



**ENSEA**

Beyond Engineering

# Ecole Nationale Supérieure de l'Electronique et de ses Applications

Graduate School in Electrical Engineering, Computer Science  
and Communication Networks

# General Presentation



# Status & accreditations



Public Graduate School created in 1952.  
CTI's Accreditation (National Accreditation of Official Engineering Degrees) & Eur-Ace accreditation

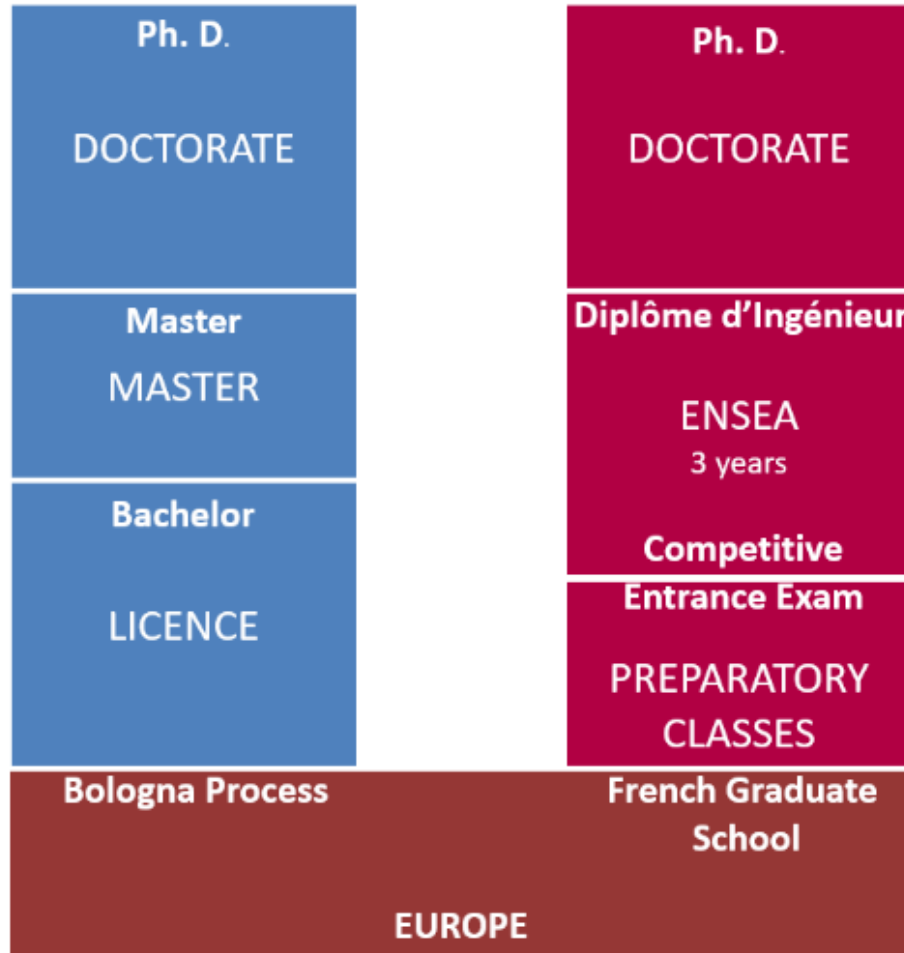


« Bienvenue en France » accreditation from Campus France (quality of the international relations services)



Part of the national consortium AMPERE composed of 7 major Engineering Schools in the IT field.

# ENSEA, a « Grande Ecole »



**ENSEA is** part of the French system of the « **Grandes Ecoles** » (Graduate Schools implying a selection process through a competitive entrance exam), the best students are selected throughout a national academic contest after spending two to three years in specific preparatory classes (CPGE) or at the University.

# Cergy

Located on the Campus of Cergy-Pontoise

One of the largest academic centers of the region

14 academic institutions (5 Engineering Schools, 1 Business School, 1 University...)



