

3-year engineering
course
Integrated Preparatory
Programme
The Gay-Lussac Federation

ENSCL

Chemical engineer
for a sustainable world

ENSCL, a Centrale Lille Institute school

4 engineering schools

2 campuses

2 200 students

100 corporate partners

160 academic partners

Centrale Lille Institut, a major player in higher education and research

As a public higher education and research institution, **Centrale Lille Institut has been training top-level engineers and researchers since it was founded in 1854.**

It is made up of four engineering schools (École Centrale de Lille, which trains general engineers, École Nationale Supérieure de Chimie de Lille (ENSCL), which trains chemical engineers, IG2I, which trains digital engineers, and ITEEM, which trains entrepreneurial management engineers) and brings together nearly **2,200 students** on its **two campuses**.

Centrale Lille Institut offers **14 Masters courses**, two of which are international. Through its three doctoral schools, the institution also confers doctorates.

The Institute plays a major role in innovation and research. Its **seven research laboratories** carry out innovative projects and contribute on a daily basis to the development of scientific knowledge and innovation within businesses and society.

Become a chemical engineer for a sustainable world

« With more than 4,000 graduates since 1894, the École Nationale Supérieure de Chimie de Lille offers **multidisciplinary training in chemistry.**

It provides its students with solid knowledge and skills in materials, formulation, sustainable chemistry and processes and catalysis, as well as languages, social sciences, management, project management, cost management and business knowledge. This interdisciplinary approach enables its students to integrate perfectly into today's industrial world, making them responsible engineers.

The teaching team is involved in a number of internationally renowned research laboratories, enabling it to keep abreast of scientific and technological innovations. ENSCL engineers are called upon to carry out a wide variety of functions in a large number of industrial fields. **They occupy key positions in chemicals, pharmaceuticals, cosmetics, paints, polymers, agri-sourced products, energy, metallurgy, pollution control, waste treatment, etc.**

Lille is at the heart of Europe. Easy to get to, it's a pleasant town to live in, so don't hesitate to join us - we look forward to welcoming you! »

Rose-Noëlle VANNIER
Director of ENSCL



The **Fédération Gay-Lussac**, of which ENSCL is a member, brings together 19 other French chemistry and chemical engineering schools. The federation is developing a **skills-based approach** to strengthen the bridges between engineering schools and the socio-economic world, and thus work on the future professions and challenges of the sector.

All the FGL schools pool their resources to offer students the best scientific, technological and managerial training adapted to the national and international industrial world, and provide them with solid training in research in areas of excellence.

After a preparatory course, three years to become a chemical engineer

The common base

The ENSCL engineering cycle covers the major areas of chemistry, providing you with the **scientific and technical skills** you need to become a chemical engineer.

This scientific training is complemented by training modules in management, **project management**, **law**, marketing, production management, **industrial safety** and **sustainable development**, etc.

The aim is to **develop your open-mindedness and people skills!**

Languages also play an important role in engineering training at ENSCL, with students **learning two or even three modern languages**.

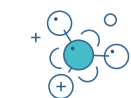
During each year of the course, students complete a **work placement** that enables them to apply the knowledge and skills they have learned at school in a professional context.



Training at ENSCL is designed to be in phase with the **industrial challenges** of our time and is based in particular on **three foundations**:



