

3



Engineering is an ambitious new program from two world-renowned engineering institutions: CentraleSupélec Université Paris-Saclay and the Faculty of Engineering at McGill University.

The two institutions have taken the liberty of starting from scratch to design an original Bachelor's degree program that combines scientific excellence and broad knowledge of the challenges of the 21st century in a professional context. The result is an English-taught program with an international outlook, with two years of experience on the CentraleSupélec campus in Paris-Saclay and two years in the heart of Montreal at the McGill Faculty of Engineering.

We have the firm conviction that mathematics and physics are the fundamental basis for all scientific work but that these two disciplines cannot be sufficient to meet the challenges of society. We therefore designed a curriculum to provide skills in all areas of engineering, life sciences, digital and management.

Students will learn science by being in contact with research laboratories and companies and have many opportunities to apply their learning during projects and internships, starting in the first year. We are delighted to offer a rich program for future professionals with solid scientific foundations and awareness of current transitions and challenges.



Franck Richecoeur Dean of Studies - Bachelor Programs, CentraleSupélec, Université Paris-Saclay





YEARS IN FRANCE

STUDENTS





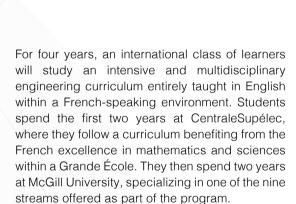




The Bachelor of **Global Engineering** gathers what's the best of these two top universities worldwide while benefiting from an utterly remastered pedagogy and spirit.







The curriculum includes three internships to facilitate a transition towards the industrial and corporate world. Students will also be able to partake in sustainable development challenges, giving them the keys to effect social impact.

Following the first two years of scientific fundamentals, students will enter one of nine streams: Bioengineering, Chemical, Civil, Electrical, Mechanical, Materials Engineering, Data Science, Entrepreneurial and Breadth.

Beyond the intense curriculum, students will enjoy two very different campuses. In France, CentraleSupélec is just 20 km from Paris, in the heart of the "French Silicon Valley". McGill's campus is in the heart of downtown Montreal, one of the world's most multicultural and vibrant cities. Both campuses host numerous sports facilities and student clubs. Upon graduation, students can join the industry in a broad spectrum of capacities whether consulting or engineering firms or as an entrepreneur. Or they can continue their studies a master's level worldwide.

Global Engineering al Engineering







CENTRALESUPÉLEC THE LEGACY OF FRENCH SCIENTIFIC EXCELLENCE

Mission: The training and empowerment of our graduates to enter professional life with a strong focus on ethics, responsibility, and a commitment to addressing urgent societal challenges.

CentraleSupélec lies on a stimulating, large and quiet campus 20 km south of Paris, at the heart of the Saclay plateau, known as the "French Silicon Valley". This unique ecosystem of academic institutions - Université Paris-Saclay, Schools of Engineering - research centers and R&D laboratories embodies the spirit that CentraleSupélec built over the years. The Institution has strong historical ties to business and industry and is a pioneer and leader in engineering in France and Europe.

CentraleSupélec is a founding member of Université Paris-Saclay and the coordinator of its Graduate School of Engineering and Systems Sciences.

2ⁿ

BEST SCHOOL OF ENGINEERING IN FRANCE (LE FIGARO) 0000

26%

INTERNATIONAL STUDENTS OF THE ENTIRE STUDENT BODY 000

18th

IN THE TIMES HIGHER EDUCATION GLOBAL UNIVERSITY EMPLOYABILITY RANKING 2022

DINIVERSITE PARIS-SACLAY:



RANKING

THE SHANGHAI

WORLDWIDE IN

1

IN MATHEMATICS AND 9TH IN PHYSICS WORLDWIDE (ARWU 2022)



72nd

IN ENGINEERING WORLDWIDE (QS 2021)



Shaping International and Dedicated Scientists

At the end of the Bachelor's degree, graduates will be aware of intertwined emerging challenges on the social, environmental, scientific, and technological levels and be able to work on complex projects with a solution-oriented mindset.





An intelligent use of data nowadays forms the core of business decisions and constitutes the driving force of the societal and economic evolution of the years to come.

