BSc GE Bachelor of Science

Global Engineering
The Bachelor of Global 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

For four years, an international class of learners will study an intensive and multidisciplinary engineering curriculum entirely taught in English within a French-speaking environment. Students spend the first two years at CentraleSupélec, where they follow a curriculum benefiting from the French excellence in mathematics and sciences within a Grande École. They then spend two years at McGill University, specializing in one of the nine streams offered as part of the program.

The curriculum includes three internships to facilitate a transition toward 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 at a master’s level.

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.
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.
Shaping International and Dedicated Scientists

Thanks to the international dimension of our program, graduates will be agile while working in teams, with the capacity to adapt their communication styles with collaborators from different cultures.

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 fast-changing 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.

Strong link with companies and businesses throughout the whole program. Students will do three mandatory internships during the four years.

Multicultural
The Bachelor takes place in two countries: France and Canada. It is a 100% English-taught curriculum taking place in a French-speaking environment.

Generalist Education (1st and 2nd year)
French engineering curricula are well known for their generalist approach.

Specialized Education (3rd and 4th year)
North American educational systems are renowned for their specialized approach.

The McGill-CentraleSupélec Bachelor of Global Engineering program is authorized by the French Ministry of Higher Education, Research and Innovation to award a recognized BAC+3 degree, Bachelor’s Grade, to its students.
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 program’s first two years.

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Chemistry

• General chemistry
• Chemistry of solutions
• Oxidation, reduction, and electrochemistry
• Thermochemistry

Biology

• Cell biology
• Genetics
• Biology of organisms

Humanities electives: Every stream counts three humanities classes. The first one must be chosen from a given list of courses focused on the impact of technology on society. The two other classes are to be selected 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:

1. Bioengineering

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

2. 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.

3. Electrical Engineering

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

4. Civil Engineering

The civil engineering program trains engineers with varied proficiencies who interact with infrastructures of modern society, from roads to water management. In which we live, environmental engineers ensure the sustainable development of water, land, and all resources while minimizing the impact on our environment, climate, and public health.

5. 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 datasets collected in modern information. This training will prepare them for jobs in various industries, artificial intelligence, information technology, management consulting, etc.

6. Mechanical Engineering

Mechanical engineers work in diverse and specialized areas in many aspects of civil and mechanical engineering. They design and operate systems in many areas, from airplanes and space shuttles to bicycles and coffee machines. Typical applications include automotive, energy, computer, and transportation. The growth of the automotive industry is a high demand for mechanical engineers. With some specialized areas, mechanical engineers pursue other career paths, including sales, finance, and management.

7. Entrepreneurial

Students in the Entrepreneurial stream receive a broad, technical education complemented by business and management training, all with a focus on entrepreneurship. In addition a solid foundation in the engineering sciences, students take courses in entrepreneurship, business plan design, etc. The complete training is designed to train engineers with the ambition to pursue careers in emerging or revitalized companies.

8. Materials

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.

9. Electrical Engineering

Electrical engineering draws upon a wide range of technologies, including electronics, computers, and information science. It is a highly diverse field, with applications in almost every aspect of modern life. Electrical engineering graduates are well-prepared for careers in a wide range of industries, including power systems, communications, and control systems.
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

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 on-campus 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 center, workspaces, lecture halls and classrooms, student club offices, restaurants, gyms and a fab lab.

McGill’s main campus lies in downtown Montréal, at the foot of Mount Royal. Mixing historical and modern architecture, you will find a research center, 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 Québec). 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.

22% OF THE STUDENTS RECEIVED A SCHOLARSHIP/STUDENT AID
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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