



# International Project Semester

A one Semester Exchange Project



# CY Cergy Paris University

Since the first of January, 2020, Cergy-Pontoise University and EISTI have merged under a new name: CY, Cergy Paris Université. It is composed of 24,000 students. ESSEC is associated with CY as a partner institution.

The academic course offerings are made up of an undergraduate university (CY SUP) and of five undergraduate and graduate schools, four within the university, with the fifth being ESSEC.

In addition to ESSEC, the other graduate schools led by CY university are:

- CY Tech, specialized in Computer Science, Applied Mathematics, Civil Engineering, Biotechnology & Chemistry, Economics and Management;
- CY Arts and Humanities, represented by the National Higher School of Arts Paris-Cergy (ENSAPC), the National Higher School of Architecture of Versailles (ENSAV), the National Higher School of Landscape Design (ENSP) and the National Heritage Institute (INP);
- CY Education, represented by INSPE, EPSS and ILEPS institutions;
- CY Law and Political Sciences, represented by Sciences Po St-Germain-en-Laye campus.

## CY Tech

Located in Greater Paris and in Pau, CY Tech is primarily an Engineering Graduate School.

It has earned the “Grande Ecole” status, the highest recognition stated by the French Ministry of Higher Education & Research. CY Tech is also a member of the “Conférence des Grandes Ecoles” (CGE), a French association that gathers elite higher education institutions, which meet strict criteria regarding the recruitment process, educational approach, international and corporate network. Accessible after the completion of a secondary education diploma or through a dedicated post-secondary preparatory class, it delivers a Master’s degree in these four fields: Applied Mathematics, Computer Science, Civil Engineering, Biotechnology & Chemistry.

Two university departments have been incorporated into CY Tech: the Institute of Sciences & Techniques (IST) and the Institute of Economics & Management (IEG), which broadens our overall course delivery in these specific areas. CY Tech course offer is structured in the following manner:

- A five-year Grande Ecole Engineering program;
- Post-secondary preparatory classes leading to Grande Ecole program enrollment;
- Undergraduate & Graduate Programs;
- Continuous training programs: Specialized Postgraduate Master’s;
- International Master’s with campuses located out of France;
- PHD programs.



# Our mission, our values

The mission of CY Tech is to meet the rising expectations of both students and industry. Through innovative programs and faculty exchanges, we seek to provide our students with an ever-increasingly attractive educational experience. Students can choose undergraduate and graduate programs in both Engineering and Management disciplines. Students also acquire valuable knowledge and global managerial skills through internships and study abroad experiences with universities worldwide. Since CY Tech's inception, the institution has gradually adapted itself to the evolving economy that offers an extensive and diversified curriculum that meets a contemporary vision of today's world.

Its objectives are:

- challenge-driven to prepare students and staff as global citizens and lifelong learners who care and act for the future of the planet and humanity;
- committed to the principles of openness and inclusion, by building open resources and collaborative platforms, endorsing open science agendas, and sponsoring the access, mobility and inclusivity mechanisms that liberate our intellectual and social potential.



## CY Tech international involvement

CY Tech's international involvement is indisputable and includes work experience abroad, academic exchanges as well as dual degree options. Our institution recently renewed an Erasmus Charter for Higher Education. This recognition demonstrates our expertise in mobility of students & staff and in strong cooperation for innovation and good practices under the Erasmus + policy. CY University is a member of Campus France, the official agency for the promotion of French Higher Education worldwide. CY Tech has also aligned with different European and international organizations and associations (EUTOPIA, EAIE, NAFSA, n+i Network, AIEA, ...) which aim to promote progress of international education. CY owns a Language Centre and is also an ETS TOEIC Authorized Test Centre.

Our university was recently awarded the "Bienvenue en France" label, which distinguishes French Higher Education institutions that have developed reception facilities dedicated to international students. CY is establishing solid links with Chinese universities which will contribute to the creation of a Franco-Chinese Institute to further internationalize its educational opportunities. One of the most remarkable achievements at European level is the recent development of an alliance of six like-minded universities, located in Belgium, Slovenia, Spain, Sweden, the United Kingdom and France, entitled EUTOPIA. The mission of EUTOPIA is to build in the long term a unique and daring alliance of transformative and engaged institutions. The alliance has developed strong ties within the regional communities, the institutional structures and the local companies. EUTOPIA students, researchers and staff work together to build a new academic model, reflecting an open and a united Europe, respectful of the citizens and the environment.

