



# Bachelor of Science



# École Polytechnique at a Glance

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Founded in 1794, École Polytechnique is France's leading institution in science and technology.

Over two centuries, alumni have profoundly marked the history of science and industry and contributed to the great advances in their fields that have shaped the world as we know it today.

Since its founding, the university has borne a long tradition of scientific excellence. Researchers, professors and alumni from École Polytechnique have received prestigious awards and distinctions, including Nobel Prizes and Fields Medals.

## **Located in a world-renowned science and technology ecosystem**

The École Polytechnique campus is situated less than an hour from central Paris at the heart of the Paris Saclay research and business cluster. It encompasses research facilities, numerous higher education institutions and also over fifty research centers of private companies.

## International Reputation



Top Universities in France  
QS 2017



Best small universities  
Times Higher Education 2017



Graduate Employability Rankings  
QS 2018



Top universities  
with the best student-to-staff ratio  
Times Higher Education 2018

# World-Class Research

480

Researchers  
and professors



39%  
International  
Faculty



24

Academic  
and Research  
Chairs



22

Research  
Laboratories



570 PhD  
and post-doctoral  
students



1,400  
Publications  
per Year





# Driving Tomorrow's Science and Technological Innovation

At the heart of a vibrant scientific community, our students interact with internationally renowned scientists, engineers, managers, entrepreneurs and CEOs of major companies.

## The Research Center

The École Polytechnique Research Center combines the most fundamental aspects of research with the pursuit of progress in the most applied main fields in order to meet future scientific, technological and societal challenges. Bachelor students have the opportunity to discover the laboratory environment from day one of their Program, providing an exceptional learning experience. Laboratories are open to all students for projects.

## Entrepreneurship and Innovation

The Drahi X-Novation Center is dedicated to entrepreneurship and innovation at École Polytechnique. This unique space provides students with a business incubator and accelerator where startups can expand and improve their business models. Bachelor students can take advantage of this center, which fosters creativity

and promotes experimentation from their first-year onwards.



For instance, one first-year student, Alexis, arrived to campus with a strong basis in 3D printing and CAD, but students from other programs taught him how to use a laser cutter and a digital embroidering machine. He has in turn taught these valuable skills to other students. The Drahi-X is a place where different student populations come together to share ideas and learn from each other, as well as from entrepreneurs and professionals. It's the ideal spot to exchange tips and tricks, and to let your imagination run wild, while having access to cutting-edge technology.



# The École Polytechnique Experience

Conveniently located only 20 kilometers south of Paris, our campus is nestled among 160 hectares of nature, with easy access to one of the world's most exciting cities. On our campus, no matter what your interest might be, you'll find a way to get involved.

## On-campus Accommodation

All students for the Bachelor Program are housed on campus for the duration of the Program, which allows students to fully partake in our vibrant community, while developing team spirit and solidarity. Students (including international students) can be eligible to receive a monthly housing allowance from the French government.

## International Student Office

At École Polytechnique, we have a dedicated office whose job is to make sure that all international students have the support they need before arriving and for the duration of their study Program.

## Preparing your arrival

All non-EU students receive personalized advice about visa procedures in relation to their country of residence, as well as the insurance they will need to take out in order to be fully covered for their personal belongings and healthcare.

## During your stay in France

When you arrive:

- Welcome to France Information Sessions
- Organization of events throughout the year with the Bachelor team (cultural field trips for example)
- Giving general advice on aspects of living in France and supporting students with any administrative procedures they may have to manage, such as visa renewals.

## The Bachelor Student Organization

The Bachelor Student Organization contributes to every aspect of Bachelor students' life on campus, including events, sports, orientation, student trips, social events, and so on. The Organization helps new students figure out everything there is to know about the campus and makes sure that student life is as exciting as they could have imagined. It also manages the creation of student committees designed for and by Bachelor students, in order to foster a diverse, dynamic and inclusive student life that fits with their schedule and workload!







# Outstanding Sports Facilities that Make On-campus Life Unique

Sports remain a key strength of the École Polytechnique experience. Our students enjoy outstanding facilities, enabling them to play a large range of sports and to develop skills such as leadership, teamwork and fair play.

## Physical Education Classes

Students have two mandatory hours of sports per week and also have the opportunity to play the sport of their choice in their free time, usually over the weekend. They benefit from outstanding facilities and a wide range of sports: climbing, swimming, boxing, bodybuilding, rowing, judo, badminton and tennis.

