The School of Engineering’s vision and ambition

The global knowledge economy is increasingly based on a broad symbiosis between universities and the socio-economic world. This symbiosis is a source of innovation, bringing technological and societal challenges, requiring coupled approaches between disciplines, and between fundamental concepts and technical achievements.

Engineering has a particular role to play in this context, as a source of innovation and of new knowledge that will nourish the economic fabric and create value for the territory.

Located in the heart of the second largest industrial region in France and with many diversified and recognised engineering courses, the Target University aims to build a unified and nationally and internationally visible School of Engineering, bringing together the academic strengths of its founding institutions in the fields of engineering. This group will evolve towards a structure of Graduate Schools focused on top-level scientific and academic projects, highlighting the contributions of each of the founders and transforming them to the benefit of the site.

The School of Engineering will build on the convergence dynamics already at work on the site, supported by projects recognised by the PIA Investments for the Future programme (Labex, Equipex, Institut Carnot, EUR and ITE) or by shared platforms promoted by the site’s CNRS federations. Its scope includes 15 research units, 11 of which have a contract in place with the national research organisations.

It will promote the hybridisation of Master’s degrees in the field, the research laboratories and the engineering schools accredited by the engineering degree commission, the Commission des Titres d'Ingénieur (CTI). Its members will contribute to its attractiveness through their networks, industrial support and scientific collaborations.

With its structure open to local, national and international partners, the School of Engineering will combine schools, existing Master’s degrees and laboratories within Graduate Schools (GS), with the aim of ensuring national and international academic recognition in certain especially visible engineering fields where the site has strengths.

1 - IMUST: Centre of excellence in the fields of materials, processes and eco-technologies for which multidisciplinary research integrating physics, chemistry and engineering is essential. Concerns two PFRs.
2 - MANUTECH-SISE: Mechanical, chemical and physical phenomena relating to surfaces and interfaces.
3 - MILYON: Modelling, complexity and algorithms in maths and fundamental computer science.
4 - MANUTECH-USD: High-speed realisation of multi-scale model surfaces.
5 - Ingénierie@Lyon, Telecoms and Digital Society.
6 - Supergrid institute
7 - Whether they are public or have the status of Private Higher Education Institution of General Interest (Etablissement d’Enseignement Supérieur Privé d’Intérêt Général, EESPIG).
Missions

To achieve its ambitions, the School of Engineering will have three key missions:

- To provide top quality training to ensure students’ employability and professional integration;
- To stimulate scientific excellence by promoting programmes up to doctoral level in internationally recognized laboratories; and
- To offer courses adapted to a wide and diversified audience.

The details of these key missions are as follows.

In terms of training policy:

- Promote the diversity of both national and international audiences, through social inclusion tools, diversified recruitment channels and support mechanisms;
- Offer training courses open to international students, in initial training, work-study and lifelong learning. To achieve this ambition, the School of Engineering will set itself the objective that all Master’s students, like engineering students, complete at least one semester abroad. Some of the courses will be offered in English to encourage international openness;
- Offer demanding courses and award Master’s (bac+5), engineering (bac+5) and doctoral (bac+8) degrees based on research advances and in close collaboration with economic partners, the needs of society, and the development of knowledge, contributing to the international influence of the Target University. One objective is to significantly increase the number of doctoral students enrolled and the excellence of the theses defended.

The School of Engineering will continue to welcome diverse audiences from different recruitment processes. It will offer a wide range of learning paths and further education, fulfilling its dual mission of public service and excellence. The School of Engineering will ensure good connections between the different levels (undergraduate/post-graduate/docotral):

- At the undergraduate level, the School of Engineering will aim to contribute to the success of all of its students, taking into account their diversity, by participating in the EU1C. The School of Engineering will also develop double degree programmes and transition points at different levels and with other PFRs (e.g. with the STS PFR). In addition, it plans to propose new hybrid integrated arrangements to complement existing systems. The School of Engineering is not designed to develop a school preparatory cycle on its own. Instead, it contributes to the EU1C, with its strong commitment including teaching, targeted skills, pedagogical orientation, steering, etc. It also collaborates with other PFRs;
- At Bac+5 level, the Master’s and engineering courses will be coordinated and cooperation between them will be encouraged, particularly within the GSs;
- The School of Engineering will contribute to the Target University’s doctoral training programmes and will strive to strengthen the excellence of the doctoral degree and to promote it in the socio-economic world. In conjunction with the Target University’s strategy, it will develop an ambitious policy for welcoming and supporting doctoral students in order to improve their working environment and increase the international attractiveness of the training through research.

