Course Selection Guide
for Exchange Students at École Polytechnique
applying for the International Academic Exchange Program
Academic year 2019- 2020

This guide is intended to help exchange students at École Polytechnique understand their courses' options and choose courses effectively.

Exchange students take courses with regular full-time students. They enroll in the International Academic Exchange Program (PEI) and receive ECTS credits for courses validated during their exchange period.

Exchange students are enrolled in one specific level of study (undergraduate or graduate), and they may also attend courses from other levels if they meet all conditions for entry, including language and academic requirements.

1. Requirements

At undergraduate level, eligible students must have completed at least one year of their program of study in science or engineering.

At graduate level, eligible students must have completed at least two years of their program of study in science or engineering.

2. Enrollment

Exchange students typically take 3 or 4 scientific courses per period. In some cases, an extra 5th course may be added. One of the courses may be replaced by a scientific project.

Please be aware that the majority of courses' credits must be taken from courses in the chosen level of enrollment for the entire exchange period.

Exchange students can also follow humanities, management and language courses in their chosen level of enrollment.

3. Approval process

We organize the following approval process to guarantee that chosen courses meet our language and academic conditions and to let exchange students register to courses prior to arrival on campus.

- Each student is required to submit a study plan when applying

- An academic exchange program advisor will assess it and our selection committee will approve it

- The Online Courses registration will be open to exchange students **from Mid-June to Mid-July**

- Courses will start between **late August and Mid-September**.

Please note that admission does not guarantee that you will be able to enroll in any particular course.

Exchange students need to register on the online course registration after their admission.

We ask exchange students to be flexible when discussing their study plan with their home institution, as we cannot guarantee that all classes included in the course catalogue will be offered and as timetables are subject to change. Confirmed classes and class schedules are usually finalized in late July.

You are interested in

- [Undergraduate level courses](#)

- [Graduate level courses](#)

You would like to study

- [Mathematics – Applied Mathematics – Physics – Computer Science – Economics](#)

- [Mechanics, Energy, Electrical Engineering, Chemistry, Biology](#)

- [Humanities and Social Sciences](#)

- [Innovation Management and Entrepreneurship](#)

- [Improve your language skills](#)

- [Sports](#)

You would like to join us for

- [Fall term or the whole year](#)

- [Spring term](#)

[Do you have any troubles in finding courses on Synapses?](#)

[Further Resources to help you prepare your stay](#)

Need for help?

Please contact us at exchange-international@polytechnique.fr

You are interested in Undergraduate level courses

You can join our Bachelor Program.

The first year of studies focuses on the acquisition of the fundamental skills and knowledge. For their second and third years, students choose between three double majors:
- Mathematics and Physics
- Mathematics and Computer Science
- Mathematics and Economics

For each double major, students have the opportunity to pursue **a minor**:
- Mathematics and Physics: Minor in Biology or Chemistry
- Mathematics and Computer Science: Minor in Biology
- Mathematics and Economics: Minor in Computational Mathematics

Exchange students have access to the whole course catalog, minor included. We recommend you to choose your courses in the same Double Major and in the same year to avoid timetable conflicts.

Exchange students can carry out a Bachelor Thesis. Please note this opportunity is open to students staying the whole academic year and joining the 3rd year of the program (subject to academic approval). Exchange students must register for it at the beginning of their application.

If you want to add one or two courses at graduate level, you can ask for it. It will be subject to academic approval to check if you have the basic academic and linguistic prerequisites to follow courses in an upper level. Please note that calendars are not similar and exams are to be taken at different time during the year.

Calendar: Please note that Semester 1 and Semester 3 courses go through the month of January, while those of Semester 5 end in December.

You are interested in Graduate level courses

You can join the 2nd and 3rd years of our *Ingénieur* polytechnicien Program and ask to add up to 2 courses per period in one of our Masters of Science and Technology.

Ingénieur polytechnicien Program - Year 2

Courses are taught in French only and exams are to be taken in French as well. Your French proficiency must be high.

Year 2 is divided into 3 periods and provides a multidisciplinary scientific education.

Exchange students are advised to choose 3 or 4 scientific courses per period.