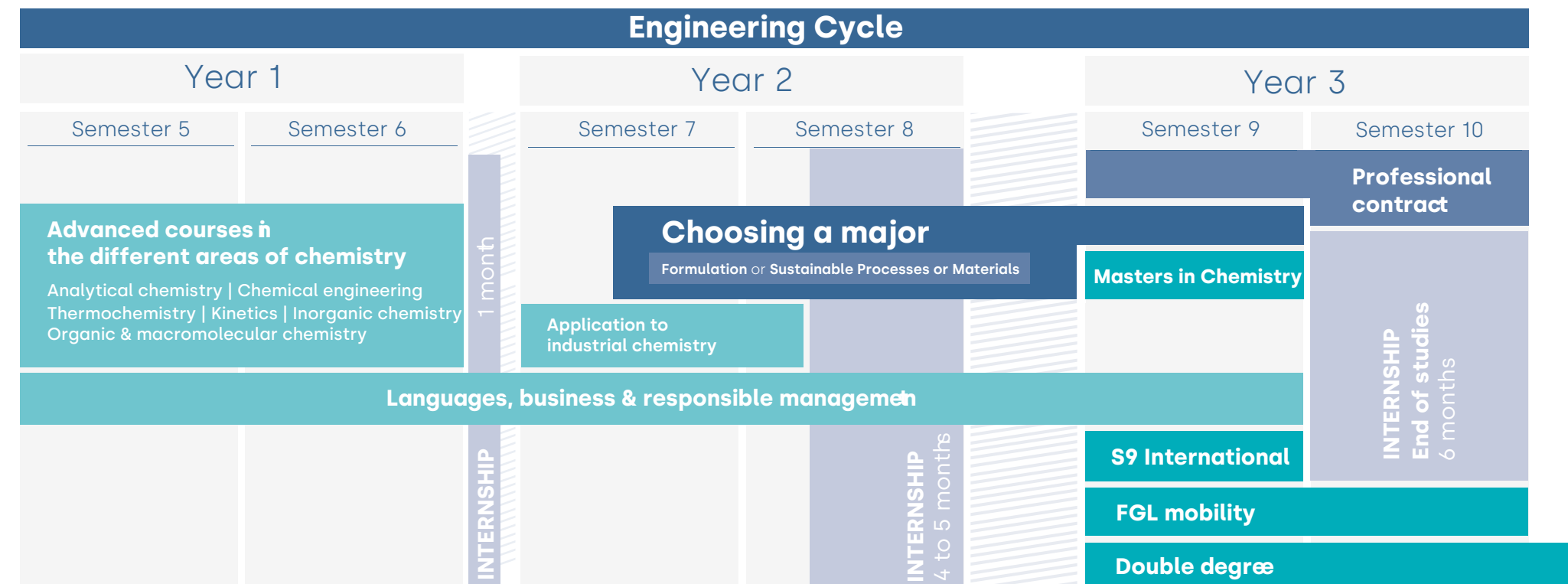
A strong **corporate focus**



A strong **research base**



A strong **international outlook**



Active learning and teaching tailored to the needs of industry

From the 1st year of the engineering cycle, every effort is made to ensure that **each student plays an active role in his or her training**. Whether it's during practical work sessions, cross-disciplinary projects or during your work placements, you'll always be able to make the connection between theory and practice and learn how to work in **project mode**.

With this in mind, ENSCL gives students the opportunity to work in real-life situations and provides them with modular workspaces within the school itself.

A learning centre located on campus gives students access to a wide range of resources, both live and online, covering many subject areas.

All of these programmes will enable you to develop your **soft skills**, which are highly valued by companies, such as autonomy, curiosity, creativity and team spirit.

Choosing a major to specialise in

350
hours
over
the course

From the 2nd year onwards, you choose a **major** from among the three on offer. This will **guide your profile as a future engineer and is a real asset** when you enter the job market or continue your studies.

1

Formulation The science of mixtures

Are you interested in cosmetics, perfumes, paints, inks, food processing, agrichemicals or pharmaceutical products? The Formulation major is for you!

You will learn how to design high-performance, economical everyday products that are more respectful of people and the environment, using chemical specialities derived from renewable resources.

You will be able to establish the relationships between the chemical structures of raw materials and their physicochemical and functional properties (foaming and emulsifying, detergent, thickener, colouring agent, dispersant, solubiliser, odorant, and so on.). Using conceptual, methodological and experimental tools, and mastering advanced techniques, you will be able to characterise and predict the specific properties of chemical specialities and formulations in order to optimise them, understand and rationalise the phenomena observed in the complex matrices of formulated products, whatever their form (solutions, emulsions, foams, gels, aerosols, etc.).

