

Sciences, Technology and Health

Apprenticeship Education Program Ingénieur diplômé (Engineering Master Degree) Major in Energy



PRESENTATION OF SUP GALILÉE

> Sup Galilée is the engineering school of Université Paris 13. Since 1974, the School has trained more than two thousand engineers. It provides advanced education in a high level scientific environment, with seven top performance laboratories in direct contact with major companies.

The School now provides a "sandwich" program to train Engineers that will specialize in Energy, alternating working sessions in a real professional environment with courses at the University.

EDUCATIONAL OBJECTIVES

The energy sector is going through rapid changes due to new environmental regulations. Operators and contractors are obliged to reconsider their different methods and systems of producing, transporting and using energy. A specific engineering approach is urgently needed. Energy is a huge sector and involves a large range of businesses and activities, trades and disciplines. In addition to a general education in energy systems (production, conversion, transport, storage), the "sandwich" program of SupGalilée offers two specialties:

- > Energy for the manufacturing industry: the focus is on developing optimal solutions, given the context and the application, in terms of energy systems: fossil, electricity, renewable, etc.
- > Energy for the construction industry: develop and implement tools and methods to improve the energy efficiency of existing or new buildings.

ADMISSION REQUIREMENTS

Selection is based on qualifications and interviews. Applicants must have successfully completed a two-years cycle (bachelor or equivalent to French "BTS" or "DUT" or "classes préparatoires Adaptation technicien supérieur") in:

- > Physical Measurement Technologies, Heat, Environment, Fluid Mechanics, Energy
- > Science (Physics, Chemistry, Mathematics...)

In case you are not sure your situation meets these requirements, please contact the School office for further information (phone and e-mail below).

APPRENTICESHIP

> Students alternate periods of "real" work in a company and classroom education at Sup Galilée, thus confronting their professional life with a theoretical approach. This three-years program provides a paid position that supplies the same social benefits as any employment contract. Once the course is fully completed, the professional experience is considered as a real asset in terms of career opportunities. Sup Galilée is partner of CFA 2000 (the French Center for Apprenticeship).

The title "Diplôme d'Ingénieur" which is awarded after three years of successful apprenticeship is fully accredited by the French "Commission des titres d'ingénieurs" (CTI).

APPLICATION

> Application forms and procedures are available beginning of february on: www.sup-galilee.univ-paris13.fr



Program Organization

> EMPLOYMENT PROSPECTS

- Process management for companies in the energy sector, maintenance and operation.
- Project management: research for engineering companies or for contractors or for clients, research and development for companies designing and manufacturing climate control equipment.

At the heart of today's preoccupations, apprenticeship training in Energy Engineering is focused on developing skills and knowledge required in various industries:

- Power generating or consuming industries, linked with renewable sources of energy (wind, solar, biomass...) or fossil sources (gas, oil, coal).
- Service companies, engineering consulting firms, public regional or local authorities
- General contractors (residential, services, industry).

> CONDITIONS

- Duration: three years

- Number of hours: 1 800

- Knowledge evaluation: Projects and professional achievements are assessed. All courses are assessed on a regular basis. A jury of professors and tutors validates each year.

The title of "Ingénieur" in Energy is awarded by the School Jury after three successful years. Full proficiency in English (level B2+) is required.

> PROGRAM CONTENT

• GENERAL EDUCATION

Each semester includes:

• ONE ENTERPRISE "EDUCATIONAL UNIT" (EU).

This EU assesses the professional skills acquired by the student during his internship in his company

• ONE EU CORPORATE CULTURE AND LANGUAGE:

English, Presentation and communication skills, Corporate Management, Quality, Security, Environment, Labor/ Employment Law, Intellectual property rights

• SPECIALTY COURSES

1 FIRST YEAR

First semester

- EU Physics
- EU Sciences for the engineer

Second Semester

- EU Thermodynamics
- EU Fluid Mechanics

2 SECOND YEAR

First Semester

- EU Transport and Transfer Phenomena
- EU Electric and automatic engineering

Second Semester

- EU Thermodynamic cycles and applications
- EU Internal combustion Engines
- EU Turbines
- EU Energy Storage
- EU Solar energy

3 THIRD YEAR

First Semester

Common core courses:

- EU Energy resources and systems
- EU Environmental impacts and industrial security in energy systems and processes

- EU Energy markets

- EU Integration of energy systems

Option A: Energy for Manufacturing Industry

- EU Introduction to unit operations
- EU Process sizing
- EU operations
- EU Process simulation

Option B: Energy for Construction Industry

- EU Building structure
- EU Introduction to Architecture
- EU Building user's comfort (light, sound, air)
- EU Energy diagnostics
- EU Legislation on building energy performance
- EU Thermal insulation of buildings

Second semester

Six-months internship in company

TRAINING SESSIONS VERSUS WORK SCHEDULE

Apprenticeship in Energy – First Year

September	October	November	December	January	February	March	April	May	June	July	August
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

Apprenticeship in Energy – Second Year

September	October	November	December	January	February	March	April	May	June	July	August
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

Apprenticeship in Energy – Third Year

September	October	November	December	January	February	March	April	May	June	July	August
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

Presence in University

Presence in Company

Director of Institut Galilée Frédéric Roupin • Associate Director, responsible for the Engineer School Apprenticeship Program Jean-Philippe Passarello

School Office H 102, Institut Galilée - Université Paris 13 - 99, avenue Jean-Baptiste Clément 93430 Villetaneuse
 Phone ++33 (0) 1 49 40 35 52 - Fax ++33 (0) 1 49 40 40 43 - Mail energetique.sup.galilee@univ-paris13.fr

www.sup-galilee.univ-paris13.fr