Exchange students can choose only one Applied Laboratory Module (MODAL) during their Exchange period. Please note that this project is subject to numerus clausus but do not hesitate to ask for it and we will help you to find the right project at the right time of the year.

If you want to add one course from 3A or from a Master of Science and Technology, you should have completed at least 3 years of Bachelor level. It will be subject to academic approval to verify if you have the academic and linguistic prerequisites to follow courses in an upper level. Please note that the calendar are not the same and therefore some timetable conflicts may occur.

Restriction: Group Science Projects are not open to exchange students.

Ingénieur polytechnicien Program - Year 3

Courses are taught in French and/or English. Year 3 is divided into 3 terms: the first two terms consists in scientific courses and have a duration of 3 months each while the third term is dedicated to a scientific research internship (for a duration up to 6 months). The exchange student can join us for 1, 2 or 3 terms.

Courses are divided into scientific concentrations. Exchange students are **advised to choose 4 courses per term in the same concentration track,** one of them is a Practical Lesson (called EA or "Enseignement d'Approfondissement"). **One course can be chosen in another concentration track if the timetable allows it**.

Please be aware that Practical lessons are subject to numerus clausus.

Students can add a scientific project, which duration is of 1 or 2 terms depending on the concentration track (please contact us for further information) **and/or undertake a research internship in Spring term**. For scientific projects, students may enroll but due to limited seats, it will depend on the approval of the course instructor.

Research internships are open to exchange students who stay the whole year and if the internship is completed at an École Polytechnique's laboratory. Please note that you cannot do a research internship and follow courses at the same time.

If you want to add one course in 2A or in a Master of Science and Technology, you can ask for it. It will be subject to academic approval. Please note that the calendars are not the same and therefore some timetable conflicts may occur.

Master of Science and Technology

Master of Science and Technology are exclusively taught in English.

Students may enroll in any of the courses mentioned above, except for those taught within the Master of Science and Technology Data Science for Business Program, which is not open to exchange students.

Exchange students cannot enroll in courses taught as part of the 2nd year of a Master of Science and Technology.

You would like to study Mathematics – Applied Mathematics – Physics – Computer Science – Economics

A wide range of courses in Mathematics, Physics, Computer Science and Economics are available within **the Bachelor and the *Ingénieur polytechnicien* programs**

- ✓ To find out more on the Bachelor's program syllabus
- ✓ To find out more on the list of courses available in the 2nd year of the *Ingénieur polytechnicien* Program
- ✓ To find out more on the list of courses available in the 3rd year of the *Ingénieur polytechnicien* Program

You would like to study Mechanics, Energy, Electrical Engineering, Chemistry, Biology

As part of their curriculum, **Bachelor students** have the opportunity, if they wish, to study a minor. This option gives students the opportunity to broaden their knowledge outside of their chosen field. Exchange students can ask to follow one of this course only if they have the academic pre-requisites.

The 3rd year of the *Ingénieur polytechnicien* Program enables students to choose a Scientific Concentration, within the following subjects: Biology, Bioinformatics, Chemistry, Economics, Electrical Engineering, 21st Century Energies, Computer Science, Technological Innovation, Pure Mathematics, Applied Mathematics, Mechanics, Physics, and Science for Environmental Challenges.

You would like to add courses in Humanities and Social Sciences

In addition to their education in fundamental sciences, École Polytechnique's students follow several courses providing them with the complementary soft skills to round out their scientific background and knowledge. Through courses in humanities and social sciences, students discover artistic and literary masterpieces, learn about French and European political systems and discuss ethical questions related to sciences.

Courses in the department focused on these three main areas:

- ✓ Law, Economics, Management and Political Science
- ✓ Literature and Humanities
- ✓ Arts and Architecture

Exchange students can ask to join one course if in the Bachelor program and one course and one seminar if in the *Ingénieur polytechnicien* Program **with no required approval and no added fees.**

Please note that in the 3rd year of the *Ingénieur polytechnicien* Program, students cannot follow at the same time the seminar in Humanities & Social Science and the seminar in Innovation Management and Entrepreneurship).

