

EXCHANGE PROGRAM 2021-22 SPRING SEMESTER "S8"

I) CENTRALESUPELEC'S ENGINEERING CURRICULUM

CentraleSupélec is a French *Grande Ecole*. Our Engineering Curriculum spans over 3 years (6 semesters).
Each semester comprises 2 terms:

- an "Engineering Challenge" Term (in French *Séquence Thématique* or "ST");
- an Academic Term (in French *Séquence Générale* or "SG").

CentraleSupélec Engineering Curriculum in relation to the French/European system				Equivalent in the European higher education system	
Preparatory classes in France: "Prépa"	1st year	Semester 1	X	year 1	BSc
		Semester 2			
	2nd year	Semester 3		year 2	
		Semester 4			
CentraleSupélec Engineering Curriculum	1st year	Semester 5 - S5	SG 1	year 3	MSc
			ST 2		
		Semester 6 - S6	SG 3		
			ST 4		
	2nd year	Semester 7 - S7 FALL	ST 5	year 4	
			SG 6		
		Semester 8 - S8 SPRING	ST 7		
			SG 8		
	3rd year	Semester 9 - S9	SD9	year 5	
			SM 10		
Semester 10 - S10		SM11			
		Internship			

Most of the exchange students are welcomed in the second year of the Engineering program, either during the Fall Semester "S7" (September to January) or the Spring Semester "S8" (February to June), or both.

Below you will find more information on the organization of the Spring semester and the list of courses available during this period.

Detailed course descriptions can be found [in the catalog 2021-2022](#).

To know the language of instruction for each course, please refer to the course list below.

Please note that changes can still occur before your arrival.

II) SPRING SEMESTER ORGANIZATION

You are free to select any course from this program, taking into consideration several rules explained below. The full course load of the engineering program is usually 30 ECTS per semester. Depending on the requirements of your home institution, you may either take the full course load, additional courses, **or choose a minimum of 20 ECTS**. Please note that we have 3 campuses: Saclay, Rennes and Metz. **Be sure to choose a full set of courses in one campus only.**

This document is for information purposes. Course choices will be collected online via a link sent to all nominated candidates.

“Engineering Challenge” Term, or *Séquence Thématique* related to Optimization: ST 7

This term runs from February to late March, and comprises:

- **A course series including:**
 - An introductory module
 - A specific course
 - A short project, in French *Projet de Séquence* (**choice of short project will be made upon arrival**)
- A common course: **Optimization**

Students interested in the Engineering Challenge Term are invited to choose 1 of the 12 “ST” topics, as well as a back-up in case their top choice cannot be accommodated.

The Optimization course is not mandatory, but the concepts covered in this course are important to follow the ST. If you don't want to take it, make sure you have taken a similar course at your home university.

An Academic Term, or *Séquence Générale*: SG8

This term runs from April to mid-June, and comprises:

- **Up to 3 elective courses**

The courses are distributed in 3 series: 2.4, 2.5 and 2.6. All courses from a given series are scheduled in the same time slot. If you are interested in 1, 2 or 3 elective courses, **please select 1 “top” choice + 1 “back-up” per series.**

The semester also includes:

- An **S8 Project** (different from the short project mentioned above) that runs over the whole semester. Students will be offered a list of topics to choose from before the beginning of the semester.
- **Workshops:** Engineering Skills Workshops (“API”) and Professional Practice Skills Workshops (“APP”). **The “API” workshops are mandatory for students involved in a long project. The “APP” workshops are mandatory for all students.**
- An **intensive 1-week seminar** scheduled mid-June. If you are interested in this seminar, you may select:
 - One course related to a Humanities and Social Sciences topic (labelled **2IN2310, 2IN2320, 2IN2330, 2IN2340**). In this case, you will be requested to choose a specific module within the topic at a later stage**OR**
 - An additional elective course (related to: Physics, Management, Computer science, etc.).

Please also select a back-up choice, as your top choice may not be accommodated.