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7 CITISE Initial Cycle in Information Technology at Saint-Etienne (Cycle Initial en Technologies de l’Information de Saint-Etienne): two-year TSE (Telecom Saint-Etienne) preparatory cycle at the end of which students can obtain a DU, the two-year Bachelor’s degree (L2) in physics and the DUT GEII (Electrical Engineering and Industrial Computing) through a course shared with the Faculty of Science and Technology and the IUT of Saint-Etienne.

PeiP (parcours des écoles d’ingénieur Polytech) : two-year preparatory cycle that gives access to all the schools in the Polytech network and that is based on an undergraduate degree course (Lyon 1 Bachelor’s of Mathematics for the scientific baccalaureate and UJM Bachelor’s of Science in Engineering (SPI) for the technological baccalaureate).
In terms of research, the School of Engineering is committed to:

- Ensuring a continuum between fundamental and application-oriented research by drawing on the site’s development tools (subsidiaries, competitiveness clusters, clusters, SATT, etc.). The School of Engineering will ensure the harmonious development of all aspects of engineering. The level of academic recognition (publications, research programmes, international visibility, etc.), as well as that of research transfer (contracts, patents, etc.), will be accompanied by indicators designed to enable the structure to be managed according to its objectives;
- Pursuing a bold policy based on identifying and strengthening key areas of focus, while ensuring support for other themes and the emergence of ambitious new research objectives.

The School of Engineering will contribute to the development of the local region. Roanne, for example, will be the subject of a specific project involving Polytech Lyon and the Industrial Engineering Department of the Faculty of Science and Technology (FST) at the Jean Monnet University Saint-Étienne (UJM).

**The Graduate Schools’ (GS) ambition**

The School of Engineering will initially rely on existing entities, which it aims to combine within the Graduate Schools, which will form the backbone of the PFR. These academic elements, designed to strengthen the capacity to develop ambitious and innovative projects, are intended to constitute the structure of the School in due course.

Established for an intentionally limited number of subjects, the GSs will help to develop their national and international visibility and attractiveness. The objective is to stimulate the links between training and research and between individual training courses (engineers and Master’s), as well as links with the socio-economic world.

To appear, a GS will have to demonstrate proven academic recognition and international visibility, both in research and in training. It must have a potential for excellence, guaranteeing its development.

The site has significant assets within its research laboratories, engineering schools and Master’s degrees. Following the example of surface engineering with the EUR MANUTECH SLEIGHT, the following key areas are envisaged as the starting point for the Graduate Schools: POLYMER MATERIALS, MEDICAL DEVICES, ELECTRICAL ENGINEERING and COMPUTER SCIENCE AND DATA. Five GSs would thus support the launch of the PFR.

Some subjects could be developed or be linked to other PFRs:

- Chemistry, process engineering, biotechnology and materials, with the Sciences and Humanities and BSP PFRs, for example;
- Artificial intelligence with the Sciences and Humanities PFR; or
- Health engineering with the PUSH PFR.

**Scope**

The School of Engineering will be composed of the following entities:

- The Physics, Computer Science, Chemistry and Engineering and Industrial Sciences departments of the Jean Monnet University, Télécom Saint-Étienne, and the research laboratories grouped together in the “Saint-Etienne Manufacture” entity in the form of a group of components; and
- The Electrical Engineering, Process Engineering and Computer Science departments, the Polytech School of the Claude Bernard Lyon 1 University and the research laboratories grouped in the “Doua Ouest” entity in the form of a group of components.
It will benefit from the outset from its association with the École Supérieure de Chimie Physique Électronique de Lyon engineering school (CPE Lyon\(^8\)), an associated school of Lyon 1 and therefore associated with the Target University.

The PFR will be known as the “School of Engineering” of the Université de Lyon, while at the same time enhancing its constituent entities through a brand system that will contribute to the overall identity of the Université de Lyon and that will respect existing brands.\(^9\)

Within the scope thus defined, the School of Engineering represents approximately 6,300 students supervised by 300 faculty members.

It will promote scientific and educational collaborations with other institutions and/or disciplinary departments in the engineering sciences field, in line with its ambition and the overall strategy of the Target University.

Governance

1. The School of Engineering’s governance

The School of Engineering’s governance has the following role:

- To define the academic strategy, in line with that of the Target University, based on the analyses and proposals of the colleges;
- To guarantee that the organisation is coherent for the actors; and
- To implement the strategy and monitor its delivery.

Initially created from the departments and schools in the field from Lyon 1 and the UJM, the initial governance, set up in 2021, is intended to evolve from 2023 to assist and support the emergence of the Graduate Schools (see “trajectory” paragraph).

