Sup’EnR
School of engineering in renewable energies

Solar furnace of Odeillo PROMES-CNRS © copyright G. Olalde
Sup’EnR is the only school of engineering in France that is specifically dedicated to power engineering and renewable energies.

Sup’EnR is a public institute accredited by the French Ministry of Higher Education and Research and the Commission des Titres d'Ingénieur – the main committee responsible for the evaluation and accreditation of higher education institutions for training professional engineers in France. As a training programme delivered by the University of Perpignan, it benefits from the specific environmental and energy research facilities that the University has to offer.

The training programme

The programme is delivered over five years following a scientific baccalaureate. Option to join at the start of the third year, as well as during the fifth year as part of an international exchange (teaching in the fifth year is delivered entirely in English).

Year 1 in Toulouse
(INSA – national institute of applied sciences)
- Mathematics
- Thermodynamics
- Physics, chemistry, biotechnologies
- Information, management, communication
- Professional project development
- Foreign languages

Year 2 in Toulouse
(INSA – national institute of applied sciences)
- Mathematics, computer science
- Thermodynamics, energetics
- Energy technologies
- Physics, chemistry
- Professional project development
- Understanding of business and communication modes
- Foreign languages

Year 3 in Perpignan
- Energy sources and energy context
- Thermodynamics and energetics
- Heat transfer and fluid mechanics
- Materials and mechanics
- Digital calculations and computer programming
- Electrical machines and power electronics
- Languages, business economics, etc.

Year 4 in Perpignan
- Energy processes, efficiency
- Eco-design and life-cycle assessment
- Energy technologies (renewable energies, fossil fuels, fissile fuels)
- Structural mechanics, building energy performance
- Signal processing, metrology, sensors
- Automation and process control
- Languages, project management, regional development, etc.

Year 5 in Perpignan
- Energy storage
- Co-generation and hybridisation
- Electricity and smart grids
- Supervision and management of energy systems
- Concentrated solar energy processes
- Positive energy building
- Energy economy and market
- Urbanisation, spatial organisation
- Innovation, patents, etc.

Admissions

Sup’EnR, one of the INSA group’s partners.
Prospective students should apply via:  http://admission.groupe-insa.fr/
Expertise acquired

Throughout their engineering degrees, students also attend courses in human and social sciences (languages, management, law, communication). These are essential for the development of renewable energies.

At Sup’EnR, because of the extremely diverse nature of renewable energies, students will cultivate expertise in a wide range of areas. On completion of their training, Sup’EnR engineers are able to:

- design, locate and integrate energy conversion, transport and storage systems
- analyse, diagnose, manage and/or optimise complex energy conversion, transport and storage facilities
- understand and analyse societal, financial and environmental challenges associated with energy production, conversion, storage and consumption
- join an organisation, manage it and help it to develop
- use modern communications means.

Career opportunities

Sup’EnR trains energetics and applied industrial and building process engineering students, using a global sustainable development-approach.

Jobs:

- Energy engineer
- Heating and process engineer
- Renewable energy systems design engineer
- Research officer
- Renewable energy development manager
- Renewable energy project manager

These career opportunities are available with a number of major groups and SMEs. But students also have the option to set up their own companies. The University of Perpignan provides students with access to its own innovative company incubation service and provides start-up project leaders with support. A number of start-up companies have already been set up this way: Coldway, ETC, EnergieR, etc.
Training and research

The training programme is supported by the PROMES and ART-DEV laboratories.

PROMES conducts research into solar energy and has France’s only concentrated solar energy platform – at the Odeillo solar furnace and the Themis solar tower. This way, when students conduct technical visits and learn on site, they acquire full-scale technological and theoretical knowledge. The SOLSTICE laboratory of excellence, managed by PROMES, provides its support in relation to the Energy and Materials platform.

ART-DEV has specialist expertise in urban planning, regional development, resource management and development.

The industrial network

Sup’EnR’s engineering students can take advantage of a wide network of industrial partnerships that have been consolidated over more than 40 years of the PROMES and ART-DEV laboratories’ public-private research collaborations: EDF, ENGIE, VEOLIA, St Gobain, CNIM, Europlasma, La Compagnie du Vent, EXOSUN, Coldway, ETC, EnergieR, etc.

Sup’EnR is supported by the DERBI competitiveness cluster for renewable energies.

At international level

Given the global considerations involved in the energy transition, Sup’EnR naturally has an international outlook. All engineering students have to spend a minimum of 12 weeks abroad. Students are able to take advantage of numerous networks of teaching staff and researchers to undertake internships in Sweden, Spain, Italy, Germany, China, Singapore, the US, Mexico, Chile, Peru, Australia, United Arab Emirates, Burkina Faso, etc.

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