CY TECH

Bachelor
International Bachelor Data Science By Design

Become an expert in Data Science for better life experiences

CY école de design
POUR LE VIVANT

Enhancing our Digital Life

Data is the digital gold of the 21st century!
Our digital lives produce data; our digital lives depend on data.
Their collection, storage, sharing, structuring, analysis, exploitation and representation are the conditions for a better life, a better society, and a better planet.
The task is a difficult one, because it is necessary to master both highly specialized mathematical and computer skills, while at the same time calling on the knowledge, methods, and tools of design in order to put data at the service of each and every one of us.
It is the ambition of the International Bachelor's degree «Data Science by Design» to provide you with this double mastery.

From Data to Meaning

Data is everywhere!
Data Science applies to many fields such as social networks, health, education, mobility, smart cities, urban planning, manufacturing, food & agriculture, finance or physics.
Problems and opportunities are everywhere, and they need to be both identified and resolved.

Data is complex!
To become a Data Scientist and to be able to unleash the power of data implies being deeply invested in important fields such as Artificial Intelligence, Machine Learning, Deep Learning, Statistics, and Programming. Data Scientists must also be keeping up with the latest in the field of Computer Science, keeping abreast with advances in newer fields.

From Meaning to Experience

Data is useless if it is not used for the benefit of our lives, in either optimal or difficult situations, in a hospital or at school, in a concert or at work, in our intelligent cars or public spaces.

This is where we need to apply Design Methodology to identify problems, observe the situations, imagine all the potential solutions, shape and deliver them.

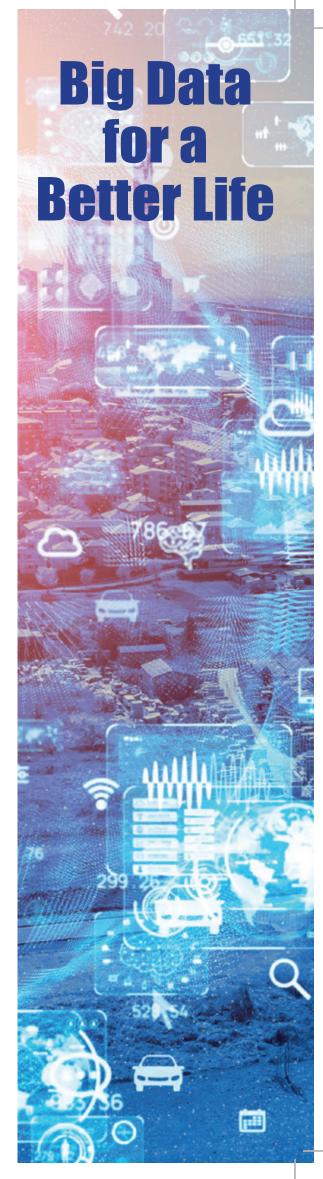**This is what makes our program unique: the mix between Sciences and Design.**
Design applies to strategies, organizations, systems, services, interfaces and objects.Being human centered, design thinking contributes to create successful life experiences.

A Project Driven Pedagogy

In our Bachelor's program, you are always learning by doing, and projects play a central role. They motivate and give meaning to fundamental scientific learning and create the condition for strong and creative participation. The connection between the abstract and the real world is the condition for growing both as a professional and a human being.

An International Experience

The world is the playground of the data scientists, because data knows no borders. To prepare you for this international reality, you will complete your first two years in France.Then, you will spend one semester of your third year studying abroad in either a European or a non-European partner university. This will, without any doubt, enhance your intercultural and linguistic skills.

Big Data for a Better Life

Mixing Science With Design

Why a Bachelor in Data Science by Design?

Every day, we generate and manipulate data, and our understanding of the world becomes all the more precise, thanks to Data Science.

A Data Scientist works on the exploitation of this data in order to answer problems in fields as varied as medicine, agriculture, social networks or security.

He/she must collect this data, clean it and analyse it. They must structure, manipulate, interpret and stage it to produce the best possible decisions and services for the problem at hand.

To do this, we train you to master many disciplines: mathematics, computer science, statistics, databases and data management, programming, Artificial Intelligence, machine learning and deep learning.

But structuring, analysing and making data talk is not enough if it is not put at the service of society in a world in transition. How can we put this scientific and technical knowledge at the service of successful life experiences for each and every one of us? Our Bachelor's degree is unique in that it gives you the skills to do this through Design.

Knowledge of general culture, social sciences, data ethics, economics, as well as high level critical thinking and problem solving skills are required to face the complexity of our changing world.

Towards an Engineering Degree by CY Tech

The four-year Bachelor's degree offers a complete training specialized in Data Science through its syllabus, projects and internships.

At the end of the Bachelor's degree, after a selection process, you will be able to pursue a fifth year and obtain a "Grande Ecole" Engineering degree in the following fields: cloud computing, artificial intelligence, cybersecurity, business intelligence.

How to apply?