- A **Philosophy** course.
- **Language courses:** Students can choose up to 2 foreign language(s) from the list. **Priority is given to French and English.** If you are already fluent in the latter, you may skip the language courses, or choose another language. **This option is available only if you have already had at least two semesters of study of the chosen language just prior to your arrival at CentraleSupélec, as beginner-level groups are not available during the Spring.** You cannot choose a language of which you are a native speaker.
- **Sports:** CentraleSupélec offers a range of sports courses which international students are encouraged to join, but for which they do not receive ECTS. If you are interested, please visit the Sports Office when you arrive on campus.

III) SPRING SEMESTER COURSE LIST

You can use this table to build your study plan before answering the online survey.

F: French E: English

SEQUENCE THEMATIQUE "ST 7" / ENGINEERING CHALLENGE TERM							
Choice 1	Choice 2	FR Course Title	Eng Course title	Course code	ECTS	Campus	Language of instruction
<input type="checkbox"/>	<input type="checkbox"/>	Modélisation mathématique des marchés financiers et gestion des risques : Intro : module contexte et enjeu Modélisation des risques financiers Minimisation des risques sur les marchés financiers	Stochastic finance and risk modelling: Introductory module Stochastic finance and risk modelling Risk Management on financial markets	ST71 2SC7100 2SC7110 2SC7190	7 2,5 4,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Optimisation de l'infrastructure des réseaux pour les villes intelligentes : Intro : module contexte et enjeu Optimisation des infrastructures de réseau Smart cities : les cités connectées	Optimization of network infrastructure for smart cities: Introductory module Optimization of network infrastructures Smart cities : connected cities	ST72 2SC7200 2SC7210 2SC7290	7 2,5 4,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Economie circulaire et systèmes industriels : Intro : module contexte et enjeu Economie circulaire et méthodes de l'écologie industrielle Projet industriel d'économie circulaire	Circular Economy and Industrial Systems: Introductory module Circular economy and industrial ecology methods Circular economy industrial project	ST73 2SC7300 2SC7310 2SC7391	7 2,5 4,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Optimisation de systèmes de transports passagers : Intro : module contexte et enjeu Aide à la décision : Modèles, algorithmes et implémentation Optimisation des opérations d'une compagnie aérienne OU Planification d'une équipe mobile OU Optimisation de systèmes de transport à la demande	Optimization of Passenger Transport Systems: Introductory module Decision Support: Models, algorithms and implementation Optimizing the operations of an airline OR Mobile workforce planning OR Organization of on-demand transport systems	ST74 2SC7400 2SC7410 2SC7491 2SC7492 2SC7493	7 2,5 4,5 4,5 4,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Optimisation et gestion de flux de systèmes complexes : Intro : module contexte et enjeu Optimisation et gestion de flux Gestion des flux dans la livraison de gaz industriels	Optimization and Management of Flows: Introductory module Managing and optimizing industrial flows Flow management in industrial gas delivery	ST75 2SC7500 2SC7510 2SC7591	7 2,5 4,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Simulation à haute performance pour la réduction d'empreintes : Intro : module contexte et enjeu Méthodes et algorithmes de calcul parallèle, et méthodes d'optimisation Optimisation d'une campagne d'exploration sismique pour la protection des ouvrages OU Optimisation de formes et réduction de la traînée en aéronautique OU Optimisation de détection d'ondes infrasonores pour la vérification du traité d'interdiction complète d'essais nucléaires OU Optimisation énergétique et accélération d'un graphe de calculs financiers sur cloud OU	High Performance Simulation for Footprint Reduction: Introductory module Parallel computing methods and algorithms, and optimization methods Optimization of a seismic exploration campaign for infrastructure protection OR Shape optimization and drag reduction in aeronautics OR Optimization of infrasonic wave detection for verification of the Comprehensive Nuclear-Test-Ban-Treaty OR Energy optimization and acceleration of a cloud financial calculation graph OR	ST76 2SC7600 2SC7610 2SC7691 2SC7692 2SC7693 2SC7694	7 2,5 4,5 4,5 4,5 4,5	Paris-Saclay	E