30km from Paris

Easy and direct access to Paris city center by train (RER A)

Direct bus line to Charles de Gaulle Airport

# A community



More than 8000 engineers trained at ENSEA (Alumni association)

900 students

90 permanent teachers, 180 trainers from affiliated companies

More than 30 student associations

90 PhD students and researchers

# Research



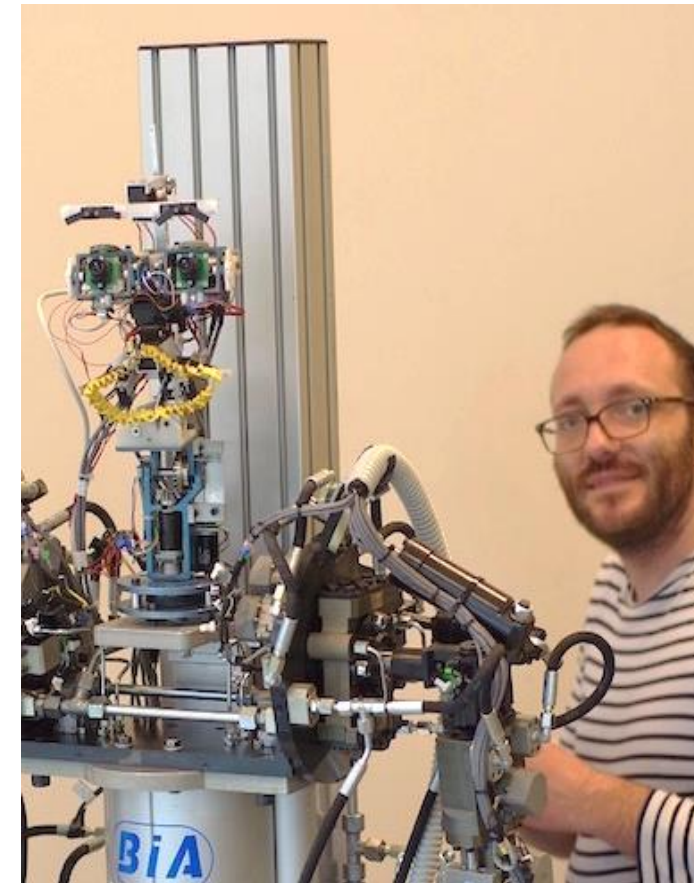
27 teaching laboratories,  
2 research centers, and many  
research groups :

## **ETIS**

Information, Communication,  
Imagery  
Multimedia Indexing and Data  
Integration  
Artificial Intelligence and  
Robotics  
Electronics, Reconfigurable  
Computing and Image  
Processing

## **QUARTZ**

Systems Conception, Analysis  
and Control  
Material/Structure Dynamics  
Mechatronics and Complex  
Systems  
Informatics, Mechanics,  
Mathematics  
Cyber Physical Systems (CPS),  
Internet of Things (IoT), Semantic  
web



# Industrial Partners

Every year, students from our second and third year join ENSEA's wide corporate network through curricular internships.

100% of our students sign a permanent contract within 6 months after graduating.

Some of our main partners:





# Academic training



# Curricular plan

Last year : Specialization (8 advanced study tracks)

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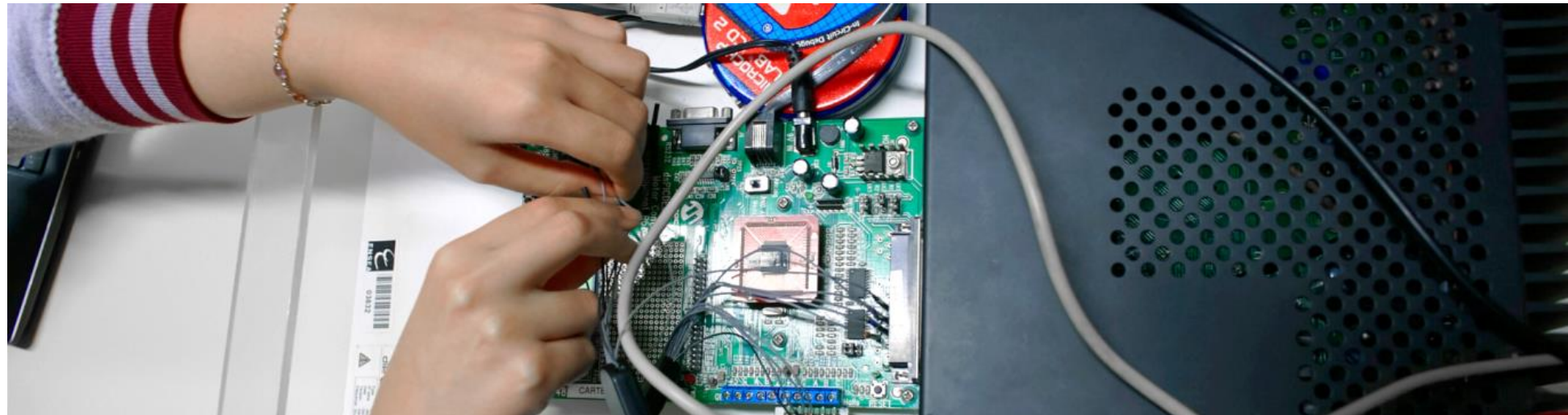
Final internship (6 months) + Master Thesis

