semester (January to May)



PROGRAM DESCRIPTION

The program in renewable energy engineering at ENSEM is aimed at making students acquire scientific and technical knowledge on various forms of renewable energy (wind, solar, hydrogen, hydropower)

It enables to acquire advanced knowledge in renewable energies, electrical and mechanical energy storage, control, smart and micro energy grids, forecasting and optimization of energy systems.

The training is very hands-on and students have access to specialized equipment: fuel cells, solar panels, wind turbines, hydropower turbines, grid converters for photovoltaic and wind power systems, multiphase electric machines, micro-grid integrated into our campus, or IoT simulator and sensor platforms (LoRa).

Renewable Energy Engineering

Course reference	Course name
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Lectures	Lab work	Student workload	Hours	ECTS	Pass Grade	More info
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EU Sources and Storage	
	Introduction to Hydrogen and Fuel Cell Technologies
	Storage Components (Electric Storage and Generation)
	Solar Photovoltaic Design and Installation

12	12	24	48	6	10	
6	2	8	16			
4	4	8	16			

EU Power to the Grid	
	Hydraulic and Wind Power
	Power Generation System connected to the grid

10	8	20	38	6	10	
12	10	20	42			

EU Smart Grids - Micro Grids	
	Electric Power Quality
	Energy Management and Microgrids
	Smart Grid Modelling and Co-Simulation

6	8	12	26	6	10	
8	8	12	28			
6	9	11	26			

EU Optimization	
	Optimal Design of a Local Energy Network
	Optimization of a Heat Network
	Control and Optimization of Energy Systems

2	6	6	14	6	10	
10	8	18	36			
8	6	14	28			

EU Language, Communication and Culture	
	French Language and Culture
	Cross-Cultural Communication
	Energy Economics : Issues Related to Renewable Energies

18	0	18	36	6	10	
5	0	5	10			
17	0	17	34			

TOTAL **400** **30**

LORRAINE INP Ensem

GRADUATE SCHOOL OF ENGINEERING SINCE 1900



École Nationale Supérieure
d'Électricité et de Mécanique



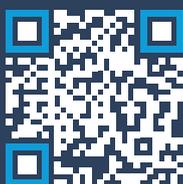
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ensem.nancy

Live an **INTERNATIONAL EXPERIENCE IN FRANCE**



Come to ENSEM !



NANCY, IN THE HEART OF EUROPE

FROM NANCY



Paris
1h30



Germany
1h30



Luxembourg
1h30



Belgium
1h40



A CITY FULL OF CHARM AND HISTORY

Unesco World Heritage site [Place Stanislas](#),
[Art Nouveau](#) buildings,
[Medieval](#) old town,
Numerous [parks and museums](#).



NANCY, ONE OF THE BEST STUDENT CITIES

With more than 52000 students, Nancy is the perfect city to study. Everything is done so that students can live, work and feel at home. Student life is rich and dynamic.

The number of students in the city means many services are dedicated to facilitate their daily life



ACCOMMODATION:

Many student residences with very affordable rents



RESTOS U:

Student cafeterias and restaurants on campus and all around the city



TRANSPORTS:

Buses and tramways right outside ENSEM



SPORTS:

Practice more than 50 sports activities for free



RENEWABLE ENERGY ENGINEERING

Program in English for exchange students • Fall or Spring semester

Wind, solar, hydrogen, hydropower:

By completing the program in renewable energy engineering at ENSEM you will acquire scientific and technical knowledge on various forms of renewable energy.

More specifically, you will have the opportunity to acquire advanced knowledge in :
renewable energies, electrical and mechanical energy storage, control, smart and micro energy grids, optimization of energy systems.



**energy
platform.**

technological platforms



**hydrogen
fuel cells.**

technological platforms



**wind
turbine.**

technological platforms



**smart
grid.**

technological platforms

Your training will be very hands-on and you'll have access to specialized equipment :

Fuel cells, solar panels, wind turbines, hydropower turbines, grid converters for photovoltaic and wind power systems, multiphase electric machines, micro-grid integrated into our campus, IoT simulator and sensor platforms.

COURSES (LECTURES, LABS AND PROJECTS)

SOURCES AND STORAGE 80H - 6 ECTS

- Introduction to hydrogen and fuel cells technologies
- Storage components (electric storage and generation)
- Solar photovoltaic design and installation

POWER TO THE GRID 80H - 6 ECTS

- Hydraulic and Wind Power
- Power generation system connected to the grid

SMART GRIDS - MICRO GRIDS 80H - 6 ECTS

- Electric power quality
- Energy management in microgrids
- Smart grid modeling and co-simulation

OPTIMIZATION 80H - 6 ECTS

- Optimal design of a local energy network
- Optimization of a heat network
- Control and optimization of energy systems

LANGUAGE, COMMUNICATION AND CULTURE 80H - 6 ECTS

- French language and culture
- Cross-cultural communication
- Energy economics: issues related to renewable energies



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