CY Tech diplomas require an official language certification in English as a Foreign Language as part of its national diploma recognition criteria. CY Tech will have signed 250 university partnerships worldwide within the two coming years, including more than 20 international dual degree options. A substantial number of cooperation programs allow the institution to enhance incoming mobility through its undergraduate, graduate and post-graduate English-taught course delivery. In keeping with CY Tech's global vision, our institution plans to open a campus in Singapore within the near future.

*Design  
your  
life*  
Inventez votre vie

*Impacting  
tomorrow  
today*

# What makes CY Tech different?

**One ambitious vision.** CY, defined as a university of diversity, society-oriented and of international standing, seeks to educate new generations in the complex challenges of a globalized society in tune with the sustainable development objectives, academic excellence and quality student experience.

**A high-profile ranking status.** National and international rankings, recognized by many specialized media and websites, show once again that CY course offerings are considered as one of the best in the fields of Engineering, Management, Mathematics & Finance, internationalization and professional integration.

**Cutting-edge Research & Technology Transfer activities.** Research and technology transfer are at the heart of the dynamics of CY Tech, whose missions contribute to the appropriation of scientific knowledge. CY Tech asserts its vision and pursues an active policy in technology transfer innovation of its research activities, conducted by recognized full-time researchers within its fourteen laboratories and five Open Labs in modeling and experimental sciences.

## **A wide range of facilities offered at the Campus:**

- Four libraries with over 2 million publications;
- Four university residences and private housing facilities;
- Student sports facilities with over 30 individual & team activities;
- Four student restaurants, four cafeterias;
- 47 student associations;
- A full package of cultural activities including a “cultural Pass voucher”, a special pass which offers discounts to theaters & cinemas bookings and to other cultural events in Greater Paris.

## **A “Bienvenue en France” label.**

This national recognition, awarded by our university, enhances our expertise dedicated to international students, mainly in the following areas:

- Quality and accessibility of information & reception facilities;
- Tutorial support services;
- Housing facilities and campus life development;
- Post-graduate career development and alumni services.

## Location: Greater Paris

The Paris Region has much to offer to international students, such as history, art, culture on top of its academic & scientific excellence. It is a unique place to learn, discover, study, engage and exchange, a place where dialogue, fraternity, freedom and creativity will always prevail. Paris has been listed in the QS best student cities ranking for many years. At only 25 minutes from the world famous Les Champs Élysées, or La Défense (one of the major futuristic skyscraper packed, business districts in Europe) stands the city of Cergy-Pontoise. The historic heart of the area of Cergy-Pontoise thrives on a prestigious past which has often found itself at the crossroads of the history of France itself, as when the Royal Court resided there. Its fame was extended through the long residency of Camille PISSARRO, who painted the varied landscapes of the town and its nearby countryside in numerous works, which are now to be found in the greatest museums in the world. Blessed with rich heritage, Cergy-Pontoise became on March 30th, 2006, a member of the national network of towns and lands of Art and History. This label, delivered by the Ministry of Culture and Communication, embodies a policy aiming to promote heritage and architecture. Today, Cergy is known as a vibrant student hub.



# Course program and objectives

## **Program information: a 1 Semester Project**

The 30 ECTS program our international students will attend is accredited by “La Conférence des Grandes Ecoles”, which is a French association that is composed of elite higher education institutions.

This accrediting body allows students to spend one academic semester at CY Tech.

This English-taught program includes the following criteria:

- 5 teaching modules;
- 134 classroom hours;
- 1 Technical Project in one of the following 4 fields: Mathematics, Computer Science, Civil Engineering or Bio technology & Chemistry;
- 180 hours of personal work dedicated to the technical project.

## **The objective of CY Tech International Semester Program is twofold:**

1. It provides students with an exceptional opportunity to combine advanced academic learning in engineering;
2. It enhances new communication skills and a memorable French cultural experience.

Further, “Course Unit 1” classes will end with a final exam. The Study Project requires initiatives and commitment from the part of the students in addition to an opening to the outside world. At the end of this class, the student-engineer will be able:

### **1. To mobilize the various components and tools of a specific scientific field:**

- The student-engineer will apply the studied methods and tools of the assignment in order to undertake his/her study project;
- The student-engineer will acquire complementary skills, which are different from those linked to his/her specialty, according to his/her personal and professional project.