This major will give you the opportunity to work in research and innovation, production, quality or marketing, in France or abroad, thanks to your multicultural outlook and your solid, unique skills.

Formulation
Physicochemistry
Science of mixtures
Emulsions
Colloids



2

Microstructure
Application properties
Reliability
Damage
Characterisation

Optimisation and reliability of materials Designing the materials of tomorrow

The materials major trains engineers in the field of materials who are capable of working in industry as materials chemistry engineers, project engineers, quality engineers, test and trial engineers, materials and process managers, plastics engineers, metallurgy engineers, etc., focusing on materials activities, as well as continuing on to PhDs and research careers in R&D or academic research.

The major covers in greater depth the concepts of materials development and transformation. It looks at the behaviour of materials, their degradation and recyclability. It offers a complementary approach between experimentation and modelling and a project management approach in general and scientific project management in particular.

The major offers a range of training courses in materials in line with the needs of the job market. It opens the door to a wide range of professions and industrial and economic sectors: energy, transport (particularly aeronautics and automotive), construction, pharmaceuticals, biomedical and chemicals, etc. It provides access to positions in major institutional or industrial groups.

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«I chose the materials major because it involves environments that particularly interest me: why do we choose this type of material and not another? How can a temperature effect have such an impact on a material? The major allows us to use characterisation equipment that I really like, such as X-ray diffraction and microscopy, which are very powerful techniques for understanding materials.»

Loïc, class of 2024

3

Sustainable chemistry and processes for industry

Reducing the environmental footprint of chemicals

Would you like to help build a more sustainable industry?

The Sustainable Chemistry and Processes for Industry major provides you with the skills you need to meet the energy and environmental challenges facing the world, and the chemical industry in particular.

At the end of the course, you will be able to exploit the specific features of alternative resources (waste and biomass) to make better use of them, recycle them and eco-design more efficient and virtuous products.

You will learn how to transform matter and produce energy using processes that are more respectful of Man and the Environment (catalytic processes, bioprocesses and green plastics, etc.) to enable the chemical industry to succeed in its decarbonisation. You will learn about innovative methods for treating gases, water and soil in order to reduce the impact of chemistry on the environment.

This major will provide you with cross-disciplinary training in the challenges facing the chemical industry, enabling you to work in a variety of areas covering production (continuous improvement, quality, etc.), research and development and sustainable development.

Recycling

Clean processes

Eco-design

Environment

”

« Right from the start of my career, I already had a fairly clear idea of the job I wanted to do, which enabled me to make strategic choices. My goal was to work in environmental management, a field that supports manufacturers in their environmental approach.

It was with this objective in mind that I chose my major.

I chose the CPDI (Chemistry and Sustainable Processes for Industry) major because it corresponded perfectly to the skills and knowledge required for this profession. The multidisciplinary approach of this specialism has given me a solid basis for understanding industrial projects (production processes, technological innovation) and for assessing their impact on the various environmental matrices (air, water, soil).»

Eliza, class of 2024

A strong corporate focus

Work placements are an integral part of the ENSCL engineering cycle. Each year, students discover the world of business and **apply the knowledge and skills they have acquired during their training**. In addition to these essential work placements, companies regularly take part in **conferences, projects and company forums** at the school. ENSCL graduates' ability to **adapt and work in project mode make them highly valued professionals in the business world**.

A minimum of
11
months
work experience

Between the end
of June and the
end of August

In 1st year
Operator and introduction to the
company work placement (1 to 2 months)

This first course will bring you into contact with industrial reality. It gives you an insight into the human and organisational dimensions of your future career as an engineer.

Between April
and the end
of August

In 2nd year
4 to 5-month assistant engineer work
placement

During this work placement, you will take personal responsibility for a specific subject. You'll gain greater autonomy and expand your scientific knowledge, while learning about project management.