Second Year Internship (Engineer Assistant) : 3 to 4 months

**Second year** : Fundamentals, Specialization track (3 advanced subjects, 1 elective) & Project

First Year Internship : 1 to 2 months

**First year** : Fundamentals (Electronics, Telecommunication, Computer Science) & Project



# Second Year / Master 1

First Semester		Second Semester	
Automation (major o minor)*	6/4 ECTS	Electronic Systems (maj./min.)*	6/4 ECTS
Signal Processing (maj./min.)	6/4 ECTS	Signal Processing (maj./min.)	6/4 ECTS
Electronic Systems (maj./min.)	6/4 ECTS	Management & Project	6 ECTS
Computer Science & Engineering (maj./min.)	6/4 ECTS	Languages : French & English	4 ECTS
Management & Project	6 ECTS	Engineer Assistant Internship: 3 to 4 months in a company or lab	4 ECTS
Languages : French & English	4 ECTS		
		<b>Elective Subject :</b>  Electrical Vehicles, Drones, Defense & Security, Multiphysics & Systems, Microelectronics, Electronics and signal for musical applications, Internet of Things, Security of Information Systems and data, Innovation and Entrepreneurship, Artificial Intelligence and Big Data, Image and Virtual Reality	6 ECTS
	30 ECTS		30 ECTS
*Each student chooses two « major » subjects (6 ECTS) and two « minor » ones (4 ECTS)		*Each student chooses one « major » subject (6 ECTS) and another « minor » one (4 ECTS)	

# Third Year / Master 2

First Semester : each student chooses one of the 8 specialization tracks

<u>Power Electronics and Control of Systems</u>		<u>Biomedical Engineering</u>		<u>RF Engineering</u>		<u>Embedded Systems</u>		<u>Computer Science and Systems</u>		<u>Mechatronics</u>		<u>Networks and Telecommunication</u>		<u>Signal processing &amp; AI</u>	
Energy	5	Biomedical Panorama	6	RF Communication Systems	6	Microcontrollers	5	Digital circuits	5	Mechatronic System Control	6	Digital Communication	5	Advanced Signal Processing	6
Automation & Diagnosis	5	Sensors	5	Electronics for High-Speed Communication	5	Sensors & Actuators	5	SoC	5	Mechatronics: Embedded Systems	6	Wireless Communication	4	Artificial Intelligence	3
Identification & Control	4	Acquisition	5	Acquisition Systems	5	Real-time Embedded Systems	5	Systems & Networks	5	Design and dimensioning of mechanical systems	4	Networks	5	Digital Image Processing	6
Actuators	5	Signals	5	RF Device Design	4	Embedded Systems Fundamentals	5	Algorithmics	5	Robotics	4	Security	5	Deep Learning and Hardware	5
Project	6	Image processing	5	Project	5	Advanced electronics	5	Software Engineering	5	Project	5	Project	5	Project	5
Management & Languages	5	Management & Languages	5	Management & Languages	5	Management & Languages	5	Management & Languages	5	Management & Languages	5	Management & Languages	5	Management & Languages	5



# Studying at ENSEA

# International Programs

International English-taught tracks	
<u>3° year ENSEA (first semester)</u>	
Network and Telecommunication option	Biomedical engineering option
Digital communication	Biomedical Panorama
Wireless Communication	Sensors
Networks	Acquisition
Security	Signals
Project	Image processing
Management & Languages	Management & Languages
<u>2° year ENSEA</u>	
First semester	Second semester
Signal processing (maj.)	Signal processing (maj.) OR Electronic engineering (maj.)
Computer Science (maj.)	Electronic engineering (min.) OR Signal processing (min.)
Automatics and control (min.)	Elective subject : Drones, IoT, AI & Big Data, Virtual Images & Reality, Human Centred Design
Electronic engineering (min.)	Business Management & Project
Business Management & Project	Languages
Languages	Assistant engineer internship

The English-taught international class offers the same academic training as part of the regular Engineering cycle curriculum but entirely taught in English.

