



CentraleSupélec

# CentraleSupélec

Institute of science & technology



**CENTRALESUPÉLEC**

“**CENTRALESUPÉLEC IS ONE OF THE MOST PRESTIGIOUS FRENCH ENGINEERING *GRANDE ÉCOLE*, WITH 3 CAMPUSES ABROAD IN CHINA, INDIA AND MOROCCO.**

”

**IN 2017, CENTRALESUPÉLEC WILL INAUGURATE ITS NEW CAMPUS OF SACLAY AT THE SOUTH OF PARIS, WITH STATE-OF-THE-ART FACILITIES**



CentraleSupélec is the result of the merger of the École Centrale Paris and Supélec in January, 2015.

Since 2009, the two Institutes have progressively strengthened their partnership and collaboration with the aim of bringing together the whole of their activities (engineering education, research and post graduate programs) under the umbrella values of excellence, innovation, entrepreneurship, internationalization and leadership.

CentraleSupélec has 4700 students, of whom 3500 are engineering students, 30% are international students, 408 PhD candidates, 18 research departments or teams, 176 partner universities in 45 countries, 140 corporate partners and 35 500 alumni working in all economic sectors worldwide.

Centralesupélec offers the best of engineering education and research.

## **A FRENCH AND INTERNATIONAL NETWORK**

CentraleSupélec has four campuses in France, 2 located at the south of Paris (campus of Châtenay and campus of Gif), 1 in Metz (Lorraine) and 1 in Rennes (Brittany). CentraleSupélec has also 3 campuses abroad: in China with École Centrale Beijing, India with Mahindra École Centrale in Hyderabad and Morocco with École Centrale Casablanca.

In the long term, CentraleSupélec will be the “heart” of a worldwide network of interconnected organizations, in developed and emerging countries, within which professors, researchers and students will circulate.

## **ÉCOLE CENTRALE GROUP**

CentraleSupélec leads the École Centrale Group. Together with École Centrale Lyon, École Centrale Lille, École Centrale Nantes and École Centrale Marseille, all located in France, CentraleSupélec develop international research and academic partnerships and exchanges, mostly in Europe, South-America and Asia.

## **UNIVERSITÉ PARIS-SACLAY**

CentraleSupélec is a founding member of Université Paris-Saclay: the Institute has greatly contributed to the definition of the “Saclay Campus” project and its branding as an Initiative of Excellence (IdEx), contributing to the stature of Université Paris-Saclay becoming its School of Engineering. This provides a unique opportunity for CentraleSupélec to access a scientific environment of international standing, along with exceptional worldwide visibility and positioning.

### **CENTRALESUPÉLEC OFFERS SIX PROGRAMS:**

- The École Centrale Paris Engineering degree (until 2018)
- The Supélec Engineering degree (until 2018)
- National Master’s degree
- Doctorate
- The Advanced Master’s degree, an establishment-dispensed degree
- The Supélec Specialization Graduate degree (until 2018)

“ UNTIL SEPTEMBER 2017, CENTRALESUPÉLEC WILL STILL OFFER THE BOTH *ÉCOLE CENTRALE PARIS* AND *SUPÉLEC* ENGINEER PROGRAMS. THE ALL NEW CENTRALESUPÉLEC PROGRAM WILL BEGIN FOR THE 2018/2019 ACADEMIC YEAR. ”

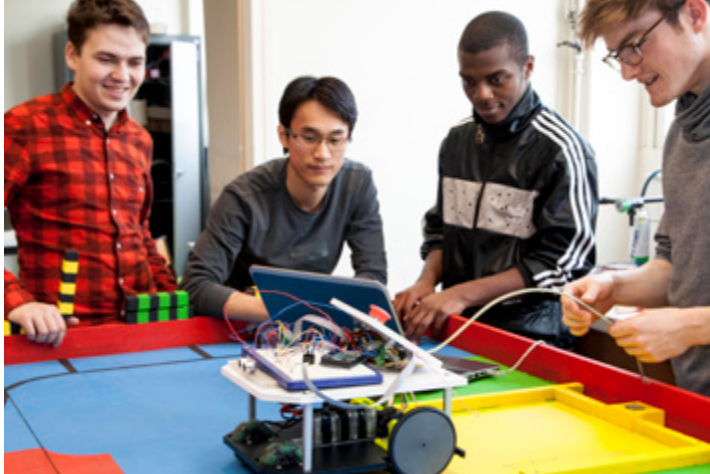
## ▼ THE ENGINEERING DEGREE

Until 2020, CentraleSupélec will continue to deliver the two following degrees:

- Engineering degree in Arts and Manufacturing (Centrale Paris' Program)
- Supélec Engineering degree (Supélec's Program)

The courses on offer are in the field of energy science, computer science, mathematics, physics, electrical engineering, mechanical & civil engineering, chemical engineering, industrial engineering, management & economic systems, humanities & social sciences, languages and sports.