Although the curriculum of the Bachelor Program is very demanding some athletes and well-organized students still find some time to practice sports with students from all of the other programs. Some also take part in sporting events and competitions on campus.

## The Sports Club

Students can benefit from incredible indoor sports facilities, ranging from swimming pools and gyms, to a climbing wall and fencing room. Outdoors, they are also spoilt for choice, with fields for team sports, as well as horseback riding and rowing on our very own lake!

The school Sports Club is open to all students for an annual fee of just €25.

**Contact us:**  
[bachelor-contact@polytechnique.fr](mailto:bachelor-contact@polytechnique.fr)

# Join a World-Class Program

## Our Academic Approach

The Bachelor of Science is a highly selective three-year Program, taught entirely in English and tailored to academically inclined students with a very strong interest in mathematics and science. École Polytechnique's well-rounded approach to learning allows students to develop a solid academic background in science, while exploring topics unrelated to pure sciences. École Polytechnique favors small class sizes with an extremely beneficial student-to-staff ratio.

École Polytechnique's Bachelor Program is officially accredited with the rank of *Licence* (French Bachelor's equivalent) by the Ministry of Higher Education and Research.

## Personal Development and Coaching

Bachelor students benefit from a personal development program. They are put into groups on day one of the Program and assigned a dedicated coach who provides support and monitors their progress. The coaches are experienced professionals and help students to develop their personal and physical skills, individually and as a group through the playing of sports and other specifically tailored activities.

## Tutoring from the École Polytechnique Student Community

Tutoring sessions are held in small groups throughout the year and are led by more experienced students (*Ingénieurs polytechniciens*, Master's, PhD). The aim of the tutoring initiative is to provide Bachelor students with advice to tackle their Program curriculum and offer support when they encounter academic difficulties. Students are also guided by a referent teacher dedicated to monitoring their academic progression.

## A Multidisciplinary Approach

École Polytechnique proposes a multidisciplinary approach with bidisciplinary specializations. Students joining our Program will benefit from a demanding and challenging multidisciplinary scientific curriculum focused on mathematics, computer science and physics.

They will also attend classes in foreign languages, biology, chemistry, humanities, economics and physical education. Bachelor students at École Polytechnique will have the exceptional opportunity to enter our research laboratories from the very first year of their Program allowing them to familiarize themselves with the research environment and interact with the research community.

### Three Double Majors

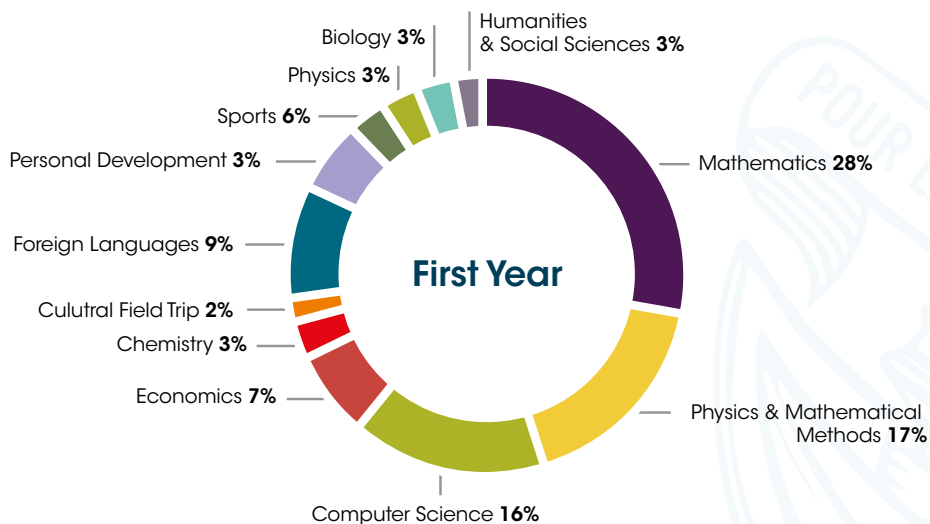
The École Polytechnique Bachelor Program offers students the choice of three double majors allowing them to customize their academic journey with a specialization:

- Mathematics and Economics
- Mathematics and Computer Science
- Mathematics and Physics

# The First Year

All students study the same curriculum during their first year, which provides them with the fundamental skills and knowledge needed for the rest of their academic career. Students discover all of the scientific disciplines at their introduction to higher education, and can then choose their preference for the double major they wish to study from year two onwards.

