

PROGRAMS FOR  
**INTERNATIONAL STUDENTS**



# MASTER'S DEGREE IN COMPUTER SCIENCE

**Choose CESI's Programs for International Students**

Become a student at CESI, lay the groundwork for your future career in engineering.



Cti



CONFERENCE DES  
GRANDES  
ÉCOLES

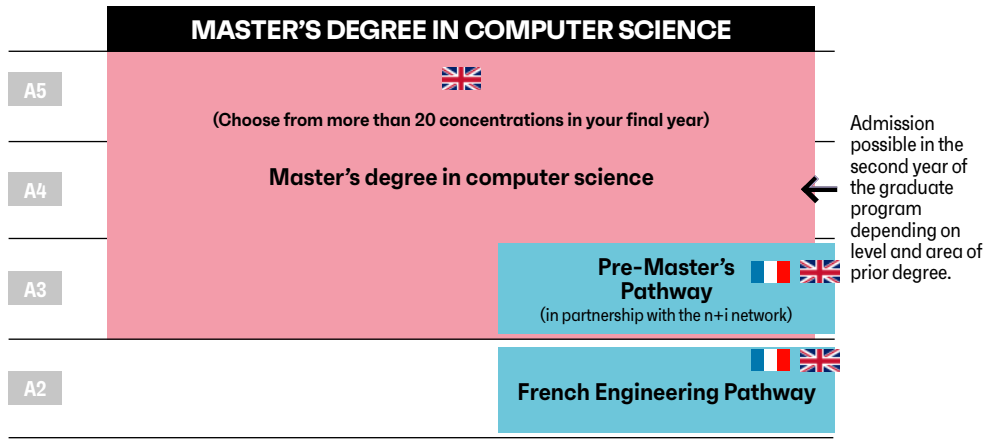
HESAM  
UNIVERSITÉ

Higher education technological institution

**CESI**  
ÉCOLE D'INGÉNIEURS

# STUDYING AT CESI

## BECOME AN ENGINEER AT CESI



### French applicants

- Students from CESI undergrad courses
- Students in 2nd year of a CPGE program in the STEM sciences
- Students in the final year of a scientific BUT, BTS+ATS, BSI or undergraduate degree
- Students having completed a DUT, BTS, 2-year undergraduate program in a scientific field as well as CESI supplementary coursework

### International applicants

Admission into the first year of the engineering graduate program after at least 2 years of higher education in science or technology or after a 3-year bachelor's degree in science, IT, or computer engineering.

### Pathway Programs

#### French Engineering Pathway

This one-year preparatory program focused on sharpening linguistic (French and/or English), mathematical, and scientific skills, prepares students for the three-year engineering cycle.

#### Pre-Master's Pathway

This one-year preparatory program, in partnership with the n+i network, is intended for international students holding a Bachelor's degree and wishing to complete the last two years of their Master's degree in an engineering school. This program offers a combination of intensive language (English or French, as required) and scientific courses.

GO FURTHER

## EXECUTIVE POST-GRADUATE PROGRAMS®

Our 12-month Executive Post-Graduate Programs®, available after a Master's degree in a relevant field, are rigorous programs with one guiding principle: close ties between theory and practice. You will be able to put this hands-on knowledge to use through work placements and a professional thesis. Certified by the Conférence des grandes écoles (CGE), Executive Master's programs are divided into four major areas of expertise: IT, Industry, Construction and Management.



# Become an accomplished computer science engineer at CESI

## **CESI'S PEDAGOGY**

Develop your skills with an innovative, problem-based pedagogy! Whatever field you choose to study at CESI, you will be immersed in projects based on real company problems in order to gain hands-on learning experience. This will help you gain the soft skills and technical expertise needed in today's working world. The objective? Develop the skills companies are looking for to guarantee that you are competitive on the job market and ready to adapt to industry's fast-paced changes.

## **OUR INSTITUTION**

CESI, a graduate school of engineering, currently has 26,000 students across its 25 campuses, a network of 8,000 businesses, 130 partner universities, and 95,000 alumni. CESI has set a standard of excellence in French higher education through the development of exceptional academic programs. We specialize in the fields of IT & Digital Technology, Industry, Construction & Public Works and Human Resources & Management, offering innovative programs that mirror the business world.

## **STUDENT LIFE**

Social events are organized throughout the year on CESI campuses. Lead or take part in activities in one of your campus' sports, cultural, or humanitarian clubs. Events highlighting the importance of interculturality are organized by students and faculty throughout the year.

## **SCHOLARSHIPS**

CESI scholarship of excellence rewards up to €2,000 to outstanding international candidates.



