CENTRALE LYON

Energy Engineer

Degree level: Specialty engineering
Training time: 3 years
Language: French
Status: Sandwich courses
Campus: Lyon-Ecully Campus

Objectives

The **"Energy facility design"**specialty engineering course in partnership with theITII de Lyon is carried out under a three-year apprenticeship contract. This course responds to an undeniable need in the energy sector for engineers to design installations for the efficient production, distribution or operation of energy on the scale of territories, industrial sites and buildings.

The energy sector is facing many challenges, and is at the heart of the energy transition and decarbonization. Replacing existing installations with those that have less impact on the environment calls for new designs that integrate recent and ongoing developments in the energy, environmental and technological context.

To meet these challenges, energy plant design engineers need to couple traditional skills in different scientific fields (mathematics, electrical engineering, thermal engineering, thermodynamics, mechanics, automation) with a culture of current and developing energy sectors from a technological, economic, environmental and societal point of view.

The work-study curriculum aims to acquire 4 blocks of skills:

- Identify, understand, analyze and describe the needs of an energy system in a building, an industrial facility, or a territory, taking into account environmental and societal aspects.
- Research and propose concepts of technical systems and organizations, choose and justify the most relevant concept(s), to respond to energy issues.

- Coordinate and carry out study projects leading to the complete definition of elements of an optimized energy system.
- Identify the technical, economic and ethical value of its professional practices and those of its collaborators to adjust the organization, encourage good practices, and establish mutual trust within this entity

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Program

Teaching Alternation rhythm Projects

Academic training is delivered over approximately 1,650 hours of face-to-face teaching, enabling students to acquire:

- A **multidisciplinary scientific foundation** in mathematics, mechanics, electrical engineering, thermodynamics...
- A **high level of English** to operate in an international context
- A **understanding of the technologies used** and the **economic and political context**of each energy sector
- A **mastery of IT tools** and **design office methods**
- A training in **leadership**and **management** (team management, project management, business management...)

31%
Engineering Sciences
17%
Engineering technology
18%
Technology of Installations
10%
Design office tools & methods
6%
Social issues
9%
Management training
9%
English

Discover the detailed program

Alternating periods of 2 to 3 weeks at the company and at the training center over the first 5 semesters. The final semester is spent working on a final project at the company.

During the course, students carry out three projects enabling them to put their learning into practice in a professional context.

- **First project**: familiarize themselves with the company's technology and **implement its design techniques**. The project also includes an organizational aspect, providing an insight into projects carried out in a design office.
- **Second project**: **apprehend relationships with customers, suppliers and experts**. Technical expectations are more advanced: developing models, ensuring simulations to evaluate the performance of proposed solutions.
- **Third project**: the engineering-level Travail de Fin d'Études (TFE) with more autonomy and responsibilities. Precise results are expected within controlled deadlines.

Diploma and certification

This programme leads to a national engineering degree, regulated by the State and accredited by the Commission des Titres d'Ingénieur.

DIPLÔME D'INGÉNIEUR CONTRÔLÉ PAR L'ÉTAT

Cti Commission des titres d'ingénieur

Career opportunities

Graduates work in companies in the energy sector, building and public works, design offices, consulting firms, local authorities, and research and teaching organizations.

- Design engineer
- Business manager
- Project engineer
- Prospecting manager
- Consulting engineer
- R&D engineer

Focus

Energy engineering training is the fruit of collaboration between Centrale Lyon and ITII de Lyon. This training is accessible via apprenticeship and VAE (Validation des Acquis de l'Expérience).

The ITII accompanies candidates, with the Institut des Ressources Industrielles, in their search for a company:

- Advice and distribution of CVs,
- Access to positions on offer,
- Job Dating,
- Setting up and monitoring the apprenticeship contract.

More information

Admission requirements and application

Prerequisites

The course is open to students up to the age of 29 on the start date of the apprenticeship contract and holding a bac+2 diploma in one of the specialties related to the course.

DUT / BUT	DUT / BUT GEII I GC-CD I GMP I MTEE I MPH I SGM
BTS	BTS ATI I CIRA I CPI I CRSA I Élec. I FED A-B-C I MCI |MS B

LICENCE	Specialization in Sciences and Technologies Specialization in Engineering Sciences Specialization in Electronics, Electrical Energy, Automation Specialization in Mechanical Engineering and Civil Engineering
PREPA	ATS ingénierie industrielle Cycle préparatoire Cap ECL

Recruitment stages

- Early March: Submission of applications
- Mid-March: Assessment on file
- From late March to mid-April: Additional assessment through online tests (English - mathematics - mechanics - electricity) and a personal interview
- May-June: If the eligibility panel accepts your application, a place on the course will be reserved as soon as you return a commitment from a company to offer you a 3-year apprenticeship contract enabling you to acquire the skills of the diploma, subject to available places.

Application on the ITII Lyon website

Tuition fees

As the course is offered exclusively as an apprenticeship, no registration fees are required.

Application fees are charged by ITII Lyon

- Non-scholarship holders: €65
- Scholarship holders: €35

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Administrative contact

Scolarité - Cycle ingénieur de spécialité Énergie

Informations et inscriptions

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Educational contact

Constant Damien

Enseignant

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Useful links

- ITII School
- Application portal