

International students enrolled in the ECE Exchange Programs can select **English taught** courses from the following **Engineering Program Majors** :

- Data Science & AI Major
- Energy & Environment Major
- Embedded Systems Major
- Cybersecurity Major

Students can also select **French taught courses** from the following **Engineering Program majors**:

- Majeure CReATE (Conceptions, Realizations Applied to Emerging Technologies)
- Majeure Santé & Technologie
- Majeure Cloud Engineering & Management
- Majeure Véhicule Connecté & Autonome

Please note that **all taught courses are taught at the Master's level**. Please take into account that **courses from different programs cannot be mixed**. Allocation to program and courses will be done **based on student completion of prerequisites and availabilities**.

Starting and ending dates will vary according to the program. In our Engineering Program, the Spring semester of Fifth Year is reserved for internships, there are no courses scheduled at that period.

LANGUAGE OF INSTRUCTION	PROGRAM	COURSE DATES - M1	COURSE DATES - M2	EXAM PERIOD
EN	DATA SCIENCE & AI MAJOR			April
EN	ENERGY & ENVIRONMENT MAJOR			April
EN	EMBEDDED SYSTEM MAJOR			April
EN	CYBERSECURITY MAJOR			April
FR	MAJEURE CREATE	January 6th to April 11th	<i>No courses are scheduled during the Spring semester of the fifth year, as students will be engaged in internships.</i>	April
FR	MAJEURE SANTÉ & TECHNOLOGIE			April
FR	MAJEURE CLOUD ENGINEERING & MANAGEMENT			April
FR	MAJEURE VÉHICULE CONNECTÉ & AUTONOME			April

**OUR ENGINEERING PROGRAM & OUR YEARS OPEN TO EXCHANGE STUDENTS**
**ABOUT**
**> THE FIVE-YEAR ENGINEERING JOURNEY AT ECE**

The ECE engineering program follows the **French grande école structure over five years**, divided into two cycles:

- **The Preparatory Cycle (Years 1-2)** lays a strong foundation in science and technology through project-based learning.
- **The Engineering Cycle (Years 3-5)** focuses on advanced specializations.

For exchange students, **courses are available only in the Fourth and Fifth Years (Master's level)**, providing opportunities for high-level specialization and international collaboration.

**FIFTH YEAR - ENGINEERING CYCLE  
OPEN IN FALL TO EXCHANGE STUDENTS**
**M2**
**FOURTH YEAR - ENGINEERING CYCLE  
OPEN TO EXCHANGE STUDENTS**
**M1**
**THIRD YEAR - ENGINEERING CYCLE**
**B3**
**SECOND YEAR - PREPARATORY CYCLE**
**B2**
**FIRST YEAR - PREPARATORY CYCLE**
**B1**

## THE FREEDOM TO CHOOSE YOUR PATH

At ECE, each student **chooses freely their path according to their tastes, personal aptitudes and professional project.**

ECE is the school of 1001 possible paths – no path is identical, our students are all different. We give our students the building blocks to build the path of their dreams, the path that resembles them and that will best guide them towards their professional and personal ambitions.



### WHY SELECTING A MAJOR?

**In the second or third year of the engineering program (M1 & M2), students can select one technology major. Once admitted, they will follow a dedicated curriculum within this specialization, typically earning 17 ECTS credits.** This approach allows students to gain in-depth expertise in their chosen field while also fostering a well-rounded understanding of information technologies.

### LANGUAGES

**While the "Grande École" engineering programs in France are traditionally taught in French, we at ECE are committed to fostering an international perspective. For our international exchange students, this means an opportunity to immerse themselves in a multicultural environment while expanding their language skills.** French language classes are available to help you adapt and make the most of your experience in France. Additionally, our curriculum encourages all students to internationalize through the study of multiple languages and by incorporating mandatory academic or internship mobility, ensuring a global approach to their education.

### PROJECTS

#### MULTIDISCIPLINARY TEAM PROJECT (M1)

Whether you join ECE for a semester or a year, you will have the opportunity to participate in or initiate an innovative project centered around a multidisciplinary topic. Known as the PPE, this project presents a dual challenge: developing a genuine team-based initiative and ensuring its successful technical execution. Guided by experienced Coaches and Experts, teams are given 8 months to deliver a tangible solution to a scientific problem.

#### END OF STUDIES PROJECT (M2)

A bridge between the academic and professional worlds, the PFE is the capstone team project marking the end of the curriculum. Faced with challenges proposed by our Partners or Researchers, students have 7 weeks to solve a specific problem.

**DATA & AI MAJOR - M1****SECOND SEMESTER - ENGLISH** **>ABOUT THE PROGRAM**

The **Data & AI major** trains engineers who are capable of supporting companies in their digital transformation initiatives by setting up "Datalake" projects and analytical applications. These paradigm shifts bring a better understanding of governance issues and data quality.

**>PREREQUISITES**

Applicants' transcript of records must reflect knowledge in : **Programming (Python), Algorithms, Operating Systems, Databases, Machine Learning, Mathematics.**

[MORE INFO HERE](#)

COURSES	15 ECTS	HOURS
Advanced Machine Learning	3	28
Cloud Computing	3	28
Data Integration	3	20
Functional Programming	3	22
Information Systems Management	1	16
Mathematics for Data Scientist	1	16
NoSQL Databases	1	16

**EMBEDDED SYSTEMS MAJOR - M1****SECOND SEMESTER - ENGLISH****>ABOUT THE PROGRAM**

The courses in the **Embedded Systems, Aeronautics and Robotics major** contribute fully to boosting innovation in the fields of intelligent transportation, personal assistance, sustainable mobility, home hospitalization, and consumption control.