In 2021, the graduating class will be awarded the new engineering degree.



## THE MASTER OF ENGINEERING PROGRAM

The societal challenges of the 21<sup>st</sup> century are of the utmost concerns of engineers, in particular the size of systems (tangible or intangible), the vast heterogeneity of their components and emerging phenomena. These systems combine interconnected fields that are all linked at creation and steering phases, human (economic and organizational) and technological issues.

In keeping with the long humanist tradition, CentraleSupélec will continue to teach:

- Senior executives set to become future company managers;
- Expert engineers for companies or public research;
- Entrepreneurs who are creating, taking over or developing a company.

CentraleSupélec graduates will have the capacity to address the complexity of problems in all their dimensions (scientific, technical, economic, environmental, social and, of course, human) by using their powers of abstraction and their sense of reality and by managing interactions among all the components within the system.

Individuals should consequently be capable of innovating, initiating and leading change, which also necessitates the ability to communicate and convince, leadership skills, audacity, ambition and the desire to succeed.

**30%** OF CENTRALESUPÉLEC STUDENTS ARE INTERNATIONAL

### CAMPUS LIFE

CentraleSupélec Campuses are ideal places for studying and participating in the numerous student clubs and organizations, thus developing social relationships with people of other nationalities.

In coming to CentraleSupélec, each student participates in an exceptionally rewarding student experience, benefiting from one or more artistic, cultural, sporting or humanitarian activities.

On each campus, the students will find tennis courts and sports fields, a gymnasium and areas devoted to cultural activities.

### A BRAND NEW CENTRALESUPÉLEC ENGINEERING PROGRAM IN 2018

The creation of CentraleSupélec provided the opportunity to conceive an entirely new program, (equivalent to a Master's degree in Engineering) maintaining the best practices and traditions of both schools with the most up-to-date requirements of employers and society in the 21<sup>st</sup> century.

The creation of this new program is undoubtedly one of the most important projects within the development of CentraleSupélec - arguably the best illustration of the core values promoted by the new Institute, it will play a decisive role in the development of the CentraleSupélec brand and in the affiliation it will create in faculties, students, communities and partners.

The aim is to implement this new program to students who will join CentraleSupélec in September 2018, in keeping with the date the two campuses of Paris in Saclay will merge in one all new campus.

In 2021, the first batch will graduate with the CentraleSupélec Engineering degree (equivalent to a Master's Degree).



▼  
**DOCTORATE  
AND  
MASTER'S  
DEGREES**

## Master's Degree

CentraleSupélec has restructured its Master's Degree program with its Paris-Saclay partners. The global program offered by CentraleSupélec in the Paris region (Gif-sur-Yvette and Châtenay-Malabry) will be located in the Université Paris-Saclay.

From September 2015, CentraleSupélec will offer a new Master's program for the new Université Paris-Saclay.

The program has been reorganized for the 2015-2019 cycle, comprising 14 titles and 40 curricula for the 2<sup>nd</sup> year of Master's degree (formerly specialties) which reflect the major axes for research development, to address the new needs of its academic and industrial partners.

The aim is, of course, to attract more high-achieving candidates, with the following objectives:

- To provide the best students with the opportunity to complete a doctorate in one of the laboratories of the school or of its partners;
- To contribute to the attractiveness of Université Paris-Saclay, the budding COMUE in Brittany and the Pays de la Loire region, and the Université de Lorraine.

## Advanced Master's CentraleSupélec Executive Education

CentraleSupélec Advanced Master's degree (in the fields of technical expertise and management) is a post-graduate program with a professional focus, having the aim of either specializing or undertaking a double degree, including theoretical teaching, an internship within a company and defense of a professional thesis.

These Advanced Master's degrees assemble students with varied profiles: young graduates from Engineering schools, business schools or universities, young professionals and experienced executives, coming from all over the world (35% international candidates in each year group).