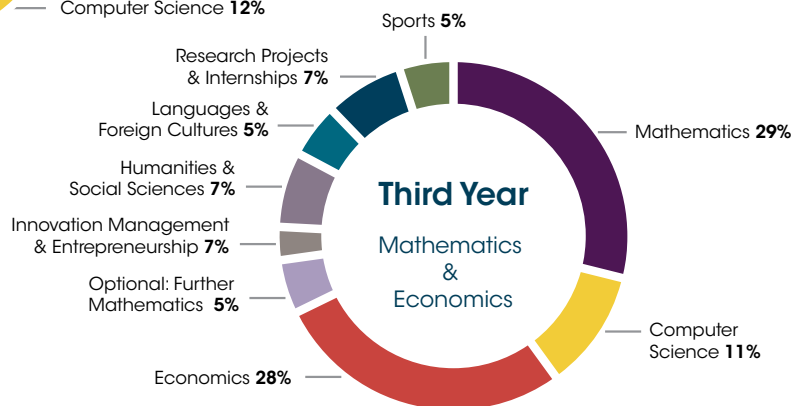
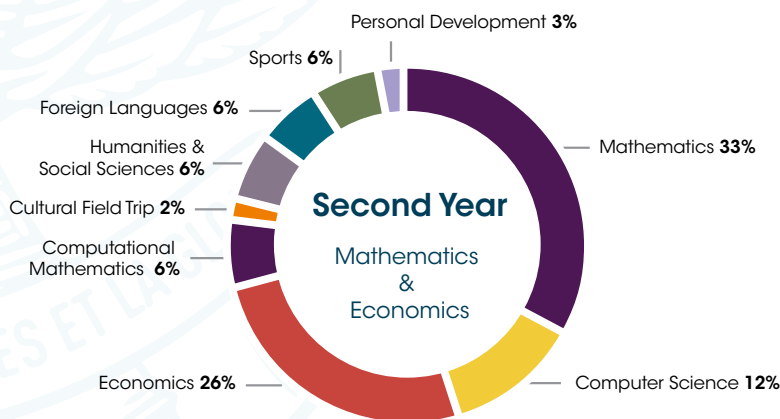
## First Year: Common Core





# Double Major Mathematics and Economics

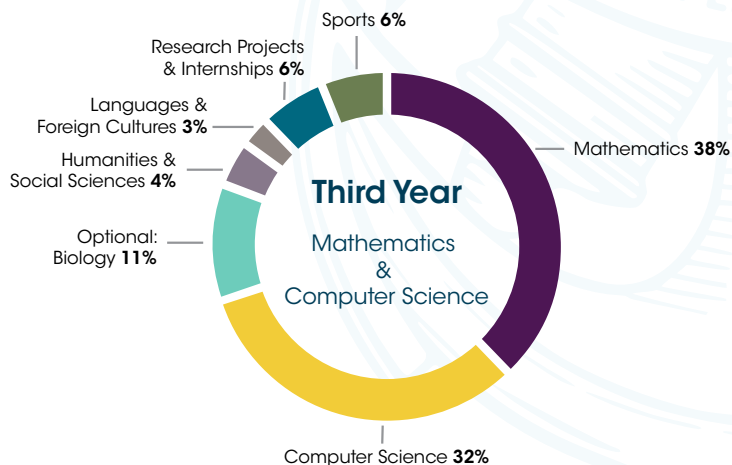
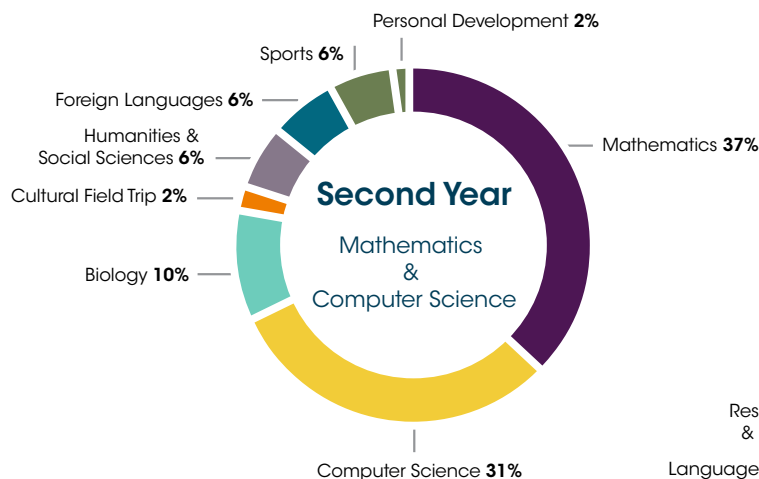
The Mathematics and Economics track of the Bachelor Program offers a scientific approach to economics. It relies on the construction, analysis and interpretation of abstract models, as well as on the confrontation of theoretical conclusions with empirical data coming from the field or from controlled experiments. Following the Program requires strong quantitative skills and a taste for abstract thinking.