1.1. Decision-making bodies

The School of Engineering will be headed by a director, assisted by an Executive Committee. The director will be a well-known person from the academic world. He will be recruited following a transparent recruitment process, based on a call for applications. He will be appointed by the President of the Target University on the proposal of the PFR board. The director will represent the School of Engineering and will be a member of the Target University COMEX.

The director will be assisted by an executive committee (comité exécutif) composed of his team of deputy directors (research and training), the heads of the component groupings and project leaders, whom he will appoint, taking care to ensure a balanced regional representation. The executive committee will coordinate the strategy of the constituent entities within the framework defined by the Target University, prepare proposals for the PFR board, and ensure the convergence of the entities’ scientific and educational policies.

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\(^8\) School with private status, accredited as a Private Higher Education Institution of General Interest (EESPIG, Etablissement d'Enseignement Supérieur d'Intérêt Général)

\(^9\) For example:
Polytech Lyon, School of Engineering, Université de Lyon
Manutech-Sleight, School of Engineering, Université de Lyon
Master X, School of Engineering, Université de Lyon
He will also assisted by an extended management committee (comité de direction élargi) including all laboratory directors, all department and component heads, all school directors, all GS heads, the president of the Master’s college and the two directors of the component groupings. The extended management committee will contribute to the development and implementation of the School’s strategy.

The director will prepare the School of Engineering’s COM with the assistance of the executive committee and the extended management committee.  

The PFR board will comply with the general provisions of the Strategic Plan (DOS). It will comprise 40 members distributed as follows:

- 12 elected members representing faculty members (six elected from college A (three from Lyon and three from Saint-Etienne) and six elected from college B (three from Lyon and three from Saint-Etienne));
- Six elected members representing BIATSS staff;
- Six elected members representing students;
- 16 appointed members representing the national research organisations (CNRS, INSERM, INRIA and IFFSTAR), socio-professional organisations and companies, and the CPE (university joint commission).

The PFR board will also include permanent members with an advisory voice: the two representatives of the component groupings, the GS representatives, a representative of the Sciences and Humanities PFR, one representative of the Sciences, Technology and Society PFR, the directors of the “internal schools”, and the heads of the departments and components. A representative of an external school that is a strengthened partner of the School of Engineering may be invited (to the sessions after a decision by the Target University President).

For the PFR board, as for the training and research board, the electoral procedures must allow for balanced regional representation.

The PFR board will have decision-making authority to adopt the PFR budget, coordinate the recruitment campaign, validate the COM for the governance of the Target University, ensure the monitoring of the GSs and formulate an opinion on all questions relating to training and research within the scope of the PFR before transmission to the governance of the Target University.

The training and research board (conseil de formation et de recherche, CFR) will comprise 40 members: 20 seats for the training commission and 20 seats for the research commission.

The training commission will be composed of:

- Four elected members representing college A personnel (two from Lyon and two from Saint-Etienne);
- Four elected members representing college B personnel (two from Lyon and two from Saint-Etienne);
- Two elected members representing BIATSS personnel (one from Lyon and one from Saint-Etienne);
- Eight elected members representing students enrolled in a Bachelor’s or Master’s programme (four from Lyon and four from Saint-Etienne); and
- Two outside members.

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10 The schools’ COM deals with their path within the School of Engineering. It will be prepared on a multiyear basis and will examine the resources required, with an annual review as part of a COM consultation: human, financial and time resources, etc.
The research commission will be composed of:

- Four elected members representing college A personnel (two from Lyon and two from Saint-Etienne);
- Four elected members representing college B personnel (two from Lyon and two from Saint-Etienne);
- Two elected members representing BIATSS personnel (one from Lyon and one from Saint-Etienne);
- Two elected members representing students enrolled in a doctoral programme (one from Lyon and one from Saint-Etienne); and
- Eight outside members.

When meeting in restricted form with professors only, the CFR will have the authority to deal with individual cases relating to faculty members, or equivalent. In plenary form, it will issue opinions on the budgetary policy, the recruitment campaign, the training policy, and the scientific policy of the School of Engineering and, in general, on all questions relating to the academic life of the PFR. It will collect the opinions of the three colleges and the head of a college may bring any question relating to the college before the CFR. Its opinions will then be transmitted to the PFR board.

1.2. Places for consultation and scientific orientation

Three colleges will be established to provide spaces for dialogue and consultation between the PFR’s stakeholders. These colleges will operate in conjunction with the PFR director and the CFR head. They will not be constituted on an elective basis; the members of the colleges will participate in them in their professional capacity and on an advisory basis.