Applicants are required to send their application documents on the following link :
https://ddc.oscar-campus.com/eisti/dc/record/bachelor-ygrec-0/register

They can also forward the same documents to:
cytech.international@cyu.fr

Transfer students:
Applications open at Year 2 or Year 3 level: one or two year(s) of studies at Higher Education level duly completed in the field of Data Science or Computer Science with good grades in Mathematics and Computer Science.

YEARS 1 & 2
Basics
Mathematics and Computer & Data Science

YEARS 3 & 4
Specialization
Computer & Data Science and Design Thinking

YEAR 5
Continuation of Studies
Possibility of obtaining a «Grande Ecole» Engineering degree at CY Tech

44 WEEKS
OF INTERNSHIP IN 4 YEARS

STRONG PROFESSIONALIZATION
Partnerships with companies, tutored projects, lectures/conferences given by professionals...

100% INTERNATIONAL
Mandatory semesters abroad, all classes in English...

80% SUCCESS RATE

DUAL SKILLS
Data Science and Design

A Partnership Between 2 Major Institutions

This Bachelor's of Data Science by Design is offered by two schools of CY Cergy Paris University. It will allow you to obtain a high level of expertise in Data Science thanks to the academic excellence of CY Tech, the Engineering school recognized in France and internationally. Through this program, you will gain a specific expertise in design thanks to the support of CY School of Design.

CY Tech: A Leading Engineering School

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.

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.

CY school of design: For the Living

From matter to decision, from product to experience, CY School of Design trains professionals who contribute to create the conditions for successful life experiences for everyone.

Design applies to strategies, organizations, systems, services, interfaces and objects. Human centered design application provides the critical thinking skills that contribute to the creation of successful life experiences.

To achieve this, it combines academic excellence with the demands of the professional world and through its two programs: the double degree of Engineer-Designer and the Bachelor of Data Scientist by Design.

This is what makes this Bachelor's Program unique: the mix between Sciences and Design.

Course outline

Academic year 1

Course title	ECTS	Sem.
Real Analysis 1	5	1
Basic Tools in Mathematics	5	1
Probability 1	3	1
Electricity	2	1
Algorithms and Programming 1	5	1
Microeconomics	3	1
Principles of Accounting	2	1
Project 1	2	1
Design Contemporary Issues Module 1	1	1
Enlightenment sessions		1
French as a Foreign Language	2	1
Real Analysis 2	5	2
Linear Algebra	5	2
Probability 2	3	2
Algorithms and Programming 2	5	2
Introduction to Modelling	2	2
Macroeconomics	3	2
Principles of Finance	2	2
Project 2	3	2
Design Contemporary Issues Module 2	1	2
Enlightenment sessions		2
French as a Foreign Language	2	2

Academic year 2

Course title	ECTS	Sem.
Multivariable Calculus	6	1
Bilinear Algebra	4	1
Applied Mathematics for Data Science	3	1
Object-oriented and Java Programming	5	1
Relational Databases, SQL Databases	5	1
Project 1	2	1
Design Contemporary Issues Module 1	1	1
Project Management	2	1
French as a Foreign Language	2	1
Enlightenment sessions		1
Series	5	2
Data Analysis	4	2
Statistics	3	2
Dynamic Web Programming	3	2
Computer Networks	3	2
Operating Systems	2	2
Advanced Modelling	5	2
Project 2	2	2
Design Contemporary Issues Module 2	1	2
Enlightenment sessions		2
French as a Foreign Language	2	2

Academic year 3

Course title	ECTS	Sem.
Mobile Programming	3	1
Intermediate Statistics	2	1
Introduction to Machine Learning and Artificial Intelligence	5	1
Data and Critical Thinking	3	1
Time Series Analysis	3	1
Social Network Analysis	2	1
Data Wrangling and Preprocessing	3	1
Text Mining and Natural Language Processing	2	1
Dimensionality Reduction and Clustering Algorithms	2	1
Project 1	2	1
Design Contemporary Issues Module 1	1	1
Enlightenment sessions		1
French as a Foreign Language	2	1
Parallel and Distributed Processing	5	2
Business Intelligence	3	2
Big Data Management	5	2
Advanced Data Vizualisation	5	2
Enlightenment Sessions		2
French as a Foreign Language	2	2
Internship 4 months	10	2

Academic year 4

Course title	ECTS	Sem.
Introduction to Dynamical System Modeling and Chaos: Theory and Applications	2	1
Constraint Programming and Optimization	5	1
NoSQL Databases	3	1
Complexity Decidability and Graph Theory	5	1
Cloud Computing and Machine Learning	5	1
Introduction to Scala	5	1
Project 1	2	1
Design Contemporary Issues Module 1	1	1
Enlightenment sessions		1
French as a Foreign Language	2	1
Academic Mobility	30	2
Internship 6 months	30	2

44 WEEKS +
OF INTERNSHIP

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Admissions

Do you have strong academic skills in Mathematics and Science?
Are you passionate about AI and Data?
Do you want to become an influential actor of the transition process our world is currently going through?
Do you want to take care of the changing world?
Our Bachelor's of Data Science by Design is made for you!