		Optimisation à faible coût des performances d'un code de propagation d'ondes acoustiques	Low cost optimization of acoustic wave propagation code performance	2SC7695	4,5		
<input type="checkbox"/>	<input type="checkbox"/>	Efficacité des systèmes d'énergie embarqués : Intro : module contexte et enjeu Méthodes numériques et résolution des problèmes d'optimisation des systèmes d'énergie embarqués Efficacité énergétique OU Optimisation de chaîne de traction sur cycle routier OU Gestion optimale d'un générateur hybride OU Optimisation d'une chaîne de propulsion	Efficiency of on-board Energy Systems: Introductory module Numerical Methods and Problem Solving for Optimizing Embedded Energy Systems Energy Efficiency OR Optimization of the drive train on the road cycle OR Optimal management of a hybrid generator OR Optimization of a propulsion chain	ST77 2SC7700 2SC7710 2SC7791 2SC7792 2SC7793 2SC7794	7 2,5 4,5 4,5 4,5 4,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Conception en fabrication additive : Intro : module contexte et enjeu Couplages multiphysiques pour la fabrication additive Optimisation de pièces aéronautiques en fabrication additive métallique OU Optimisation de pièces pour le biomédical en fabrication additive polymère OU Optimisation de structures en génie civil en fabrication additive béton	Additive Manufacturing Design: Introductory module Multiphysics couplings for additive manufacturing Optimisation of aeronautical parts in metal additive manufacturing OR Optimisation of parts for biomedical applications in polymer additive manufacturing OR Optimisation of civil engineering structures in additive concrete manufacturing	ST81 2SC8100 2SC8110 2SC8191 2SC8192 2SC8193	7 2,5 4,5 4,5 4,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Transition énergétique en site isolé : Intro : module contexte et enjeu Energies renouvelables et Micro grids Micro grid insulaire décarbonné	Energy transition in Isolated Area: Introductory module Renewable energies and micro grids Insular carbon-free micro grid	ST78 2SC7800 2SC7810 2SC7890	7 2,5 4,5	Rennes	E
<input type="checkbox"/>	<input type="checkbox"/>	Le numérique au service du facteur humain : Intro : module contexte et enjeu Analyse d'image et son 2D-3D Ce que vous dites sans le vouloir : décryptage et analyse automatique des comportements non verbaux	Digital Technology at the service of the human factor: Introductory module 2D – 3D Image and sound analysis What you unwittingly say: decryption and automatic analysis of nonverbal behaviors	ST79 2SC7900 2SC7910 2SC7990	7 2,5 4,5	Rennes	E
<input type="checkbox"/>	<input type="checkbox"/>	Compilation - Infosec Projet Compilation - Infosec		2PC3000 2PC3090		Rennes	F
<input type="checkbox"/>	<input type="checkbox"/>	Séparation de sources pour une exploitation optimale des signaux : Intro : module contexte et enjeu Représentations parcimonieuses des signaux Suivi d'un locuteur par un robot OU Séparation de sources sonores à partir d'enregistrements de plusieurs microphones	Source Separation for optimal signal processing: Introductory module Sparse Representation of Signals Tracking a speaker by a robot OR Separation of sound sources from recordings of several microphones	ST80 2SC8000 2SC8010 2SC8092 2SC8093	7 2,5 4,5 4,5	Metz	F
<input type="checkbox"/>	<input type="checkbox"/>	Systèmes physiques neuro-inspirés pour le traitement d'information : Intro : module contexte et enjeu Optimisation pour l'apprentissage des systèmes physiques Classification de signaux vidéo et d'images à haute performance et faible coût énergétique par des systèmes photoniques	Physical neuro-inspiratory systems for information processing: Introductory module Optimization for neuro-inspired computing with physical architectures Classification of image and videos signals with power-efficient photonic systems	ST82 2SC8200 2SC8210 2SC8290	7 2,5 4,5	Metz	E

COURS DE TRONC COMMON / COMMON CORE COURSES							
Choice		Cours de Tronc Commun	Common core courses	Course code	ECTS	Campus	Language of instruction
<input type="checkbox"/> E	<input type="checkbox"/> F	Optimisation	Optimization	2CC3000	2,5	all	E or F in P-Saclay, F in Metz, E in Rennes