# Double Major Mathematics and Computer Science

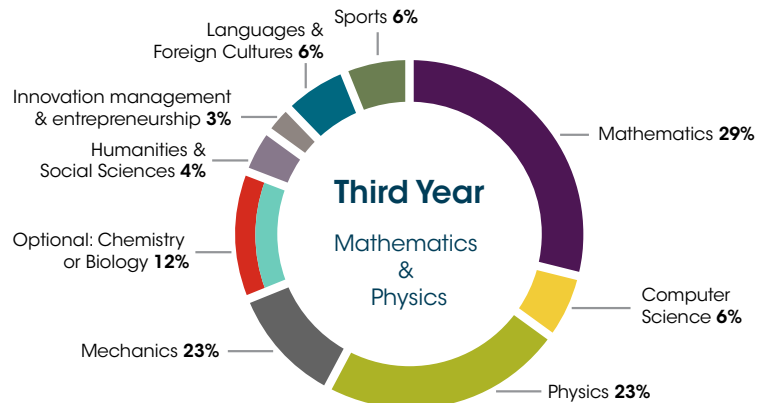
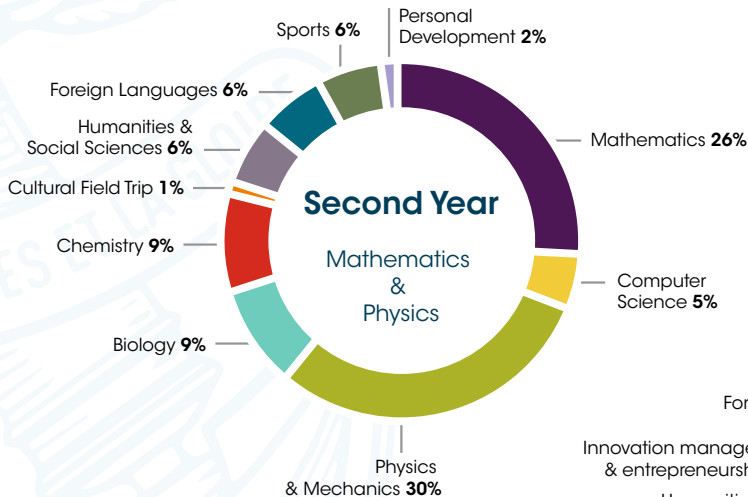
The Mathematics and Computer Science track offers students the opportunity to study the theory, experimentation and engineering that form the basis for the design and use of computers today.

École Polytechnique provides a scientific and practical approach to computation and its applications.



# Double Major Mathematics and Physics

The Mathematics and Physics track will provide the students with the required knowledge and skills for further studies. In the second year, advanced courses on classical mechanics and classical electrodynamics, as well as introductory courses on statistical physics and quantum physics, will provide the necessary theoretical background for mastering the concepts of motion, energy, fields, waves and multi-body systems. Building on the knowledge acquired in the first year, students will put to work their expanding mathematical toolbox, and exercise their capability for abstract thinking.



# An International Experience

68%

International  
Students

32

Nationalities

39%

International  
Faculty

6

Language  
Options

## A Class with an International Profile

École Polytechnique is proud to recruit students to our Bachelor Program from all around the world. The diversity in the class is the first international experience that students encounter when they arrive.

## Learning and Perfecting Foreign Languages

During the Program, all students take courses in foreign languages and the history and culture surrounding those languages:

- Advanced courses (B2-C1 level) are available for French, German, Spanish and Chinese.
- Intermediate courses (A2-B1 level) are available for French, German and Spanish.
- Beginners' courses\* (A1 level) are available for French, Chinese and Japanese.

*\*These courses are subject to sufficient demand from students.*

Advanced English classes are also offered to students who want to perfect their English on arrival in order to get the most out of their curriculum from day one.



## Studying Abroad

École Polytechnique encourages its students to acquire international experience during their studies. We offer our Bachelor students the opportunity to spend the first semester of the third year abroad in a partner university. Our aim is to provide students with a solid international profile, allowing them to confront the challenges of the multicultural world in which they will evolve. In order to work in France or abroad, international expertise and intercultural skills are essential for future graduates.