The Bachelor of Global Engineering aims to reinvent undergraduate engineering programs. CentraleSupélec and McGill created this program around strong core values: excellence, multiculturalism, and sustainable social and corporate impact. Designed for a fastchanging world, the Bachelor of Global Engineering addresses corporations' needs for engineers and trains future leaders.

Over and above a classic engineering curriculum, students will develop and further study relevant issues and develop critical skills during the four years: climate change, new technologies, digitalization and programming, innovation, complex problem solving, teamwork, cross-culturality, communication, corporate behavior, and analytical capabilities.



Olivier Gicquel Provost at CentraleSupélec Université Paris-Saclay

Program Overview

The Bachelor of Global Engineering is a hybrid undergraduate program that takes elements from the best of both European and North-American engineering education traditions, resulting in a new paradigm between "breadth" (generalization) and "depth" (specialization).

This four-year program takes place in France for the first two years and then in Canada for the last two.



The McGill-CentraleSupélec Bachelor of Global Engineering program is authorised by the French Ministry of Higher Education, Research and Innovation to award a recognised BAC+3 degree, Bachelor's Grade, to its



Courses at CentraleSupélec

1ST & 2ND YEAR

Renowned for its excellence in Mathematics and Physics, CentraleSupélec's Bachelor courses focus on developing and sharpening your knowledge and skills in these subject areas during the first 2 years of the program.

BASIC SCIENCES

Mathematics

- · One-dimensional analysis
- Multi-dimensional analysis
- Asymptotic analysis
- Discrete probabilities
- Linear algebra
- Topology and functional analysis
- Numerical analysis
- · Continuous probability & Introduction to statistical modelling

Physics

- · Introduction to classical mechanics
- Electric circuits
- Thermodynamics
- Waves Physics
- Electromagnetism
- & conduction
- Electromagnetism & waves
- Wave optics

Computer science

- Introduction to programming
- Coding Weeks
- Algorithms
- Fundamentals of programming
- Advanced programming
- Machine learning

Chemistry

- General chemistry
- · Chemistry of solutions
- · Oxidation, reduction, and electrochemistry
- Thermochemistry

Biology

- · Cell biology
- Genetics
- Biology of organisms

ENGINEERING SCIENCES

Modellina

- Introduction to modelling
- · Data and modelling weeks

Automation

- · Introduction to automation and control
- Robotics bootcamp

Projects

- Sustainable development issues
- Research project

PROFESSIONALIZATION & SOFT SKILLS

Human & social sciences

- · Philosophy, ethics and critical thinking
- Topics in international sustainable development
- Perspectives of modern geopolitics
- Ecosystems and biodiversity

Project management, corporation and soft skills

- Project management
- Structure of corporations
- · Organizational behaviour week
- · Business games week
- Economics

Internships

- · Societal impact internship
- Professional discovery
- Global project internship

Languages

• French or a 2nd foreign language

Humanities electives: Every stream counts three humanities classes. The first one must be chosen among a given list of courses focused on the impact of technologies on society. The two other classes are to be chosen in a broader scope and can be related to social sciences, management, law, or humanities.

Courses at McGill

3RD & 4TH YEAR

When at McGill, students can select one of **nine streams**:



This multidisciplinary program allows students to acquire fundamental knowledge in all engineering disciplines, complemented by elective courses on sustainable development and additional courses in the humanities and social sciences. The training provided in the Breadth stream will prepare students for careers requiring the supervision and management of various technical teams, projects, and organizations.



Bioengineering

This stream is designed to offer a wide choice of elective courses covering most of McGill's areas of its Bioengineering undergraduate its Bioengineering undergraduate program. Bioengineering is unique in that it combines the fundamental principles of engineering with biology. Therefore bioengineers must acquire a strong mathematics, physics, and chemistry background.



Chemical Engineering

The courses in this stream are principally from the Department of Chemical Engineering of McGill's Faculty of Engineering. It includes a selection of key courses from McGill's Chemical Engineering undergraduate program. Chemical engineers are involved in the entire life cycle of products, from raw material extraction to recycling and safe disposal, through processing and integration into commercial goods and equipment.