## **RESEARCH**

Research at CESI is led by the LINEACT research and innovation, which contributes to technological progress in areas relating to industry, construction and urban life. At LINEACT, research is focused on the inter-disciplinary scientific theme "Engineering and Digital Tools" with two fields of application: Industries and Cities of the Future. Our students are in constant contact with researchers: CESI teaching faculty includes 72 researchers, conducting computer science research on topics such as modelling, design and architecture of cyber-physical production systems, artificial intelligence, digital twins, applied robotics, and advanced automation.

# Join a world-class program

## Choose the Master's Degree in Computer Science

To prepare our Computer science students for the challenges of a globalised world, CESI offers a program taught fully in English that is open to French and international applicants. It using the same curriculum as the Computer Science Master's program in French, all projects, conferences, and courses are taught in English.

We also give students the opportunity to learn a second language in order to further help their international career prospects. In keeping with the spirit of this international section, all the compulsory internships for the engineering program take place abroad or in an international business environment.

Lastly, our students also have the possibility to partake in academic exchanges in one of our 130 partner programs worldwide. The engineer degree, approved by the Engineering Accreditation Committee (CTI), is the international equivalent of a Master in Computer Engineering. With our Computer science course leading to an engineer degree, you can:

- Acquire the scientific and technological skills needed to work in the world of Computer Science
- Ensure a successful and long-lasting career thanks to an internationally recognised engineering degree

The Master's in Computer Science program involves 3 integrated internships. Theoretical knowledge combined with work experience allows students to develop a relevant skillset for the world of tomorrow. PBL, a teaching method based on active pedagogy, teaches adaptability and leadership, while the international experience opens up wide-ranging career prospects.

In their final year, students choose two concentrations to further improve their employability and deepen their expertise in two specific areas of the computer science field.

- Gain experience in a national and international environment
- Secure a high-paying salary with career development opportunities.

In France, engineering degrees are issued by higher education institutions following review by the Engineering Accreditation Committee (Cti) and approval from the French Ministry of Higher Education.

## LEAD DIGITAL TRANSFORMATION PROJECTS INVOLVING DIGITAL TECHNOLOGY



COMPUTER SCIENCE

# 96%

OF OUR GRADUATES FIND WORK WITHIN 6 MONTHS, BOTH IN FRANCE AND INTERNATIONALLY

EXCELLENCE

EXPERIENCE

DEGREE

# Program

## Fundamental engineering sciences and mathematics

Utilise engineering mathematics  
Understand and implement advanced algorithmic concepts  
Use statistics and probabilities  
Use graph theory to solve problems  
Utilise operations research in the context of problem optimisation  
Conduct an analysis as part of a research project  
Identify and analyze complex problems  
Use mapping in an IT systems context

## Engineering science and methodology

Use modelling methods for IT projects  
Understand the concepts of big data  
Work with software engineering tools  
Understand how IoT works  
Manage and implement IT security  
Explore the principles of innovation  
Understand the principles of governance  
Have a Green IT mindset  
Regularly conduct technology intelligence  
Propose and deploy a design of experiments  
Manage projects

## Disciplines specific to the Computer Science field

Map and run an operating system  
Explore the principles of artificial intelligence and apply them to a concrete problem  
Process data in complex environments  
Program an operating system (synchronisation, resource management, etc.)  
Explore robotics and apply the main principles of automation  
Make use of cloud computing with best practices  
Software elective: specialization in front and back-end web development in a secure and complex environment  
Network elective: specialization in designing network architecture and handling telecommunications technology

## Human, economic, legal and social sciences

Explore team management  
Use basic economic and business management principles  
Be aware of international and European labor laws  
Improve English language skills

Work in an intercultural environment  
Study current ethics issues in the computer science field and learn how to implement corporate social responsibility  
Acquire the basics of entrepreneurship  
Establish and develop academic and professional goals

## Career planning

Develop a career plan, identify the necessary skills for the job, and prepare for your future career as an engineer as a part of the Individualized Professional Project

## For further specialisation

Choose two concentrations in your final year: Data Scientist & Big Data, 3D Augmented Reality/Virtual Reality, Cybersecurity, Robotics, Smart and Sustainable cities, Business Unit Manager, Innovation, Entrepreneurship, Prototyping, Quality-Safety-Environment & Sustainable Development. The list of concentrations available each year depends on the campus.



## MASTER'S DEGREE

Master's Degree in  
Computer Science



## CAREER

Project manager  
SW Developer  
Design engineer  
Network architect  
Consulting engineer



## CONTACT US

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## FIND OUT ABOUT US



[cesi.fr](http://cesi.fr)



The quality certification has been granted for the following categories of initiatives:

- TRAINING SESSIONS
- INITIATIVES ALLOWING THE VALIDATION OF ACQUIRED EXPERIENCES
- LEARNING-BASED TRAINING SESSIONS