This educational program is one of excellence, combining theoretical lessons and practical work. It is a direct link to representatives of international partner companies. All advantages are aligned so that students following an Advanced Master's degree with CentraleSupélec can successfully optimize their program and their career perspectives.

## DOCTORATE

As part of our mission to provide training for and through research, CentraleSupélec jointly manage five Doctoral Schools within Université Paris-Saclay to prepare students for careers in research and development, in both the public and private sectors. The CentraleSupélec Doctoral training is resolutely committed to professional training, providing its doctoral students with all the skills they need to succeed in their professional careers in the fields of innovation, research and development.

Parallel to their research activity, CentraleSupélec laboratories play an important role in the institution's teaching programs, which provide training through and for research. This is reflected in their involvement in projects for the engineering program, as well as in thesis preparation in the doctoral program.





# RESEARCH

## A research leader in Engineering and Systems Sciences

The CentraleSupélec Center for Research draws its strength from the complementarity of the reputed expertise of École Centrale Paris in the field of Physics, and that of Supélec in the field of ICTS. Together, the two schools offer a very large scientific spectrum, covering all Engineering and Systems Science.

CentraleSupélec Research aims to usefully contribute, through the progress of knowledge and developing innovative responses to major technological and social challenges. Their activities thus revolve around the key issues of the 21<sup>st</sup> century, and especially in 7 key fields:

- Communication Systems
- Energy
- Environment and Risks
- Aeronautics and Transport
- Health and Bio-Engineering
- Nano-Sciences
- Business Systems







## SCIENTIFIC FIELDS

### The research units cover eight scientific fields:

- Materials Science
- Mechanical Engineering
- Applied Physics
- Applied Mathematics
- Computer Science
- Signal, Control, Telecommunications
- Electrical Engineering, Electronics
- Industrial Engineering, Economics and Administration

### DOCTORAL SCHOOLS

CentraleSupélec has redeveloped its Master's Degree program with its Paris-Saclay partners and has very actively participated in the development of the new Doctoral Schools, which it either manages or is associated with, and which have either recently been built within Université Paris-Saclay or are currently being built in Brittany and Lorraine.

As such, CentraleSupélec will jointly manage five Doctoral Schools within Université Paris-Saclay:

- Interfaces
- Mechanical and Energy Sciences, Materials and Geo-sciences
- Information and Communication Technologies and Sciences (ICTS)
- Electrical, Optical, Bio-physics and Engineering (EOBE)
- École doctorale de mathématiques Hadamard (EDMH)

And will be associated with two Doctoral Schools, through:

- Joint-degree partnership with the Matisse Doctoral School and its future potential in the Université Bretagne Loire;
- Joint-degree partnership with the IAEM Doctoral School of the Université de Lorraine (Computer Science and Robotics) and joint-degree partnership with the EMMA Doctoral School, also part of the Université de Lorraine (Optoelectronics).

**18** LABORATORIES & RESEARCH TEAMS CO-OPERATED WITH MAJOR NATIONAL RESEARCH CENTERS

**300** FACULTY-RESEARCHERS

**65** FULL-TIME RESEARCHERS (CNRS, INRIA, ONERA)

**408** PHD CANDIDATES

**620** PUBLICATIONS IN INTERNATIONAL REVIEWS

**53** PATENTS

**5** INTERNATIONAL LABORATORIES (SINGAPORE, CHINA, CANADA, UNITED STATES)

CentraleSupélec laboratories, along with their partners, are currently participating in:

**6 LABEX** (Laboratories of Excellence):  
**CHARMMAT** (Chemistry of Multifunctional Molecular Architectures and Materials);

**Comin-Labs** (Digital Communications and Informatics for the Future);

**DigiCosme** (Digital worlds: distributed data, programs and architectures);

**LaSIPS** (the Saclay Plateau Engineering Systems laboratory);

**Nano-Saclay** (interdisciplinary Nano-lab of Université Paris-Saclay);

**PALM** (Physics: Atom, Light, Matter).

**2 EQUIPEX** (Equipment of Excellence):  
**Digiscope** (development of techniques for interactive visualization of highly complex data);

**MatMéca** (development of materials using powder metallurgy, integrated calculation within an ultra fast network and in situ micromechanical characterization).