In 3rd year
6-month end-of-studies
project

This is a fundamental work placement that will give you the opportunity to take on the role of engineer in a broadly defined assignment. You will develop your initiative, sense of responsibility and autonomy and put into practice your technical, scientific, people, and managerial skills

Between the beginning of
March and the end
of September

The strength of the network!

Whether you need help finding work placements, taking your first steps in the world of work or defining your career plan, the Alumni network is there to help! The ENSCL Alumni association is heavily involved in promoting the professional integration of students and young graduates, in particular by organising afterwork sessions, company visits, and the business forum.



A different 3rd year!

ENSCL offers you the opportunity to further personalise your course by doing all or part of your 3rd year outside the school.

The Professionalisation contract

Student engineers can complete their 3rd year of engineering studies under a 12-month professionalisation contract.

The professionalisation contract is a sandwich course with a company. The student is then an employee of the company.

To support you throughout your work-study programme, two tutors are assigned from the beginning of the contract:

- a company tutor to help you integrate into the company and find out about your responsibilities ;
- a school tutor responsible for ensuring that the content of the assignments given by the company tutor align with the skills required to obtain the diploma and for supporting you in your work-study programme.

Remuneration for work-study students

Work-study students are paid according to their age and level of qualification. For young people aged between 21 and 25: 80% of the minimum wage, unless contractual provisions or agreements are more favourable.

RHYTHM

From 1 September to 28 February: 3 days at ENSCL + 2 days at the company

From 1st March to 31 August / school holidays: Full time at the company

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«The sandwich course was an obvious choice for me because I've always preferred to be hands-on. From an academic point of view, I'd say that the sandwich course really allows you to realise the usefulness of certain courses, which is motivating. On the professional side, it allows total immersion in corporate life and the development of skills that are different from those learnt at school.

In my second year, when we had our first courses related to the majors, I decided to go on and do a degree in formulation. In choosing this major, my aim was to work in R&D so as to maintain a link with the laboratory. I found a work-linked placement in the paint industry that I was really passionate about, and today I've got a permanent contract as a formulation engineer with the same company! »

Thomas, class of 2024

An extra diploma

You also have the option of studying for a **master's degree in chemistry** at the same time as your engineering degree.



Gay-Lussac Federation mobility

The Fédération Gay-Lussac (FGL), of which ENSCL is a member, brings together the 20 French chemistry and chemical engineering schools. You will have the option of completing your 3rd year at another FGL school, in order to follow a speciality not offered at ENSCL.

More info on www.20ecolesdechimie.com

Double degrees

In France with IFP School

Student engineers can complete their degree course with an 18- to 22-month work-study programme at IFP School, under the terms of a double degree agreement. Located in the Paris region, this engineering school specialises in energy innovation and sustainable mobility.

10
DOUBLE
DEGREE
AGREEMENTS

Going abroad

ENSCL offers the possibility of double degrees, enabling students to obtain both the engineering degree of ENSCL and that of the partner institution. To obtain a double degree, you will spend two years in Lille, followed by two years at the international university.

Germany: Universität Regensburg

Brazil: Escola Politecnica da Universidade de Sao Paulo, Universidade Federal de Uberlândia, Universidade Federal do Amazonas

Canada: École de Technologie Supérieure de Montréal, Université du Québec à Chicoutimi, Université de Sherbrooke

United States: The University of Toledo

Japan: Doshisha University

Spend a semester abroad!

Semester 9 can be spent abroad, at a partner university in Europe or anywhere else in the world.

Partner countries

	Germany		China		Indonesia		Netherlands		Taiwan
	Argentina		Colombia		Ireland		Poland		Thailand
	Austria		Croatia		Italy		Portugal		Ukraine
	Belgium		Spain		Japan		Czech Republic		
	Brazil		United States		Morocco		Romania		
	Bulgaria		Finland		Mexico		United Kingdom		
	Canada		Hungary		Norway		Sweden		

A strong international outlook

Going abroad, at the heart of training

Each ENSCL student engineer spends a minimum of four months abroad. This international experience will enable you to develop your ability to adapt by discovering new ways of doing things and new cultures. It also prepares you for the international dimension of your future career, in France or abroad.