Exchange student must take these courses in their chosen level of enrollment. Students enrolled in the *Ingénieur polytechnicien* Program who do not speak French can ask to follow Humanities and French Culture courses taught in English in the MScT, if their timetables allow it.

You would like to add courses in Innovation Management and Entrepreneurship

The Department of Innovation Management and Entrepreneurship gives basic courses to all students and offers other specific courses in innovation management and entrepreneurship.

Ingénieur Polytechnicien students in Year 3 take these courses addressing the concepts of financial analysis, strategy and team management to build their skills in organizations' management.

Bachelor students have one course in innovation management and entrepreneurship that exchange students may register for, in semester 6.

Exchange students can ask to join one course if in the Bachelor program (in semester 6), one course and one seminar if in the *Ingénieur polytechnicien* Program **with no required approval and no added fees.**

Please note that in the 3rd year of the *Ingénieur polytechnicien* Program, students cannot follow at the same time the seminar in Humanities & Social Science and the seminar in Innovation Management and Entrepreneurship).

Exchange student must take these courses in their chosen level of enrollment. Students enrolled in the *Ingénieur polytechnicien* Program who do not speak French can ask to follow Humanities and French Culture courses taught in English in the MScT, if their timetables allow it.

You would like to improve your language skills

The Language and Culture Department offers a large choice of language courses: Chinese, English, German, Italian, Japanese, Spanish, Arabic, Russian and French as a foreign language.

If you would like to register to French courses, a **placement test** is set up each year at the end of September. Courses are open to beginners (A1 to A2 level), to intermediate levels (B1, B2) and thematic courses are available for students with a C1 and C2 levels.

Exchange students can ask to join one course of French as a foreign language with no required approval and no added fees. You must take these courses in your chosen level of enrollment.

Exchange students can add one more course in another foreign language on demand. If you would like to register to another foreign language course, please note that you should demonstrate a B1 level at least and approval will be subject to classroom availability.

You would like to do Sports on campus

Exchange students can also practice sports and get to benefit from the campus' great sport facilities. Registration is made upon arrival on campus.

There are 2 main options: either to do sports with regular full-time students (2 to 6 hours a week), or to do sports at École Polytechnique's sports center (called CSX) together with students and staff; the second option will require small fees.

We advise exchange students to do sports with regular full-time students of their chosen level of enrollment, as this is the best way to network with other students on campus.

You would like to join us for the fall semester or for the whole year

At graduate level, fall term offers a large choice of courses. Should you stay the whole year, you will have the possibility to undertake a research internship in one of École Polytechnique's laboratory.

For undergraduate students willing to undertake a research project or a Bachelor thesis, please note that this opportunity is open only for students registered in the 3rd year of the Bachelor program and for students staying the whole year.
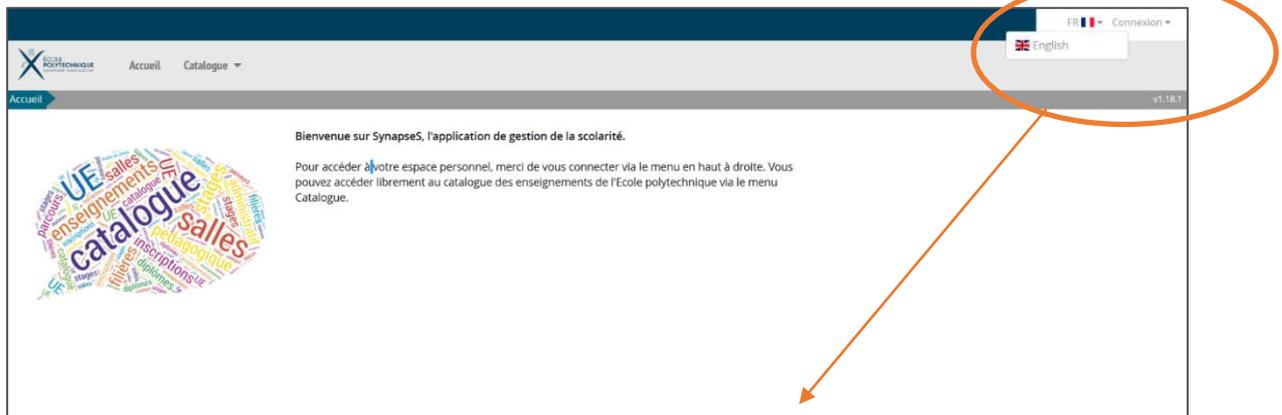
You would like to join us for the spring semester only