**3 IRT** (Technology Research Institutes):  
**B-Com** (digital networks and infrastructures);  
**M2P** (materials, metallurgy, processes);  
**SystemX** (digital sciences and ICTS).

**3 ITE** (Institute for Energy Transition):  
**PS2E** (Paris-Saclay Energy Efficiency);  
**IPVF** (Île-de-France Photo-voltaic Institute);  
**VEDECOM** (carbon-free, communicating vehicle and its mobility).



## COMPANIES

“

...THE CENTRALESUPÉLEC ENGINEERING DEGREES OPEN THE DOOR TO THE WORLD. THE TRAINING IS NOT ONLY ACADEMIC. EDUCATION IS ALSO ORIENTED TOWARDS PERSONAL DEVELOPMENT, A STRONG POINT OF CENTRALESUPÉLEC TRAINING. VERY QUICKLY, YOU CAN TAKE BIG RESPONSIBILITIES...

”

Marc Bucar Bagaria, Universitat Politècnica de Catalunya (Spain)  
Double Degree Graduate





## THE SCHOOL FOR COMPANIES

CentraleSupélec has put new forms of collaboration in place with Industrial Partnerships. Companies are involved in the Institute in many ways of collaborations: in the sponsorship of options, providing research topics (Chairs) providing trainings as well as different professional courses and in the temporary assignment of lecturers.

CentraleSupélec also develops the vocation of students to become entrepreneurs, accompanying the more promising projects towards fulfillment. The CentraleSupélec Incubator allows the development of Start-up technology projects. It is becoming increasingly important and its further reinforcement is one of CentraleSupélec priorities.

Immersing the students in the heart of economic realities, familiarizing them with the business world and encouraging entrepreneurship are essential components of the CentraleSupélec pedagogical model.

With a majority of students who are hoping to make their careers in the corporate world, and research which aims to provide innovative solutions to the needs of the business and services sectors, businesses are closely involved in the life of CentraleSupélec, through partnerships.

The Institute aims to instill entrepreneurship in its students. CentraleSupélec has developed highly structured industrial and research partnerships, aiming to bring companies, students and the Institute together.

**140** PARTNER COMPANIES,  
INCLUDING MORE THAN **20** SMES

**13** CHAIRS FOR RESEARCH &  
TEACHING


**5** INTERNATIONAL CAREER FORUMS IN  
BRAZIL, CHINA, INDIA, GREAT BRITAIN  
& GERMANY

**1** YEARLY FORUM IN PARIS BRINGING  
TOGETHER 3,000 STUDENTS &  
200 COMPANIES

### FORUMS

Career forums organized by CentraleSupélec now take place every year in Brazil (alternating between Rio de Janeiro and São Paulo), in China (Shanghai) and in Great Britain (London) and in Germany (Berlin).

These enable companies located in these countries to meet bilingual and highly qualified native and French students, and to present their international internships and job opportunities.



“ ...WE LOVE THE ATMOSPHERE AND THE CULTURE OF CENTRALESUPÉLEC. EVERYONE'S VERY FRIENDLY AND INVITING, AND WE FELT VERY MUCH AT HOME AS SOON AS WE GOT HERE... ”

” Shradha Patil, N.U.S (Singapore) - Non-Degree Student



## INTERNATIONAL

“ IT WAS AN HONOR BEING ABLE TO STUDY AT CENTRALESUPÉLEC, CAMPUS OF CHÂTNAY. THE THIRST FOR KNOWLEDGE ON CAMPUS IS INSATIABLE AND SO IS THE SPIRIT OF ENJOYING STUDENT LIFE... ”

” Mia Vioulès, University of Wisconsin-Madison (USA)  
Master's degree in Business Intelligence & Decision Support

- 30% of international students
- 20% of the faculty is international
- 70 nationalities represented
- 176 partner universities in the World
- 80 Double Degree agreements
- 49% of Double Degree graduates
- 21% of graduates pursue their careers abroad
- A minimum of 1 semester abroad for every Engineering student
- 11 languages taught



# CENTRALESUPÉLEC, A TRULY INTERNATIONAL SCHOOL

**It boasts 176 academic and research partnerships in 45 countries, more than 80 Double Degree agreements**, along with exchange agreements for term or annual mobility arrangements. Some 30% of CentraleSupélec students are international students and its Engineering students must spend at least 1 semester abroad during their program.