SEQUENCE GENERALE "SG8" / ACADEMIC TERM							
ELECTIVE SERIES 2.4							
Choice 1	Choice 2	FR Course title	Eng Course title	Course Code	ECTS	Campus	Language of instruction
<input type="checkbox"/>	<input type="checkbox"/>	Energies renouvelables	Renewable Energies	2EL1310	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Conversion d'énergie électrique pour les sources d'énergie renouvelables et l'électromobilité	Electrical Energy Conversion for renewable energy sources and electromobility	2EL1315	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Intelligence artificielle	Artificial Intelligence	2EL1580	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Calcul scientifique	Scientific Calculation	2EL1760	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Construire la ville - urbanisme, architecture et ingénierie	Building the city – town planning, architecture and engineering	2EL1860	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Lois fondamentales de l'univers: physique des particules et de la gravitation	Fundamental Laws of the Universe: Particle and Gravitation Physics	2EL1910	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Gestion des opérations et de la chaîne logistique	Supply Chain Operations Management	2EL2210	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Mobility Issues	Mobility Issues	2EL2240	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Traitement d'images numériques	Digital Image Processing	2EL2420	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Introduction au développement d'applications multi-tiers et aux services web	Introduction to multi-tier application development and web services	2EL5020	2,5	Metz	E
<input type="checkbox"/>	<input type="checkbox"/>	Systèmes photoniques intelligents	Smart Photonics Systems	2EL5120	2,5	Metz	E
<input type="checkbox"/>	<input type="checkbox"/>	Economie sociale et solidaire, transitions et modèles socio-économiques	Social and solidarity economy, transitions and socio-economic models	2EL5160	2,5	Metz	F
<input type="checkbox"/>	<input type="checkbox"/>	Programmation système sous Linux et Windows	System programming under Linux and Windows	2EL6040	2,5	Rennes	F
<input type="checkbox"/>	<input type="checkbox"/>	<i>Serious Game</i>	Serious Game	2EL6060	2,5	Rennes	E
<input type="checkbox"/>	<input type="checkbox"/>	Management de la production et des flux	Production and flow management	2EL6170	2,5	Rennes	F
ELECTIVE SERIES 2.5							
Choice 1	Choice 2	FR Course title	Eng Course title	Course Code	ECTS	Campus	Language of instruction
<input type="checkbox"/>	<input type="checkbox"/>	Systèmes Robotiques Interactifs	Interactive Robotic Systems	2EL1120	2,5	Paris- Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Transferts thermiques	Heat Transfer	2EL1410	2,5	Paris- Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Cloud computing et informatique distribuée	Cloud Computing and Decentralised Computing	2EL1590	2,5	Paris- Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Statistiques Avancées	Advanced Statistics	2EL1750	2,5	Paris- Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Biomécanique et matériaux du vivant	Biomechanics and Life Materials	2EL1820	2,5	Paris- Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Physique de la matière divisée	Physics of Divided Matter	2EL2020	2,5	Paris- Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Ingénierie des procédés au service du développement durable	Chemical Engineering: application to environment and sustainable production	2EL2040	2,5	Paris- Saclay	E