The school maintains a rich network of industrial and academic partnerships around the world. We'll help you build an international career in a company, laboratory, academic exchange or double degree.



75
ACADEMIC
PARTNERS

31
COUNTRIES

MINIMUM
4
MONTHS
ABROAD

The importance of languages

At ENSCL, learning two languages is compulsory: English as a first modern language. German, Spanish, Italian or Japanese as a second modern language. A third modern language can be selected as an option.

A minimum level of English, assessed and certified by a recognised external exam (TOEIC score of 785, TOEFL score of 550), is a prerequisite for obtaining the engineering degree.

250
hours
over
the course

Erasmus+
Enrichit les vies, ouvre les esprits.

The school is a signatory of the ERASMUS+ charter and takes part in this mobility programme launched by the European Commission. Erasmus+ offers mobility opportunities not only to students but also to staff.

Une formation adossée à la recherche

12%
of ENSCL graduates
become involved
in research by
enrolling
for a thesis

ENSCL provides training based on the research themes of two partner units:

UCCS - Unité de Catalyse et de Chimie du Solide (Catalysis and Solid Chemistry Unit) and **UMET** - Unité de Matériaux Et Transformation (Materials and Transformation Unit).

Both of **these laboratories have premises within the school** itself, enabling students to benefit from the equipment and knowledge of these research units, which are extremely advanced in their field.

Their work focuses on the following themes:

- Resistance of materials, polymers, metals, metal alloys, etc.
- Materials and energy: catalysis, fuel cells, glass, ceramics, etc.
- Chemistry and formulation engineering: agri-based surfactants and solvents, cosmetics, perfumes, paints, etc.

High-level research within the Institute

Centrale Lille Institut's research activities contribute to the institution's international recognition in **four areas**.



Digital

Energy



Health

Environment

The Institute's teacher-researchers teach courses in all the school's programmes and contribute to the research work of seven laboratories in the Lille area, for which the school is co-supervisor.

UCCS Catalysis and Solid State Chemistry (UMR 8181)
LMFL Fluid Mechanics (UMR 9013)
UMET Materials and Transformations (UMR 8207)
LaMcube Mechanics, multiphysics, multiscale (Carnot Institute)
CRISTAL Computer Science, Signals and Automation (UMR 9189)
IEMN Institute of Electronics, Microelectronics and Nanotechnology (UMR 8520)
L2EP Electrical Engineering and Power Electronics (FRE 2017)

A unique student experience in the heart of the Lille metropolitan area

ENSCL is located on the **leafy Villeneuve d'Ascq science campus**, 15 minutes from Lille city centre.

On campus, you benefit from a wide range of services, including **a learning centre, four university restaurants, sports facilities, and a health centre.**

There's a swimming pool, shopping centre, restaurants, cinemas and the Pierre Mauroy stadium in the immediate vicinity for LOSC matches and concerts!

Some courses are held at Centrale Lille's headquarters, a 10-minute walk from ENSCL, where you will find a **fablab, a documentation centre and co-working spaces.**



Accommodation

There are **six university residences on campus**, managed by the CROUS. To apply for accommodation in university halls of residence, students must complete an electronic accommodation application form each year on the www.crous-lille.fr website.

ENSCL is located close to the terminus of metro line 1, Cité scientifique stop, Pr Gabillard.

Lille has an efficient public transport network managed by Ilevia: metro, bus and tram services are available to help you get around at very attractive rates. V'Lille bicycles are also available on a self-service basis, with or without a subscription. The school also has a secure bicycle garage.

Living in Lille

Lille is an integral part of what is known as the Lille European Metropolis (MEL), at the crossroads between the UK, Germany, Belgium, the Netherlands and Luxembourg.