### **2. To understand and consider the stakes/challenges of a company-oriented project in an international context:**

- The student-engineer will propose innovative solutions and approaches based on the use of information and experience gained from their bibliographic study and the completion of the project;
- The student-engineer will discover the requirements, working methods and organization of a company;
- The student-engineer will investigate and launch innovative ideas;
- The student-engineer will plan and organize a project with the help of project management tools and collaborative sharing tools.

### **3. To develop human and relational intercultural qualities:**

- The student-engineer will explain in written form and orally the work carried-out and the results obtained, using different media including remote management tools;
- The student-engineer will work on a team, cooperate with others in order to undertake and achieve common tasks;
- The student-engineer will adapt quickly to his/her professional environment;
- The student-engineer will implement organizational methods and present the results obtained in compliance with ethical rules;
- The student-engineer will demonstrate a commitment and autonomy in order to obtain concrete results within the framework of projects, and take responsibility for the course of the projects.

Final evaluations for “Course Unit 2”, (ie.the Study Project), will consist of the following:

Students will be held responsible for a written report and an oral presentation which will take place in front of a jury made up of academic faculty members.

## 1 semester course offered

ECTS

either semester 1 or semester 2

### Course Unit I : French Identity & Language and Cross-Cultural Communication

15

1. French as a Foreign Language
2. Communication Skills
3. Corporate & Institutional Communication
4. Cross-cultural Communication Management
5. French Identity

3  
3  
3  
3  
3

### Course Unit II : Study Project

15

Project

15

### Total ECTS (one semester)

30

## Some examples of scientific-oriented projects per field of study:

### Applied Mathematics

- Text analysis to identify similar patents: Development of a measure of proximity in ideas using unsupervised machine learning. The idea is to explore knowledge relationships in patents by: first, deriving vector space representations of patent description text using Document Vectors (Doc2Vec); second, using cosine similarity (and other similar techniques) to measure their proximity in ideas space

### Computer Engineering

- Text analysis to identify similar patents: Development of a measure of proximity in ideas using unsupervised machine learning. The idea is to explore knowledge relationships in patents by: first, deriving vector space representations of patent description text using Document Vectors (Doc2Vec); second, using cosine similarity (and other similar techniques) to measure their proximity in ideas space
- Multi-agent simulation of the cybersecurity of communicating vehicles (VANETs): Simulation of Cyber attacks and Counter measures in a VANET system
- E-Health: AI and predictive analysis of cardiovascular diseases
- Identity management based on Blockchain
- Cybersecurity: Finger-vein Biometric identification
- Smart Engineering School & IoT: implementation of indoor geolocation based on Footprinting algorithms, Beacon and NFC technologies

### Biotechnology & Chemistry

- Development of a hepatic lectin affinity test for the development of a liver-targeted therapy
- Electrochemical assisted surface functionalization for electrocatalysis application
- Redox Polymers for Organic batteries
- Study of the functionalization of surfaces for the detection of glyphosate by anchoring transition of liquid crystals
- Poly(HIPE) decorated with metallic nanostructure for sensing and energy driven applications
- Manicure 2.0: design and conception of an electrochromic nail
- Bifunctional organocatalysis: the best of both worlds
- Development of biomimetic / physiological techniques to study the proadhesive and antibacterial properties of some surface coatings
- Sebbin Industrial Project (optimization of silicone prostheses)
- Tourvielle Industrial Project (extracting interesting natural products from oyster shells)
- Biofunctionalization of chitosan by grafting matrix proteins / peptides
- Setting up a genome editing platform of bacteriophages to optimize their antibiofilm properties

### Civil Engineering

- Modeling, size calculation of a 3-floor and 40-apartment building in Bagneux
- Preparing and modeling a construction site for 32 apartments in Roissy
- Size calculation of a crossing structure
- Calculation of the basic components of metal buildings
- Multidirectional reinforcement of cement materials with 3D printing
- Lowering the impact of construction building on people's health: choices of materials and selection criteria
- Characterization, size calculation and construction of a building in reinforced concrete (1:10 scale)
- Modeling, size calculation of a residential building in Roissy
- Preparing and modeling a construction site for 40 apartments in Bagneux
- BIM model - an 8-floor tower with basement
- Transforming a B road into a dual carriageway
- Identifying and deciding on actions to be carried out on buildings structures
- Size calculation of a crossing structure
- Study of the basic components of a building in reinforced concrete
- Study of the assembly of metal components

# COURSE SEMESTER OUTLINE

## Course Unit I: French Identity & Language and Cross-Cultural Communication

### 1. French as a Foreign Language

This course will enable students to start or improve their language skills in French. It is specifically designed to help them acquire language abilities and essential communicative skills according to their level. In class, emphasis is placed on oral practice and interactive learning activities in a real-life approach to the language. It will include simple routine tasks, common polite phrases and exchange of information in order to encourage students to develop their communication skills in daily life situations.