<input type="checkbox"/>	<input type="checkbox"/>	Economie de l'environnement, énergie et développement durable	Economics of the environment, energy and sustainable development	2EL2160	2,5	Paris- Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Maintenance et Industrie 4.0	Maintenance and Industry 4.0	2EL2230	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Du transistor au système analogique complexe	From Transistor to Complex Analog Device	2EL2520	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Programmer efficacement en C++	Programming efficiently in C++	2EL5030	2,5	Metz	E
<input type="checkbox"/>	<input type="checkbox"/>	Chao, Fractales et complexité	Chaos, Fractal and Complexity	2EL5130	2,5	Metz	E
<input type="checkbox"/>	<input type="checkbox"/>	Ingénierie des procédés au service du développement durable	Chemical Engineering: application to environment and sustainable production	2EL2040	2,5	Metz	E
<input type="checkbox"/>	<input type="checkbox"/>	Systèmes d'exploitation	Operating Systems	2EL6030	2,5	Rennes	F
<input type="checkbox"/>	<input type="checkbox"/>	Expérimentation et accès sans fil intelligent	Intelligent Wireless Access & Experimentation	2EL6120	2,5	Rennes	E
<input type="checkbox"/>	<input type="checkbox"/>	Commande prédictive	Model Based Predictive Control	2EL6150	2,5	Rennes	E
ELECTIVE SERIES 2.6							
Choice 1	Choice 2	FR Course title	Eng Course title	Course Code	ECTS	Campus	Language of instruction
<input type="checkbox"/>	<input type="checkbox"/>	Pilotage des systèmes dynamiques multi-agents - Application au vol en formation de drones	Control of Dynamic Multi-agent Systems - Application to the formation of Drones	2EL1130	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Ingénierie Nucléaire	Nuclear Engineering	2EL1430	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Génie logiciel orienté objet	Object Oriented Software Engineering	2EL1520	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Informatique théorique	Theoretical Computer science	2EL1540	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Algèbre et cryptologie	Algebra and Cryptology	2EL1740	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Simulation des couplages multiphysiques avec la MEF	Multiphysics Coupling Simulation with Finite Element Method	2EL1850	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Management de l'innovation et création d'entreprise	Innovation Management and Business Creation	2EL2190	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Application de la physique statistique au traitement de l'information	Applications of Statistical Physics to Information Processing	2EL2630	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Design your Way	Design your Way	2EL2710	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Big Data: collecte, stockage et analyse de données sur cluster et cloud	Big Data: Collection, Storage and Analysis of Data on Clusters and Cloud	2EL5040	2,5	Metz	E
<input type="checkbox"/>	<input type="checkbox"/>	Systèmes embarqués électroniques et information robustes	Robust Electronic and Embedded Systems	2EL5080	2,5	Metz	F
<input type="checkbox"/>	<input type="checkbox"/>	Réalité virtuelle et augmentée	Virtual and Augmented Reality	2EL6070	2,5	Rennes	E
<input type="checkbox"/>	<input type="checkbox"/>	Systèmes embarqués et Internet des Objets	Embedded Systems and Internet of Things	2EL6130	2,5	Rennes	F
<input type="checkbox"/>	<input type="checkbox"/>	Micro-réseaux: composants et pilotage	Micro-Grids: components and control	2EL6140	2,5	Rennes	E
<input type="checkbox"/>	<input type="checkbox"/>	Finance d'entreprise avancée	Advanced corporate finance	2EL6200	2,5	Rennes	F

ENSEIGNEMENTS HORS SEQUENCE / SEMESTER-LONG COURSES

Multiple choices possible	FR Course title	Eng Course title	Course code	ECTS	Campus	Language of instruction
<input type="checkbox"/>	Philosophie	Philosophy	2SL3000	1,5	all	F
<input type="checkbox"/>	Ateliers Pratiques Ingénieur "API"	Engineering Skills Workshops	2SL5000	1	all	F
<input type="checkbox"/>	Ateliers Pratique Professionnelle "APP"	Professional Practice Workshops	2SL7000	0,5	all	F
<input type="checkbox"/>	Projet S8* (voir listes des pôles projets p.8)	Project S8* (list of project clusters on p.8)	2SL8100	8,5	all	E or F depending on topic or team
	Sport	Sports	2SL9000	0	all	N/A

INTENSIVE SEMINAR COURSES							
Choice 1	Choice 2	FR Course title	Eng Course title	Course code	ECTS	Campus	Language of instruction
<input type="checkbox"/>	<input type="checkbox"/>	Cours de type Sciences Humaines et Sociales (SHS) dans l'un de ces 4 domaines : Individus, Travail, Organisation ; Enjeux de société ; Science, Technologie, Société ou Innovation, Arts et Créativité	Humanities and Social Sciences (SHS) course, in one of the following domains: Individual, Work and Organisation; Perspective on key social issues; Science, Technology, Society or Innovation, Arts and Creativity	2IN2310, 2IN2320, 2IN2330, or 2IN2340	1,5	all	F or E depending on course
<input type="checkbox"/>	<input type="checkbox"/>	Gestion des Achats	Procurement Management	2IN2180	2,5	Paris-Saclay	E
<input type="checkbox"/>	<input type="checkbox"/>	Développement d'applications web et mobile	Web and Mobile application development	2IN1570	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Bridge building challenge	Bridge Building challenge	2IN5010	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Travail expérimental de physique	Experimental work in Physics	2IN5030	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Enseignement expérimental en transmission d'information	Experimental work in information transmission	2IN5040	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Ethique et Responsabilité	Ethics and Responsibility	2IN5110	2,5	Paris-Saclay	F
<input type="checkbox"/>	<input type="checkbox"/>	Finances Publiques	Public Finances	2IN5120	2,5	Metz	F
<input type="checkbox"/>	<input type="checkbox"/>	Analyse de risques - INFOSEC	Risk Analysis - INFOSEC	2IN1520	2,5	Rennes	F

