



A new curriculum for engineer-entrepreneur students of CentraleSupélec.

**To meet the major challenges of the 21st century,
the School positions itself on innovation
and offers tailor-made education.**

The stakes are high. The issue is to train the engineers who will change the world. From the start of 2018 academic year, CentraleSupélec has provided a course of first-rate scientific level dedicated to engineer-entrepreneur training, making it possible to perfectly meet the needs of companies and Society and to respond to the major scientific, technical, economic, environmental and social issues of the 21st century.

The new curriculum is a rare opportunity for the School to question the needs of Society, companies and students, to reconsider its teaching and to assert its expert positioning in complex systems. The design and implementation of the curriculum constitute the final stage issued from the merger of Centrale Paris and Supélec; it results from the work of all the School actors: project teams, working groups of teacher-researchers, workgroups of students, companies' representatives and graduates (for example, 780 alumni were surveyed), while conducting surveys on promising sectors in France and internationally ... This has proved a considerable amount of work over several years, which has helped identify the expectations of students and employers and determine the main areas of high value-added employment for CentraleSupélec engineers.

CentraleSupélec engineers of tomorrow

As part of an international school with a strong corporate drive, tomorrow's engineers will be required to master science and technology, have a solid capacity for conceptualization and abstraction, plus strong expertise in complex systems management. They will also be innovators, decision-makers and active leaders, as to create economic and social value. Are there any other good qualities required? Surely, be comfortable and creative in major technology and societal changes, particularly in the digital world. Lastly, in conformity with the School values, they should be humanists, sensitive to issues facing Society and have a sense of responsibility.

Throughout their schooling, students will choose among elective courses (nine in the 1st year, more than sixty in the 2nd year). In the 3rd year, future engineers will choose between 8 "*dominantes de sortie*" (sectoral specialization courses); this, after upstream courses which lead to the new curriculum and determine its specificity: Construction, City and Transport, Energy, Great Systems in Interaction, IT and Digital, Mathematics and Data Sciences, Physics and Nanotechnologies, Communicating Systems and Connected Objects, and Living, Health and Environment.

To train its engineers, the School has defined a set of 9 major competencies, which must imperatively be mastered by the graduates. Beyond skills relating to knowledge, future engineers will develop soft skills and know-how.

The strengths of the new curriculum are many: **top-ranked scientific level**, particularly in mathematics and information, **training in project mode**: multidisciplinary **thematic sequences** that will lead students to their future position as engineers, **flexible curriculum**: multiple choices throughout their training path, opportunities for knowledge enhancement, **reinforced support** to help them build their future and **extensive professionalization** throughout the curriculum.

A curriculum that adjusts to all profiles and wishes

To meet a wide variety of professional projects and students' personal expectations, the curriculum will allow each one to build their training "à la carte", including a choice of customized courses for those attracted by research, cybersecurity or entrepreneurship; a year dedicated to digital technology for the enthusiasts (Centrale Digital Lab); the possibility to attend part-time training; 80 double-degree opportunities internationally; 23 opportunities for "dual degree" with 16 partner Grandes Écoles and French universities ...

About the 9 skills:

- Analyze, design and carry out complex systems including scientific, technological, human and economic components
- Have acquired and further develop in-depth expertise in a scientific or sectoral field and a job family
- Act, undertake, innovate in scientific and technology environment
- Have a sense of value-added creation for your company and your customers
- Feel at ease within a multicultural and international context
- Be comfortable and innovative in the digital world
- Know how to convince
- Lead a project and a team
- Think and act as a reliable and ethical professional

The strengths of the School:

- International presence
- One of the best engineering schools in France
- A new campus at the forefront of innovation
- Academic excellence (work environment, Plateau de Saclay, labs ...)
- Proximity of companies (opportunities, wages)
- Community life

CentraleSupélec new engineering curriculum in figures:

- From **8** to **24** months in a company (**140** partner companies)
- A minimum of **6** months abroad (**12** months on average); **176** partner universities
- **2** compulsory modern languages: C1+ level in English is required for graduation, B1 in the second language
- 3rd matrix-type year: **8** "*dominantes*" (sectoral specialization courses) and 21 "*mentions*" (in-depth thematic study) + **8** vocational paths

About CentraleSupélec

CentraleSupélec, a Public Institution of a scientific, cultural and professional nature, was created by the merging of Ecole Centrale Paris and Supélec in January 2015. Today, CentraleSupélec consists of 3 campuses in France. It has 4,300 students, 3,200 being engineering students, and includes 16 laboratories or research teams. As an international School, CentraleSupélec is also located in China, India and Morocco. CentraleSupélec is a reference center in the field of engineering sciences and systems and a leading School in higher education and research, ranked among the best institutions in the world. CentraleSupélec is a founding member of Paris-Saclay University and chairs the Ecole Centrale Group. www.centralesupelec.fr

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