Please note that at graduate level courses are only available from January to March (in French or in English in the 3rd year of the *Ingénieur polytechnicien* Program) and from January to June (in French only in the 2nd year of the *Ingénieur polytechnicien* Program).
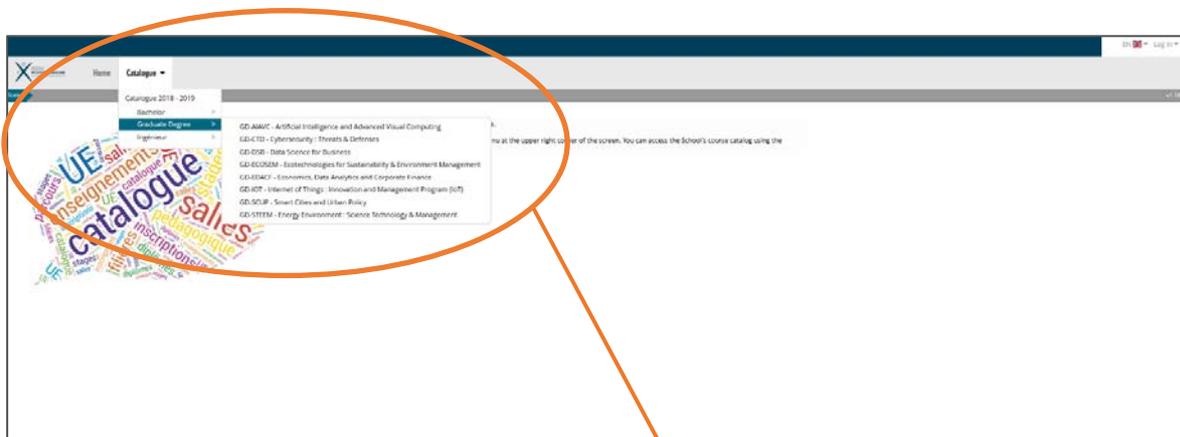
Registration for the research internship will not be open for students joining us for the spring semester. Should you want to undertake a research internship only, please apply for the Internship program for International Students (deadline end of January for internship in spring or summer).

At undergraduate level, exchange students can join us in spring semester only to follow courses in semesters 2 or 4. Please note that courses in the semester 6 start in Early April until end of June. Regstration for the Bachelor thesis is only available to students enrolling for the whole year (see above).

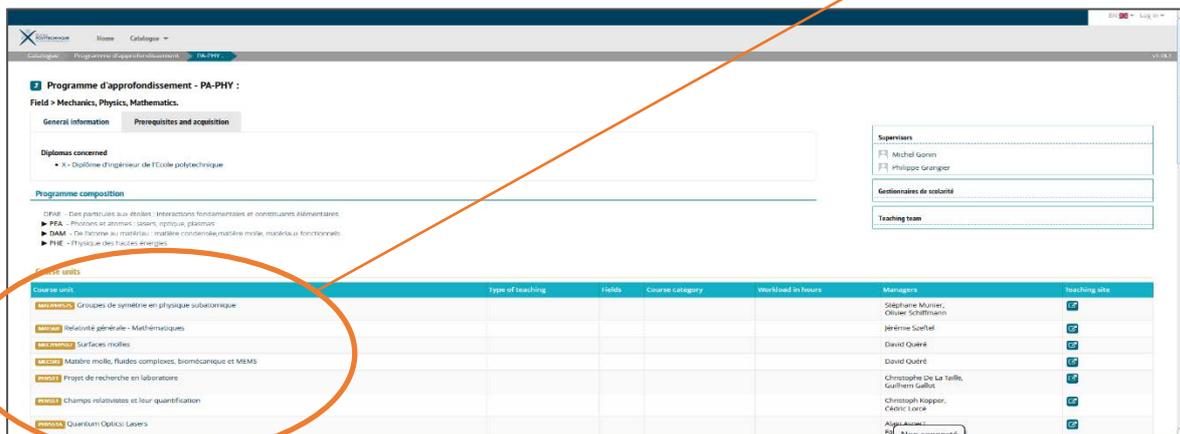# How to find a course [on Synapses (École Polytechnique's Courses catalog)](#)

In the top right corner, please select the flag (French or English).