LANGUAGE COURSES						
Choices (max. 2)	FR Course title	Eng Course title	Course code	ECTS	Campus	Language of instruction
<input type="checkbox"/>	Anglais	English	2LC0100	1,5	all	F
<input type="checkbox"/>	Français Langue Etrangère - FLE	French as a foreign language	2LC0200	1,5	all	F
<input type="checkbox"/>	Allemand	German	2LC0300	1,5	all	F
<input type="checkbox"/>	Espagnol	Spanish	2LC0400	1,5	all	F
<input type="checkbox"/>	Italien	Italian	2LC0500	1,5	all	F
<input type="checkbox"/>	Portugais	Portuguese	2LC0600	1,5	Paris-Saclay	F
<input type="checkbox"/>	Chinois	Chinese	2LC7000	1,5	all	F
<input type="checkbox"/>	Japonais	Japanese	2LC0800	1,5	all	F
<input type="checkbox"/>	Russe	Russian	2LC0900	1,5	P-S, R	F
<input type="checkbox"/>	Arabe	Arabic	2LC1000	1,5	P-S, R	F
<input type="checkbox"/>	Hébreu	Hebrew	2LC1200	1,5	Paris-Saclay	F

Total ECTS :

* List of S8 Project clusters (in French *Pôles Projets*): If interested in this project, you will be asked to rank these topics **after your admission and before your arrival**. (Assignment to a specific cluster will depend on requests and available spots)

N°				Remark	Campus	
P02		City Faber Lab	City Faber Lab		Paris-Saclay	Language by default is French. However, it will be possible to use English in your group unless specified otherwise.
P03		CubeSats	CubeSats		Paris-Saclay	
P04		Data Science	Data Science		Paris-Saclay	
P05		Formation à la Recherche	Training for Research	Mathematics or Physics training required	Paris-Saclay	
P07		Ingénierie pour l'Environnement	Environmental Engineering		Paris-Saclay	
P09		Innovations Pédagogiques et Edtech	Pedagogical Innovations and Edtech		Paris-Saclay	
P10		Intelligence Artificielle	Artificial Intelligence		Paris-Saclay	
P11		IoT - Internet of Things	IoT - Internet of Things		Paris-Saclay	
P12		Makers	Makers		Paris-Saclay	
P13		Maîtrise des Systèmes Énergétiques	Power System Control		Paris-Saclay	
P14		MédiaScience	MediaScience		Metz	
P15		Modélisation Mathématique des Systèmes Complexes	Mathematical Modelling of Complex Systems		Paris-Saclay	
P16		Mutations Économiques Agiles et Responsables	Economic Changes		Paris-Saclay	
P17		Nouveaux Concepts Énergétiques	New Concepts Energy		Paris-Saclay	
P18		Production, Supply Chain et Opérations	Production, Supply Chain and Operations	Held in French	Paris-Saclay	
P19		Robotique	Robotic Systems in Interaction		Paris-Saclay	
P20		Biotechnologies et Santé	Biotechnology and Health	Biology training required	Paris-Saclay	
P21		Smart and Secure Life	Smart and Secure Life		Rennes	
P22		Systèmes Cyber-Physiques	Cyberphysical Systems		Paris-Saclay	
P23		Tech for Good and Design Thinking	Tech for Good and Design Thinking		Paris-Saclay	
P24		Transition Écologique et Solidaire	Ecological and Inclusive Transition	Biology training required, held in French	Paris-Saclay	
P25		Véhicules Intelligents	Autonomous Vehicles		Paris-Saclay	