### 2. Communication Skills

At the end of the course, students will be able to express themselves with ease in different types of intervention, know how to manage delicate situations, adapt their communication to the profile of the person they are talking to and develop assertive behavior in interpersonal relations.

### 3. Corporate and Institutional Communications

This course will focus on the study and practice of the techniques of achieving clarity, brevity and effectiveness in corporate and institutional communication. We will discuss communication planning, preparation and execution for internal and external industry audiences. Topics will include small group development, intercultural communication, change communication, communication strategies and risk/crisis communication:

- Provide a theoretical perspective of issues related to corporate and institutional communications;
- Understand how communication styles can vary across organizations, cultures and individuals;
- Understand common communication challenges related to team dynamics and interactions within small groups;
- Develop strong written and verbal skills for communicating with internal and external audiences;
- Learn strategic communications for the purposes of persuasion and crisis/risk management.

### 4. Cross Cultural Communication & Management

With trade becoming global, being comfortable in an intercultural context is mandatory for students, companies and their managers. Being aware of each country's specificities, frames of mind, culture and history, and understanding how to deal with all these aspects, become critical for smooth and fruitful intercultural communication and management.

This is the goal of this course, which provides the keys to decode foreign cultures and their logic, to anticipate and manage the diversity of behaviors, ways of thinking and acting and working. Through multiple case studies, we will see how to build trust and efficiency in different cultures, how to lead and motivate foreign or multicultural teams, how to avoid the traps of international partnerships.

### 5. French Identity

What kind of 'togetherness' characterize -or divide- the French?

What plays a role in their modern self-image?

How do they relate to their own history and culture and what is their perception of the rest of Europe, the rest of the world?

The course will introduce and discuss basic notions and often-controversial fallouts of "French National Identity" and intends to contextualize them in relation to the highly interacting international environment.

## Course Unit II : Study Project

CY Tech international students will be assigned a scientific-oriented project in one of these 4 fields depending of their studies:

- Mathematics;
- Computer Science;
- Civil Engineering;
- Biotechnology & Chemistry.

The project will be supervised by a University Tutor and will lead the international student to be confronted to professional work situations.



# Admission requirements

This International Project Semester is open to students of our partner Universities and does not present any additional registration costs in addition to the ones of the home University. Moreover, as part of this study mobility, you may be eligible for an Erasmus+ grant if you come from one of the 27 European Union countries, Iceland, Liechtenstein, Norway, Turkey, North Macedonia or Serbia.

Interested candidates in the International Project Semester Exchange Program must be registered in a Master's program and have at least 3 years of Higher Education duly completed (180 ECTS).

## Application procedures

Candidates must submit their CV to the following email: [cytech.international@cyu.fr](mailto:cytech.international@cyu.fr), as early as possible, and at the latest on June 15th (Fall semester) or December 15th (Spring Semester).

Shortlisted candidates will be contacted after sending applications. You can also visit our website for requirements, deadlines and a checklist of materials.

## Documents required for the application

- 1 CY Tech application form;
- Official copies of university transcripts and degrees;
- Copy of identity card/passport;
- A one-page CV;
- Your letter of interest (max. 2 pages). Your letter will help us to know about you, your interests, your values, your goals and your technical skills. You will explain what encourages you to study at CY Tech and carrying out a Study Project.
- A proof of English proficiency level CEFR (Common European Framework of Reference for Languages): B2, preferably proven via an official external exam test score:

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TOEIC: 800

IBT TOEFL: 80

IELTS: 6.0

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or a letter from one of your professors specifying your current level in English language. Some applicants might be exempt from providing us with a Proof of English language level if their mother tongue is English or if they have studied a fully-taught English program.

- One letter of recommendation from one of your University Tutors who is able to assess your technical skills.





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