Then select your chosen program of enrollment.

Please note that for Master of Science and Technology (formerly Graduate Degree) you can select your chosen master courses at this stage. For Bachelor Program, please select the program first and then your semester & Double Major. For *Ingénieur polytechnicien* Program, please select the program first, then your year of enrollment and, if Year 3, your chosen Scientific Concentration track (called Programme d'Approfondissement or PA).

For some Scientific Concentrations, you can choose **the specialization in the "Program composition" section and then have access to the courses related to this specialization.**

How do I know when the courses are taught?

- By looking to the courses' codes

Bachelor

For example, **CSE 301: Advanced Programming in C++** taught in Year 3

The 3 first letters indicate the field of study while the 3 last digits indicate the year for that course.

CSE	Computer Science
MAA	Mathematics
PHY	Physics
ECO	Economics

100	1st year (semester 1 and semester 2)
200	2nd year (semester 1 and semester 2)
300	3rd year (semester 1 and semester 2)

Ingénieur polytechnicien Program

For example, **INF 550: Advanced Algorithmics** taught in Year 3

The 3 first letters indicate the name code of the department that taught it while the 3 last digits indicate the year and the semester for that course.

BIO	Biology
CHI	Chemistry
ECO	Economics
EE	Electrical Engineering
ENR	Energies for the 21st Century
HSS	Humanities and Social Sciences
INF	Computer Science
IT	Technological Innovation
LAN	Languages and Culture
MAP	Applied Mathematics
MAT	Pure Mathematics
MIE	Innovation Management and Entrepreneurship
MEC	Mechanics
PHY	Physics
SDE	Science for Environmental Challenges

300	1st year
400	2nd year
500	3rd year

For courses taught at graduate level, courses codes starting with **550 and 570 are generally taught in term 1 (Fall term),** courses starting with **560 and 580 are generally taught in term 2 (Winter term)** and codes starting with **590 refers to the research internship (Spring term)**.

Further Resources

SynapseS
It's an online platform with free access to our course catalog.

Once registered at l'X you will receive an email with your login/password. Your timetable will be available there and you will have access to the courses materials and supports and to your grades.

MOOCs

To prepare your stay, you have the possibility to watch our online courses and videos here (some courses in English).

For students with a B1 level in French, please have a look to this language course "Étudier en France: French Intermediate course B1-B2".

Courses

Courses are broken down into lectures in amphitheater and lessons in small groups which number approximately 10-20 students per course.

Courses taught in English

At undergraduate and graduate level (MScT), all courses are taught in English.

At graduate level (*Ingénieur polytechnicien* Program), some courses in the 3rd year are taught in English: you can find them on SynapseS by looking for courses which titles are in English.

Adding/deleting a course

Once registered to a course, we will give you **a few days after your arrival** to finalize your choice.

Please note that you must first receive the approval of your home institution before adding or deleting a course.

Attendance to courses

Some courses have a limited number of participants. Due to classroom capacity, once a course is full we are unable to add more students and we do not use waiting list. If you enroll without going to the course, it means you are taking the place of another student.

Attendance in all scheduled courses is mandatory and any absences must therefore be justified and documented. According to each program's regulations, 3 unjustified absences in classes, labs, seminars, sports and language classes or tutorials will result in a maximum coursework grade of C.

Having missed a lesson?

Please contact your academic coordinator or registration office.

Should you anticipate some absences for personal or medical reasons, please give us a leave for absence as soon as possible.

Exam schedule

Detailed exam timetables will be released approximately one month before the exam. Exam timetables will be available on your student records page.