The Vice Presidency for International Relations has signed specific non-degree agreements for the Bachelor Program with top universities around the world, facilitating the organization of semesters abroad. Tuition fees are waived in the majority of partner institutions around the world, except the USA, but there are often registration fees to pay. In the case of the USA, tuition fees are reduced with partner institutions but very rarely waived.

*The countries in which agreements have been signed are the following:*



### Europe

Belgium  
Denmark  
Italy  
Germany  
Switzerland  
UK



### Asia

China  
Hong Kong  
Japan  
South Korea  
Taiwan



### The Americas

USA  
Canada  
Mexico

The International Relations team facilitates admissions procedures and provides a variety of resources and services to assist students who wish to study abroad.

# Admission Criteria

## General Admission Requirements

### Applicants must meet one of the following requirements

They must currently be enrolled in their last year of secondary education, which must be completed before the start of the Bachelor Program (e.g. French Baccalaureate, International Baccalaureate, A-levels, secondary school/high school diploma).

Or- Have recently graduated from secondary education.

Or- Have recently graduated from secondary education and be currently enrolled in post-secondary education.

Students are firstly selected on their strong academic background, especially in mathematics and science but we also recognize exemplary, extensive achievement in any intellectual or creative endeavor. This includes accomplishments in extracurricular activities such as performing arts or athletics, scientific competitions, internships, leadership in your school or community, volunteering, etc.

## Specific Admission Requirements

Consistent with all of École Polytechnique's academic programs, admission to École Polytechnique's Bachelor Program is highly competitive and is designed for top students with very high potential, who are capable of following a rich and demanding curriculum.

In addition to meeting the general admission requirements, applicants to École Polytechnique's Bachelor Program should also meet the following specific requirements:

- have an overall strong academic average
- have taken advanced mathematics courses, and at least one advanced science course
- have a good level of English (Common European Framework of Reference for Languages level C1)

## Admissions requirements by high school curriculum

### French Baccalaureate:

Scientific stream preferred

### International Baccalaureate:

Mathematics and at least one science course should be Higher Level. If Higher Level mathematics is not offered by your school, you may provide evidence of an alternate advanced mathematics course/training (e.g. having taken an introductory college or university level mathematics class)

### American (US) high school:

Honors or AP classes in mathematics and/or sciences are preferred

### British-patterned Education:

Students are required to have completed either the two-year A-level program, the IB diploma program, or another similar academic curriculum

### Other curriculum:

Please contact the admissions office to check your eligibility at [bachelor-contact@polytechnique.fr](mailto:bachelor-contact@polytechnique.fr)



# How to Apply?

Your application must be submitted online and must include the following:

1. Scanned copies of your transcripts for the last four academic years, completed and in progress (i.e. if you are currently in 12<sup>th</sup> Grade, please provide your transcripts from 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> Grade)
2. Contact details of two references (at least one of which is academic)
3. Personal statement (form to be completed in the online application)
4. Resume (form to be completed in the online application)

Shortlisted applicants are invited to a 50-minute interview via videoconference.

The interview is conducted entirely in English and is divided in 2 parts:

**20 minutes:** general scientific culture and motivation for joining the Program

**30 minutes:** mathematics questions based on the secondary education curriculum

Admissions decisions are based on the quality of the application file and the interview score.

## Admissions Calendar

There are two rounds of admission every year.

Students who have not been offered admission during the first round cannot reapply for the second.

Rounds	Application Deadlines	Interview Dates (for shortlisted candidates only)	Final Admission Results
First round	October 1, 2018 to November 20, 2018	Early to late January 2019	Mid-February 2019
Second round	January 15, 2019 to February 28, 2019	Early to late April 2019	Early May 2019

**Application fees:** An application fee of €95 is required upon application submission.

This can be paid by credit card or bank transfer.

**Your Admissions Officer:** If you have already started an application and require further assistance, please do not hesitate to contact our Admissions Officer at: [bachelor-admissions@polytechnique.fr](mailto:bachelor-admissions@polytechnique.fr).



# Tuition Fees and Financial Aid

## **Tuition Fees**

Annual tuition fees for the 2019/2020 intake  
(Class of 2022):

- > €12,000 per year for EU students
- > €15,000 per year for students from outside the EU

## **Financial Aid**

At École Polytechnique, we admit the most talented undergraduate students from all over the world and we strive to attract and reward the very best students, regardless of their financial situation. To this end, eligibility for financial aid is reserved for students who are admitted with honors in each round of admission.