Mobility students in Second and/or Third Year of ENSEA's general study plan can have access to the International track taught in English as well as some volunteering local students in order to create mixed groups.

The application for the international study track is made through the general application form.

Both Exchange students and Double-Degree mobility students can join the English-taught study path.

# For ESEIAAT's Students

Y1	ESEIAAT Bachelor Y1 – 60 ECTS							
Y2	ESEIAAT Bachelor Y2 – 60 ECTS							
Y3	ESEIAAT Bachelor Y3 – 60 ECTS							
Y4	ESEIAAT Bachelor Y4 – 60 ECTS							
Y5	ESEIAAT MUEI Y1 – 60 ECTS							
Y6	ENSEA Semester 7 – 30 ECTS  IN FRENCH  Two major subjects and two minor subjects to be chosen between ELECTRONICS AUTOMATION COMPUTER SCIENCE SIGNAL PROCESSING				ENSEA Semester 7 – 30 ECTS  IN ENGLISH  Majors: SIGNAL PROCESSING COMPUTER SCIENCE  Minors: ELECTRONICS AUTOMATION			
	Semester 8 – 30 ECTS							
	IN FRENCH OR ENGLISH  One major subject and one minor subject to be chosen between ELECTRONICS SIGNAL PROCESSING							
Y7	In French				In English	In English	In French	
	Semester 9 Control and Power Engineering – 30 ECTS	Semester 9 Electronics & RF Engineering – 30 ECTS	Semester 9 Embedded Systems – 30 ECTS	Semester 9 Mechatronics – 30 ECTS	Semester 9 Biomedical Engineering – 30 ECTS	Semester 9 Networks, Telecommu- nications & Security – 30 ECTS	Semester 9 Signal Processing & AI – 30 ECTS	Semester 9 Computer Engineering – 30 ECTS
	S10: Master Thesis (6 month internship) – 30 ECTS							

Our Erasmus agreement allows students from ESEIAAT to join any semester of our second and third year of training at Graduate level as long as a learning agreement is reached for credit transfer.

Our double degree agreement allows ESEIAAT students to follow a multiple training paths in order to obtain ENSEA's degree, "Titre d'Ingénieur", and thus be habilitated to work as French engineers in the fields of their choice.

# French Courses & Cultural Life



ENSEA offers weekly classes of “French for Foreigners” for mobility students and most of the teachers are fluent in English

All ENSEA students can speak English

Students joining the English-taught track don't have to present any certification of French mastery, however, keep in mind that a B1 level is often required for Visa if needed (non-EU students)

Cergy is surrounded by beautiful natural landscapes and the campus is based near a large natural park with aquatic sports equipment and leisure activities facilities.

The train station, in the very center of the campus allows easy access to Paris historic city center, Versailles, Saint-Germain-en-Laye and even Disneyland!





# Housing



A room in one of Cergy Campus public residences:  
280-350€/month

The international relations office books bedrooms for international students on demand.

A bedroom in private a shared apartment near the school :  
400€-600/month

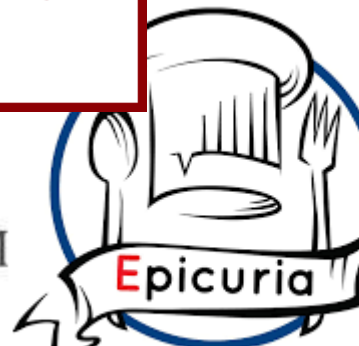
Cost of living in Cergy :  
around 600€-700€/month



# Student associations

More than 30 associations created and managed by the students :

Many different fields: music, culture, sports, robotics, videogames, cooking, debate club, entrepreneurs, humanitarian projects, events, dance, astronomy, foreign student integration...





Beyond Engineering

International Relations Office

[ri@ensea.fr](mailto:ri@ensea.fr)

+33.30.73.66.06