Civil Engineering



Data Science

Students in this stream study algorithms, model-based programming methods, data structures, database systems, and artificial intelligence to prepare them to manipulate, analyze, and draw conclusions from the large data sets collected in modern information. This training will prepare them for jobs in a variety of industries: artificial intelligence, information technology, management consulting...



Electrical Engineering

This stream provides a broad range of experience in various topics, including electrical and electronic systems and software and hardware design. Electrical engineers design and develop electronic systems that underlie technologies such as autonomous vehicles, robotics, telephony, video games, automation, and home power. It is designed to offer the possibility of a specialization in robotics, if desired.



Entrepreneurial



Materials engineers are trained to understand the relationship between the structure and function of materials. Materials engineering education provides skills for a wide range of employment opportunities. Graduates may work in mineral processing or metal production companies, be hired by engineering or management consulting firms to work on local and global projects, and test and design materials for the aerospace, battery, or automotive industries.



Mechanical Engineering

8 Global Engineering



Internships, Special Weeks & Projects

Throughout the four years, students will work on several projects and undertake internships, allowing them to practice hard and soft skills learned during and outside classes, discover the professional world, and enable rapid training on critical issues.

Internships, and summer schools during summer semesters

Between years 1 and 2, students must spend at least five weeks at a humanitarian, non-profit or non-governmental organization as part of the Social Impact Internship. The objective is for students to be confronted directly to real life social issues and in a context that is, if possible, international or multicultural.

The Professional Discovery Internship between years 2 and 3 and the Global Project Internship between years 3 and 4 are designed to be meaningful and consistent with students' choice of stream. Where appropriate, it will emphasize international aspects and be impactful. The Professional Discovery Internship must last at least six weeks, where students are immersed in a business with a solid international or multicultural focus, possibly with a rotation of positions. The Global Project Internship lasts three months alongside a project advisor who offers a subject with high potential for concrete results and having, if possible, an international component.

After the first and third years, there will be optional two-week Summer Schools focusing on sustainability issues. To keep a link with the university students are not staying at, the first summer school will be held online by CentraleSupélec and the second by McGill.

Living costs & housing

HOUSING

At CentraleSupélec, Bachelor students are strongly encouraged to live in the dedicated residence on campus. At McGill, students usually live off campus in Montréal. McGill will offer oncampus housing to 3rd-year students.

CAMPUSES

CentraleSupélec campus is at the heart of the **Paris-Saclay** cluster. It comprises three main buildings and hosts a research centre, workspaces, lecture halls and classrooms, student club offices, restaurants, gyms and a fab lab.

McGill's main campus lies in **downtown Montreal**, at the foot of Mount Royal. Mixing historical and modern architecture, you will find research centres, faculty members' offices, lecture halls and workspaces on the campus. Most of the student life happens in downtown Montréal.

TUITION FEES

Standard rate: 44 000€ / year

Reduced rate: 7 900€ / year

For students from the European Union* (including France and Canada (including Québéc). Students with dual nationality will pay the most advantageous rate.

- For years 1 and 2, tuition fees will be paid in euros (€) to CentraleSupélec.
- For years 3 and 4, tuition fees will be those in effect for the fall 2023 academic year. They will be paid in Canadian dollars (\$) to McGill.
- * Requirements and supporting documents are available online for exemption from part of the registration fees for international students for whom it is their first registration.



OF THE STUDENTS RECEIVED A SCHOLARSHIP/ STUDENT AID

Global Engineering

11

REQUIREMENTS

- · Excellent scientific background
- · Interested in learning and living in an international and multicultural environment
- · Demonstrated proficiency in English
- · Open-mindedness and dedication

APPLICATION

- via the CentraleSupélec platform (for students completing or having completed a pre-university diploma, including a French baccalaureate)
- via Parcoursup (only for students completing a French baccalaureate)

All students can apply on the CentraleSupélec platform (where more places are available than on Parcoursup and where acceptance of the offer must be made by May 1st at the latest) and on Parcoursup (see Parcoursup calendar), regardless of their nationality and the baccalaureate diploma they have prepared, whether they are first-year students or senior high school.

MORE INFORMATION

For any further information, contact us at:

admissions@centralesupelec.fr

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