Lille is a key economic and cultural crossroads in Northern Europe.

The Hauts-de-France region is **France's third-largest industrial region** in terms of the number of companies, employees, and investments.

50 companies based in the north are world leaders in their field.

Lille is a young, dynamic metropolis that welcomes over **110,000 students**. Over 35% of the population is under 25, making it the youngest city in France!

Welcoming and festive, the European Metropolis of Lille offers a rich cultural life to its inhabitants and enables you to find everything you need to enjoy an unforgettable student experience.

110,000
students in
the Lille
Metropolis
area

Enjoy the city and explore the surrounding area!

A city at the heart of Europe: 30 minutes from Brussels, 1 hour from Paris, 1 hour and 20 minutes from London. By car, the beaches of the Côte d'Opale are less than 2 hours away, and the spoil tips and their unique landscapes can be reached in just 30 minutes!

Lille has an airport as well as two train stations serving some of Europe's biggest cities.





A unique association life!

Get involved, give meaning, create or take part in a non-profit project that brings people together...

Voluntary organisations are a powerful catalyst for personal development.

ENSCL has seven associations within the BDE (Bureau Des Élèves, or Students Office), which promote extra-curricular life by organising numerous events throughout the year. Sport, choir, music group, games, trips: there's something for everyone!

The sports centre offers weekly slots for sports such as football, volleyball, basketball, badminton, handball and cheerleading. It organises or takes part in events such as inter-promo or inter-chemistry tournaments, sports weekends, cheerleading demonstrations, etc.

The sustainable development unit organises a number of initiatives throughout the year, including the distribution of fruit and vegetable baskets, sustainable development week, waste management and donation drives.

The «Chimie Lille Études» Junior-Enterprise is an association that operates like a small business. Made up of student engineers, it offers companies the opportunity to carry out studies in the field of chemistry.



Find all
the
associations

There's a wide range of clubs and associations to choose from because students also benefit from the events and facilities offered by the other institute schools on the Villeneuve d'Ascq campus!

« I'm currently president of the BDE, and this job is giving me the opportunity to learn all the management aspects of an association (treasury, planning, sponsors, etc.). It's a very enriching experience from a personal development point of view, because you have to be able to organise events with lots of participants and deal with the difficulties encountered while ensuring everyone's safety.

The biggest event we manage is the integration weekend, which requires a great deal of organisation several months in advance. For this event, we had to find sponsors, apply for subsidies, discuss safety with the authorities, find an organisation and optimise the budget. So it's a big investment outside of your school career. »