CentraleSupélec has a long tradition of academic exchanges (semester and double degree) with prestigious Universities around the World, particularly in Europe, China and Brazil.

The Institute is an active member of different mobility program in Europe, such as T.I.M.E. and CESAER networks. CentraleSupélec is also positioned within the new European Erasmus+ mobility program.

Areas for investigation over the next few years will be “Master’s degrees and mobility” and “Partnerships and alliances”. CentraleSupélec is also participating in the Horizon 2020 program to promote the internationalization of research, particularly within the Doctoral Schools of Université Paris-Saclay.

## ÉCOLE CENTRALE : AN INTERNATIONAL NETWORK

CentraleSupélec has 3 campuses abroad, developed with the Group of École Centrale, in Beijing (China), Hyderabad (India) and Casablanca (Morocco).

In the future the network should be expanded in Mauritius and Brazil.

## INTERNATIONAL LABORATORIES

For the past 10 years, CentraleSupélec has run the SONDRRA (UMI) joint international research unit, in the field of radars, with the National University of Singapore (NUS). The Institute has also run two Associated International Laboratories in China, in the fields of IT, Mechanics and Materials with shared Chinese partners. CentraleSupélec has also international laboratories in Brazil, Canada and USA.

## ALUMNI NETWORK

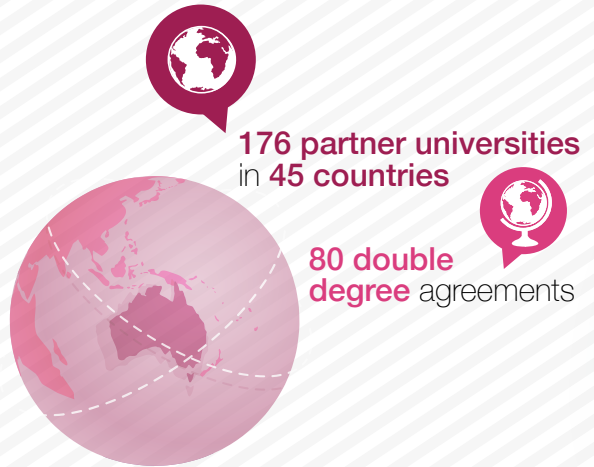
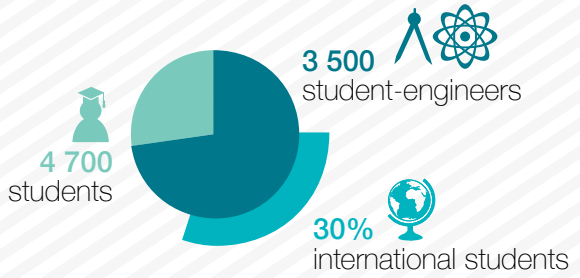
CentraleSupélec boasts more than 35,000 active professional alumni throughout the world (5,000 alumni abroad).

Many of them work in Europe, but members are increasingly working all around the world. Groups of former students already existed independently in major zones such as China, Japan, Brazil, and the USA.



# KEY FIGURES

## STUDENT BODY



- 18 research** departments or teams
- 1 research federation
  - 4 international associated laboratories
  - 3 associated laboratories (CEA, Thales, EDF)



## STAFF



408 PhD candidates



65 full-time researchers

70 post-doctoral students



70 full-time faculty

482 administrative & technical staff



300 faculty-researchers

Budget  
105 M€



140 corporate partners,  
including more than 20 SMEs



Executive Education : Turnover +10 M€  
300 training & degree programs



13 teaching & research  
Chairs

53 patents

An influential alumni network :

35 000 alumni, working in all economic sectors  
worldwide



Source:  
Web of  
Science



# CAREER SECTORS

**Transportation**  
**Counsel**  
**ENERGY**  
**Finance – Bank – Insurance**  
 Other (defense, public administrations, management, trade, distribution, media...)

**Data processing & Information services**  
**Electronic & telecommunication**  
**Construction**  
**Industry (automotive, aeronautics, food, chemical, pharmaceutical...)**

**Teaching & Research**

## AVERAGE HIRING WAGE:

### FRANCE

46 000 € (gross, yearly, bonus included)

### INTERNATIONAL

61 500 € (gross, yearly, bonus included)



CentraleSupélec

[www.centralesupelec.fr](http://www.centralesupelec.fr)