**>PREREQUISITES**

Applicants' transcript of records must reflect knowledge in : **Mathematics, Electronics (analog and digital), Signal processing, Embedded Linux, C programming language.**

[MORE INFO HERE](#)

COURSES	20 ECTS	HOURS
Linux Drivers	2	18
Real Time Programming	3	24
Digital Signal Processors	3	30
Sensors & Interface	3	15
Industrial Local Networks	3	24
Computer Networks	3	30
Technical Project	3	18

**CYBERSECURITY MAJOR - M1****SECOND SEMESTER - ENGLISH** **>ABOUT THE PROGRAM**

In the **Cybersecurity major**, students understand computer security and cybersecurity issues and learn to develop the technological knowledge needed to deal with cyber threats. How to build an Active Directory, an Azure Active Directory, how to develop an ISS security policy, etc. are all essential skills for a cybersecurity expert.

**>PREREQUISITES**

Applicants' transcript of records must reflect knowledge in : **Computer network, Operating systems (Windows and Linux), Programming (Python)**.

[MORE INFO HERE](#)

COURSES	23 ECTS	HOURS
Microsoft C#	4	18
Management of Information Systems	3	16
Machine Learning I	2	16
Machine Learning II	2	16
Database Security	2	12
Containers Security	1	12
Information Systems Security I	4	24
Computer Networks Security	4	28
Hackathon Cyber	1	10

# COURSE CATALOGUE - ENGINEERING PROGRAM - SPRING 26

## MAJEURE CReATE - M1

### SECOND SEMESTER - FRENCH

#### >ABOUT THE PROGRAM

The CReATE major shapes versatile engineers with expertise across every stage of digital product creation, development, and industrialization. Students develop advanced skills to master cutting-edge technologies and address the needs of global digital industries. The curriculum includes immersive bootcamps, stimulating hackathons, and hands-on projects that mirror real-world challenges, ensuring a dynamic and practical learning experience.



[MORE INFO HERE](#)

COURSES (ALL ARE MANDATORY + ELECTIVE OPTIONS AVAILABLE TO REACH 30 ECTS)	17 ECTS	HOURS
Bootcamp DESIGN : Design	0*	10
Bootcamp MAKE : Conception 3D (certification ACU)	3	20
Bootcamp MAKE : Réseaux radio et mobiles	1	12
Bootcamp MAKE : IOT	1	12
Bootcamp MAKE : Plateformes de prototypage	2	20
Bootcamp MANAGE: Sustainable engineering (Fresque du numérique)	0*	8
Hackathon 3 : CReATE an IOT product for good	2	2
Bootcamp MAKE Programmation mobile	1	18
Bootcamp MAKE : Plateforms As A Service (PAAS)	1	10
Bootcamp MAKE: No code application mobile	1	8
Bootcamp MAKE : Cloud Engineering (Certification AWS)	3	18
Bootcamp MANAGE : development of a digital product	0*	8
Hackaton 4 : CReATE an app from A to Z	2	2
Conférence Toolkit start-up	0	2

\*The credits of the following courses will be allocated in the Hackatons where knowledge from these courses will be required.

## MAJEURE SANTÉ ET TECHNOLOGIE - M1

FIRST SEMESTER - FRENCH



## &gt;ABOUT THE PROGRAM

La Majeure Santé & Technologie a pour objectif de présenter les applications de la formation d'ingénieur dans les métiers reliés de près ou de loin à la santé. Elle apporte des connaissances et un vocabulaire médical nécessaires à la communication entre l'ingénieur, le patient et les professionnels de santé, et permet de constituer un réseau de contacts dans ce secteur d'activité.

[MORE INFO HERE](#)

COURSES	15 ECTS	HOURS
Automatique / Automatic	1	13
Bio-Mécanique et prothèses / Biomechanics and prothesis	1	22
Robotique médicale / Medical Robotics	1	17
Numérique et Génétique	1	10
IA et décision en santé	1	13
Smart Data et santé / Smart Data and health	1	14
Données Médicales / Medical Data	1	10
Projet Fil Rouge / Red Line Project	1	6
Intelligence Artificielle en Santé / IA apply to Healthcare	1	24
Imagerie par résonance magnétique / MRI	1	13
Imagerie ionisante / Ionizing radiation imaging	1	13
Imagerie par ultrasons / Ultrasound imaging	1	13
Imagerie par laser / Laser Imaging	1	10
Traitements numériques des images / Image Processing	2	12

**ELECTIVE COURSES - M1****SECOND SEMESTER**

Some program majors may not meet the **commonly required total of 30 ECTS**. However, students have the option to **select additional elective courses to fulfill this requirement**. The language of instruction for each course is indicated on the right.

COURSES	ECTS	HOURS	LANGUAGE
French as a Foreign Language	5	30	-
English as a Foreign Language	5	36	-
Multidisciplinary Team Project	4	84	FR