Chloé, President of the ENSCL BDE

Employment prospects

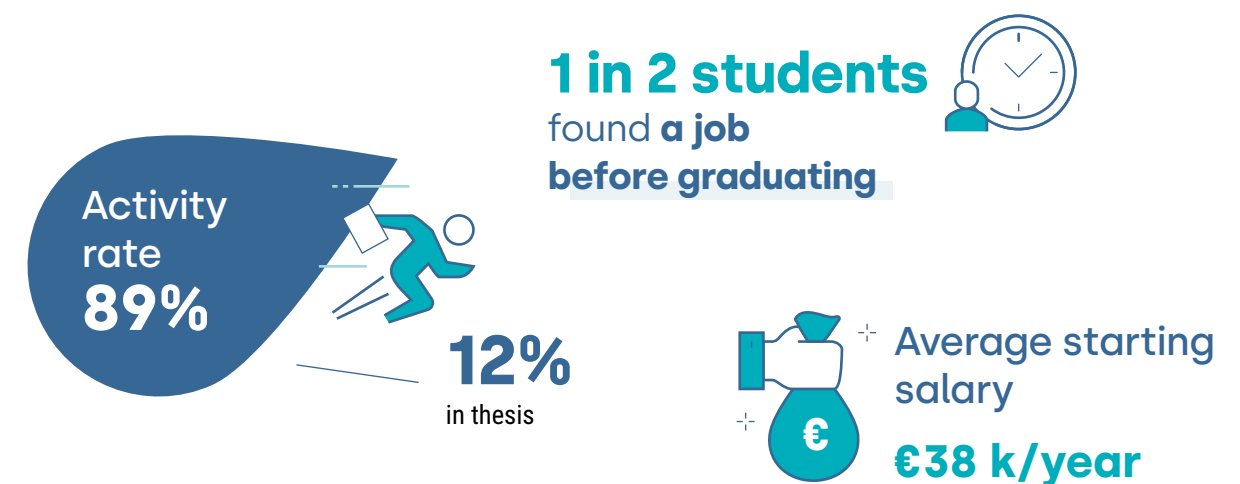
Your professional and personal project

Throughout your course, through your work placements, your reflections and your encounters, you will build a professional and personal project that reflects you and your aspirations.

In addition to the «professional and personal project» teaching module devoted to job hunting, ENSCL offers personalised support to each student.

From the 1st year, **each student is assigned a teacher-tutor**. He or she will help you to develop your career plan and find a work placement.

To strengthen the links between students and the professional world, company visits are organised in the 1st and 2nd years of the engineering cycle. Students also take part in a number of recruitment forums throughout their course: the Centrale Lille job fair, the ENSCL company forum, the company forum organised by the alumni association and the Horizon Chimie forum, which takes place every year in Paris.



Some of the jobs held by our latest graduates

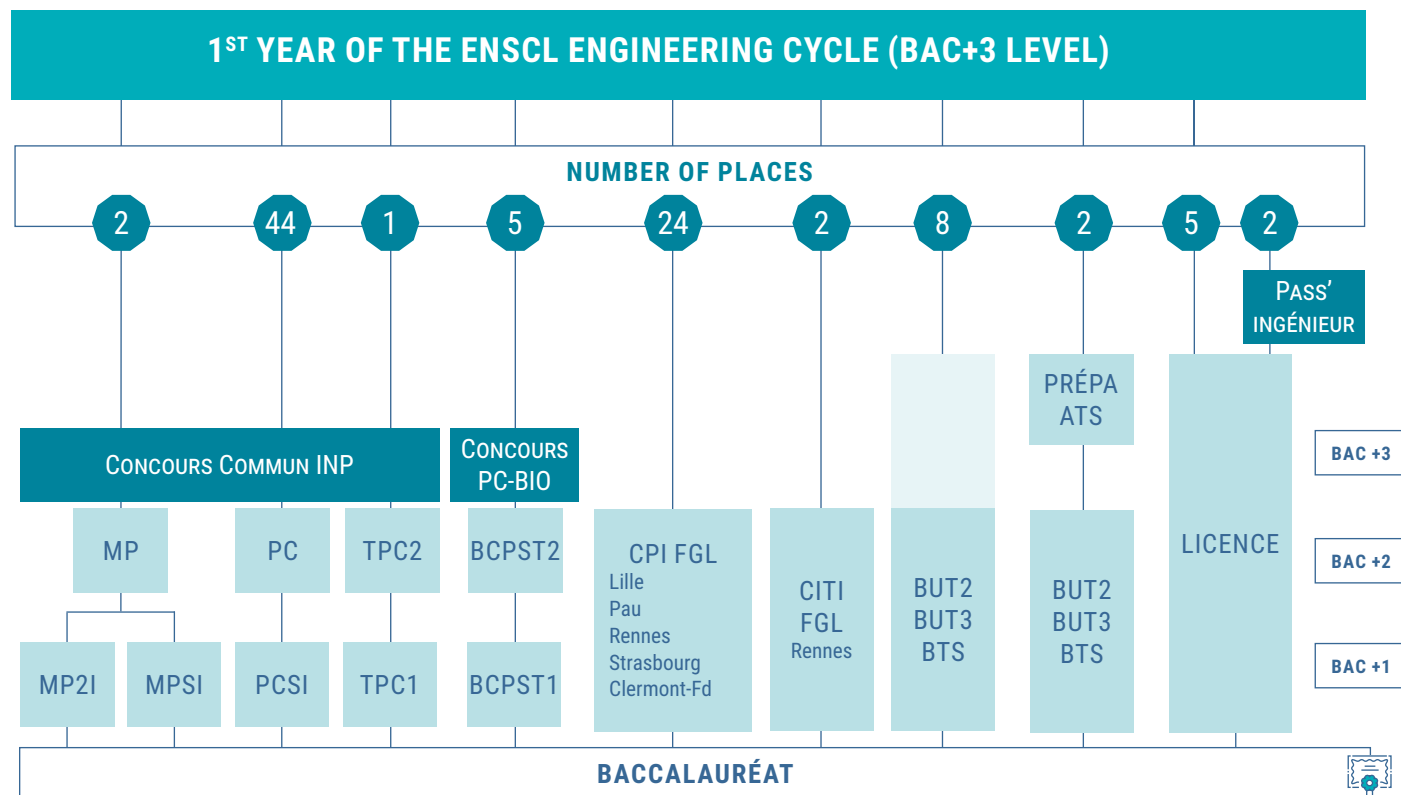
- Expert Engineer in Analytical Chemistry and Materials Characterisation
- Remediation engineer Materials process engineer
- Product development engineer
- Cosmetic formulator
- Materials Process Engineer
- Researcher in biorefinery and