There are two categories of financial aid: merit-based and need-based. These categories are not mutually exclusive.

## **Merit-based financial aid**

### **Excellence Scholarship** (15 available)

The École Polytechnique Foundation offers a limited number of scholarships based on academic excellence to help us attract and reward the very top students worldwide. Each scholarship award is €4,000 per year paid in 10 monthly installments. The Excellence Scholarship's renewal is subject to academic success and attendance in the Program.

## **Women in Science Scholarship**

(1 per round of admission)

Historically, women have been underrepresented in scientific fields of study. At École Polytechnique we take this issue seriously and strive to promote gender equality. To this end, the École Polytechnique Foundation has created a specific scholarship for two exceptional female students admitted to the Program. The scholarship award is €6,000 and paid in 10 monthly installments and only offered during the first year.

## **Need-based financial aid:**

### **Tuition Fee Waivers**

École Polytechnique offers tuition fee waivers based on students' financial needs. Tuition fee waivers range from €1,000 to €10,600/€13,600 (depending on your personal tuition fees). Please note that even the highest tuition fee waiver requires a €1,400 annual tuition fee. Tuition fee waivers only cover tuition costs; any other expenses are the responsibility of the student.

An interest-free loan is also available to all Bachelor students through the École Polytechnique Foundation.

**Contact us:**

**[bachelor-contact@polytechnique.fr](mailto:bachelor-contact@polytechnique.fr)**







<https://portail.polytechnique.edu/bachelor>



## Programs

Bachelor of Science

*Ingénieur Polytechnicien* Program

Masters

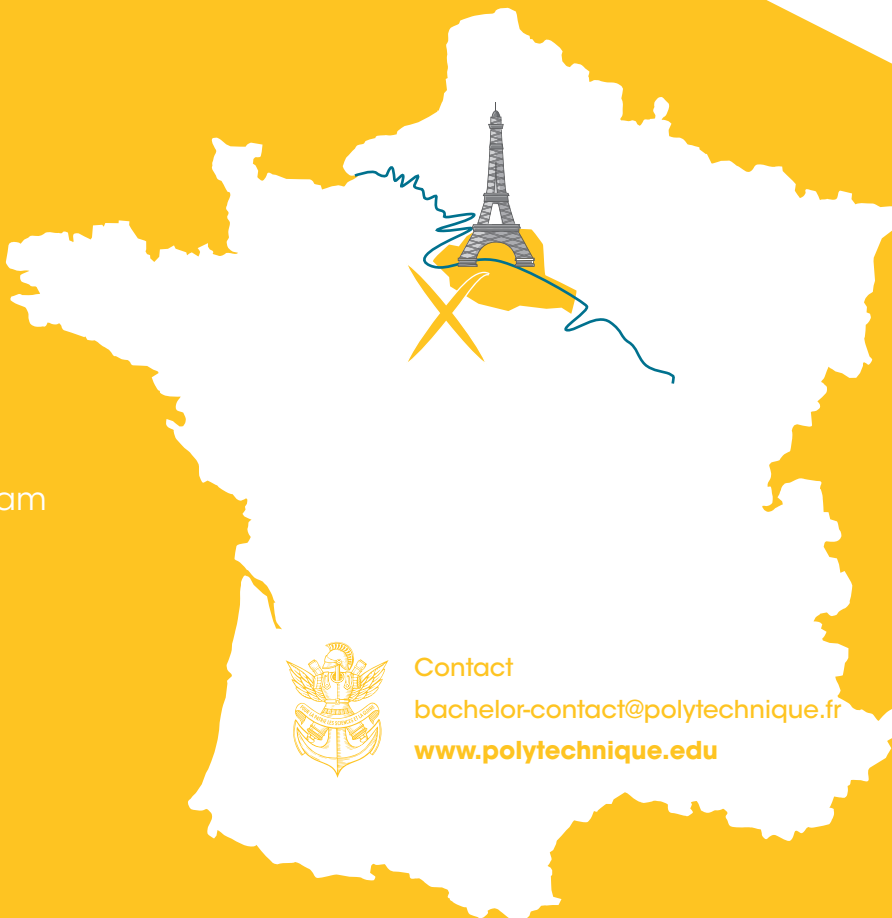
PhD Program

PhD

Summer Schools

Executive Master

Executive Education



Contact

[bachelor-contact@polytechnique.fr](mailto:bachelor-contact@polytechnique.fr)

[www.polytechnique.edu](http://www.polytechnique.edu)