Application Requirements

To apply, you must have completed your secondary education and obtained a High School diploma highly specialized in Mathematics, Physics, Digital and Computer Science, Science of Engineering, or a secondary Education Diploma enabling access to a university, or a Swiss secondary education "maturité" certificate, or a European high school certificate, or equivalent.

We require an English proficiency level CEFR (Common European Framework of Reference for languages): B2 preferably proven via an official external exam test score: TOEIC 800, IELTS 6.0, IBT TOEFL 80.
French Proficiency: no prerequisite.
French as a foreign language: Instruction included in CY Tech program.

If these conditions are met, you must submit the application through our website: https://ddc.oscar-campus.com/eisti/dc/record/bachelor-ygrec-0/register
You can also forward the same documents to the following address: cytech.international@cyu.fr

Shortlisted candidates will be contacted 1 week after sending applications and will be accepted after a face-to-face, telephone or video conference interview with a member of CY Tech Admissions Board. The applicant may be asked to do a test in mathematics as well. Successful interviewees will receive an unconditional offer letter.

You can also visit our website for requirements, deadlines and a checklist of materials.

Documents required:

- The application form;
- Your CV;
- Copies of transcripts of records concerning the last two years of studies;
- English proficiency level (except for native students or students who can prove having followed an English-taught program);
- A letter of interest showing the applicant's strong interest in Data Science;
- Copy of passport or ID.

Career Objectives:

This course can be directly applied to work in a wide range of services and international-oriented departments in such positions as Security Manager, Data Analyst, Data scientist, Data Architect, Business Intelligence Developer. Data is the digital gold of the 21st century and Europe is currently lacking 300,000 jobs in the field of Data Science.

Cost:

The tuition fees are:
5,000€ per academic year for European students
7,500€ per academic year for non-European students

Complementary services provided such as:

- merit-based scholarships;
- visa counselling;
- accommodation support;
- opening of a French bank account;
- access to civil liability insurance & housing insurance;
- subscription to the French free Health insurance policy;
- reduced fees for bank services;
- administrative support for housing benefit from the French government via the CAF national accommodation organization;
- visa re-application counselling.

Testimonial:
Anh Thu, 2nd year student

«My name is Anh Thu, and I am from Vietnam.
Since high school, I always had great interest in Mathematics.
The idea of being an entrepreneur in the future and the desire of taking some applied mathematics courses drove me to look for a quality Bachelor's program for my studies, as well as for my future career development.
After doing some research, Data science appeared the most suitable choice for me.

The program offered by CY Tech suited my expectations: business knowledge, applied mathematics, some relevant computer courses, and design, are all incorporated in this program. I enrolled in the Bachelor's Program in September 2019, and I must say, I am very satisfied with the program's content, delivered by a well-prepared faculty, and in a learning environment that is well equipped on campus.»
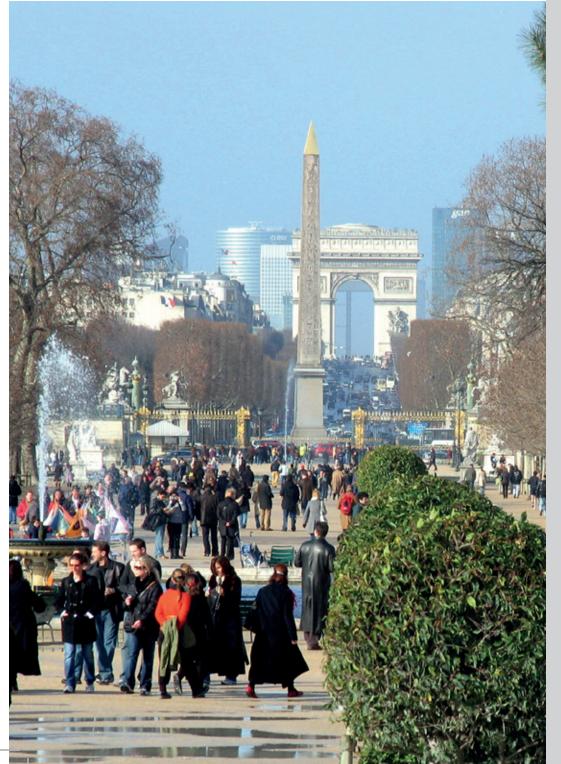
Studying in France

Location: a fantastic campus in Greater Paris

The Paris Region has much to offer to international students, such as its 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. Located only 25 minutes from the world famous Champs Elysées, stands the historic city of Saint-Germain-en-Laye. Saint-Germain-en-Laye has strong ties to French royalty. It is the birthplace of Louis XIV and is home to the former royal forests, as well as several castles and gardens.

CY School of Design, the second largest campus of CY Tech, is part of a new age for Saint-Germain-en-Laye. The campus is part of an ecosystem of high-tech start ups (AI, robotics, biotech, aerospace), as well as a Montessori school, all within a magnificent wooded and secure park.

A « Bienvenue en France » Label

Our university was recently awarded the "Bienvenue en France" label, which distinguishes French Higher Education institutions that have developed reception and integration facilities dedicated to international students.

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