CENTRALE LYON

Mechanical Engineering

Degree level: Specialty engineering
Training time: 3 years
Language: French
Status: Student, Apprenticeships, professional training
Campus: Saint-Etienne Campus

Objectives

This CTI-accredited course enables students to **develop, model, simulate and design new industrial products and processes** to meet tomorrow's challenges.

The specialization focuses on **virtual engineering, eco-design and eco-manufacturing of innovative products**, **management and optimization of industrial systems** thanks to cutting-edge digital engineering skills while integrating societal and environmental requirements.

Students will acquire in-depth expertise in the various fields of industry whether scientific, technical, organizational or managerial.

Mechanical Engineering engineers are able to:

- eco-design & eco-fabricate the products of tomorrow;
- model, calculate and simulate digitally using and developing virtual engineering tools;
- manage and optimize production systems and the supply chain for operational excellence.

Program

Student status Under apprentice status

International Mobility

A stay abroad **in the form of an internship or academic exchange** allows you to both consolidate your language skills and open up to other cultures. A minimum of one semester's mobility abroad is a requirement for graduation. It can take the form of an Erasmus academic stay, an internship or a double degree in one of our 117 academic partners in 34 countries.

Languages

Language courses are designed to enable linguistic fluency in a professional environment. A **TOEIC certification is compulsory for graduation**, for which intensive one-week preparation courses are included in the final 3 years of training. A second language is also part of the training program.

Bridges to the Generalist Program

In the third year, engineering students recruited after the baccalaureate, as well as students recruited after two or three years of higher education who did not take the Centrale-Supélec entrance exam, have the opportunity to join Centrale Lyon and continue in the generalist engineering program (integration into the first year of the engineering cycle). Selection is based on a dossier and interview.

In 5th year, depending on their career plans, engineering students can choose from one of the 5th year specialties offered by Ecole Centrale de Lyon and apply for this course. It is also possible to do their 5th year at another school in the College of Engineering, namely École des Mines de Saint Étienne, INSA, ENTPE or emlyon.

Projects

An engineer will be required to solve the concrete and complex technical problems presented to him/her, through the management of projects integrating technical, organizational and financial dimensions.

Several integrative projects mark the course:

- **the 5th semester project** aims to apply scientific and technical skills to a multidisciplinary problem within the student engineer's chosen profession (eg: from

architect's study to site organization in Civil Engineering);
- **the 8th semester project** aims at innovation and development in an entrepreneurial logic by associating two complementary professions (e.g. Mechanical Engineering + Civil Engineering, Civil Engineering + Sensory Engineering, etc.) in order to develop innovation skills in a multicultural environment;
- **the 9th semester project** is dedicated to the discovery of a research and innovation activity linked to Centrale Lyon ENISE's areas of expertise.

2 Apprenticeship training path

Innovative systems design

- Define product specifications, taking into account design and sensory aspects.
- Anticipate and propose innovative technological solutions, taking into account industrialization constraints, with objectives in terms of cost, quality, deadlines and the environment.
- Manage projects in teams with an international dimension.

Innovative manufacturing and industrial control

- Model, calculate and simulate digitally using and developing virtual engineering tools and optimize production systems.

Apprenticeship organization

The 3 years of training are organized into 6 semesters with around 1800 hours of academic training.

The training-company alternation period is progressive:

- 5 periods of 4 and 7 weeks at Centrale Lyon ENISE in 1st year
- 5 periods of 3 to 4 weeks at Centrale Lyon ENISE in 2nd year
- 3 periods of 4 weeks at Centrale Lyon ENISE in 3rd year

A 12-week international course is compulsory, including a minimum of 9 weeks of physical mobility abroad (during company periods).

Personalized support for work-study students throughout their training, through a dual company-school tutoring program.

Apprenticeship highlights

- Free, degree-granting training
- Company assignments that foster responsibility
- Training in cutting-edge fields linked to Centrale Lyon ENISE research areas
- Training designed by companies, conceived and validated by a grande école
- 3 years of experience that accelerate professional integration
- A dual tutoring system at the company and at Centrale Lyon ENISE

.

Diplôme et certification

This program awards a national engineering diploma, supervised by the French government and accredited by the "Commission des Titres d'Ingénieur".

DIPLÔME D'INGÉNIEUR CONTRÔLÉ PAR L'ÉTAT

Cti Commission des titres d'ingénieur

Career opportunities

Jobs

- Production engineer
- Research and development engineer
- Quality engineer

- Methods and industrialization engineer
- Design engineer
- Maintenance engineer
- Consultant engineer

Focus

Strong industrial roots

Internships, professionalization contracts, apprenticeships, professional involvement in training, industrial contracts... so many partnership projects with all the socio-economic players that testify to the strong links between Centrale Lyon ENISE and the business world.

Several sectors are represented in our students' career paths, including metallurgy, the automotive, aeronautics, naval and rail industries, as well as the medical and paramedical industries.

Admission requirements and application

Requirements

- Admission Bac + 2 or Bac +3 (Cycle préparatoire intégré Centrale Lyon ENISE, Cycle préparatoire CapECL, CPGE, BUT 2ème ou 3ème année de BUT, licence 3).

Application

Application by dossier on the dedicated platform:

Apply

To apply for an apprenticeship, you must be under 30, and hold at least 120 ECTS (European) credits corresponding to two fully validated years of post-baccalaureate

higher education.

Tuition fees

- **Under student status:** Registration fees are set nationally (€2,572 for 2024-2025 plus CVEC at €103). CROUS scholarship students are exempt from registration fees and CVEC. In addition, financial aid from the school may be granted, accessible to both scholarship and non scholarship students.
- **Under apprentice status:** Training is free for students on work-study contracts.

Administrative contact

Scolarité Centrale Lyon ENISE

Informations et inscriptions

scol@enise.fr

Useful link

- Application