- The schools college will bring together the directors of the internal and associated school(s). It may raise questions relating to common issues, such as CTI accreditation, that remain the responsibility of each school, recruitment procedures, brand, projects, etc. It will also be a receptacle, an interface of openness and partnership with the other schools on the site.
- The Master’s college will bring together the heads of the Master’s degrees and courses. It may raise questions relating to the HCERES evaluation (French High Council for the Evaluation of Research and Higher Education), the coordination and development of the Master’s study programme, the rules governing studies and examinations, etc.
- The research college will bring together the laboratory directors. It may take up questions relating to the scientific policy of the PFR, proposals submitted in response to calls for projects, etc.

The colleges can be extended by invitation (after validation by the COMEX) to other partners inside or outside the Target University, depending on the agenda. The schools college will be led by one of the heads, appointed from among its members and who must belong to a member institution of the School of Engineering. The Master’s college will be led by the deputy director of the School of Engineering responsible for training, while the research college will be led by the deputy director of the School of Engineering responsible for research. The colleges will meet as often as necessary to discuss ongoing projects, define perspectives and deal with operational adjustments. Each person in his field will stimulate and promote a transverse and multidisciplinary approach within the PFR, with other PFRs and with other partners of the site. These are places of coordination; they have no decision-making power. They will formulate proposals and issue opinions or recommendations that are then transmitted to the CFR for consideration.

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11 The member schools of the School of Engineering will control their accreditation process and will have their own budget and human resources. They undertake to ensure transparency on these elements within the college.

12 The member institutions of the Target University are: Lyon 1, Lyon 3, St-Etienne and the ENS de Lyon.
An executive committee will also be set up within each GS to enable the various stakeholders to work together. A representative of the GS, the project leader, will be appointed to represent and manage the organisation.

1.3. The component groupings

The structure of the School of Engineering will initially be based on groups of components that represent the various constituent entities in Lyon and Saint-Etienne: Saint-Etienne Manufacture and Lyon La Doua.

These component groupings should promote a transformation trajectory, which will support and promote the creation of the Graduate Schools (see “Trajectory” section below) that shape the identity of the School of Engineering.

Each of these component groupings will be headed by a director well-known in the academic world. The director will be assisted by a management board with the authority to make proposals to the CFR and the PFR on scientific policy, budgetary management and HR. It will also possess certain authorities in subsidiarity with the PFR board (site management, logistics, IT, institutional infrastructure and resources, etc.).

These two localised component groupings will provide a unified representation of the constituent elements present in a given location to the governance of the School of Engineering, and offer an identified local structural framework for the staff attached to them.

To develop an agile and efficient research environment, the component groupings will manage shared services: financial management, local HR management, logistics, purchasing and research support. This list is neither definitive nor exhaustive: the organisational structure of the School of Engineering will be determined at a later date in function of the general organisation of the Target University.

2. “Internal schools” positioning

The two engineering schools internal to the universities are members of the School of Engineering. They will become “internal schools” of the Université de Lyon.\textsuperscript{13}

The directors of the “internal schools” will be permanent members of the PFR board in an advisory capacity.

The director of the School of Engineering is a member of the board of the PFR schools.

Trajectory

The School of Engineering aims to become, in 2025, a leading centre for engineering sciences on the Lyon St-Etienne site, integrating all the current engineering players of the Target University within a unified, visible and well-structured entity.

The internal structuring and initial governance are expected to evolve rapidly to support the development of the Graduate Schools, which are major areas of focus for the hybridisation of training and laboratories around the School of Engineering’s scientific subject areas.

\textsuperscript{13} Cf. Article L713-9 of the French Education Code. In order to align with Polytech Lyon, Télécom Saint-Etienne will adopt the status of a school within the meaning of Article L713-9 of the French Education Code.
As such, the initial governance of the School of Engineering will have the mandate to develop the PFR according to the following milestones:

2020
Consolidation of the PFR’s scope with the subject areas that are academically coherent with the School of Engineering project, such as mechanics or chemistry, in consultation with the STS and Sciences & Humanities PFRs.

2020 to 2022
The COM will comprise a common component and a specific component for each constituent structure of the School of Engineering.

2021 to 2025
- Progressive creation of four new GSs in addition to the existing one (EUR MANUTECH SLEIGHT);
- From 2022-2023:
  - beginning of work on the training map for the next accreditation, taking particular care to avoid duplication between the study programmes of the schools and Master’s;
  - review of the governance of the GS structure;
- 2023: introduction of a unified COM.

2025
Unified organisation of the School of Engineering

Beyond its specific institutional trajectory of constitution within the scope of the Target University, the Engineering PFR will seek to maintain and develop scientific and educational collaborations with the other actors of the site in the field of engineering. It will therefore be open to partnerships with the other schools on the site. To this end, it will develop association procedures tailored to each case, which may constitute a first step towards progressive integration, according to procedures to be co-constructed, based on an affectio societatis between all the parties.