Survey conducted among the class of 2023 within 4 months of leaving the school



Join ENSCL!

ENSCL is an engineering school accessible by competitive entrance examination after a preparatory course (CPGE or CPI) or on the basis of a qualification after 2 or 3 years' higher education.



Common INP competitive exam: Information and online registration on the website: <https://www.scei-concours.fr> ; <https://www.concours-commun-inp.fr>

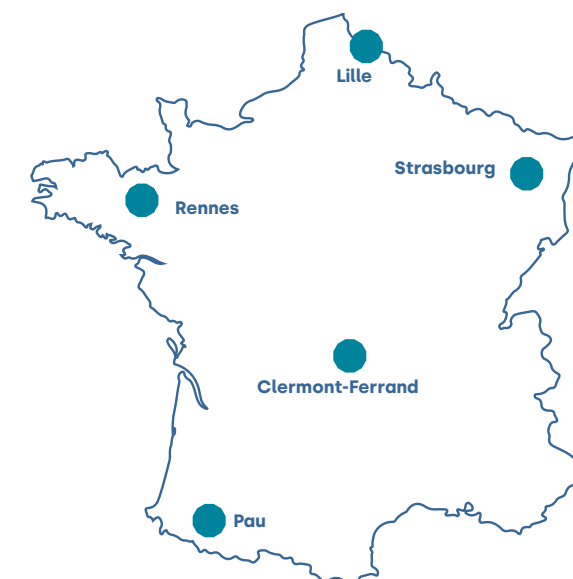
Agro-Veto PC-Bio competitive examination: Information and online registration on the website: <https://www.concours-agro-veto.net>

Pass ingénieur competitive examination: Open to students in their 2nd or 3rd year of a bachelor's degree, with at least 120 ECTS credits. Information and details at: <https://www.passingenieur.scei-concours.fr>

Admission on the basis of academic qualifications: ENSCL recruits students from short and/or university courses on the basis of their academic record. Application forms can be downloaded from the school's website: <https://enscl.centralelille.fr>. The admissions panel meets in June.

ATS stream: ENSCL recruits students from ATS chemistry classes, on the basis of continuous assessment. Admission is determined by a **ranking of students from the three ATS chemistry classes in France** (Valenciennes, Paris, and Lyon).

- Public school in Villeneuve d'Ascq
- State-fixed tuition fees of **€618 per year** (in 2024), **free for scholarship holders**
- Accredited by the Commission des Titres d'Ingénieur (Cti)



www.20ecolesdechimie.com



including **50** at ENSCL



5 integrated preparatory classes



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