



Visiting Students Programme
26-27, Engineering

Cybersecurity, Digital Systems, Electrical, Electronics

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1 Overview

These academic mobility opportunities are based on the CentraleSupélec engineering programs in Cybersecurity, Digital Systems, Electronics Engineering and Electrical Engineering. They are open to incoming students under our partnership agreements or to visiting students.

They are open for semester mobility (semesters 7 or 8) or academic year mobility (semesters 7 and 8).

Depending on the semester and the field of studies they are open:

- on the Rennes campus in Brittany which is recognized both nationally and internationally for their economic dynamism and innovation capacity in digital technologies and their applications to transition challenges;
- on the Paris-Saclay campus in the heart of Paris-Saclay University.

2 Further Information

All information about CentraleSupélec and its campuses in Rennes and Paris-Saclay can be found on the school's website (www.centralesupelec.fr). Information about application process and deadlines may be found on the website or in Centrale-Supelec International Factsheet.

All information about getting ready to come in France and living in Rennes may be found on the CMI Rennes website (cmi.univ-rennes.fr/en).

Contact person for further information regarding:

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- Learning agreements and choices of modules: Ms Julie Castel (julie.castel@centralesupelec.fr) or Ms Melissa Cournot (melissa.cournot@centralesupelec.fr)
- Housing and living:
 - in Paris-Saclay: Ms Julie Castel (julie.castel@centralesupelec.fr)
 - in Rennes: Ms Melissa Cournot (melissa.cournot@centralesupelec.fr)

3 Autumn semester(September to December 26) in Rennes

3.1 List of Courses

Code	Title	hours	ECTS	more
SPR-AUT-004	Dynamical systems structured modeling	39.0	3.5	link
SPR-AUT-005	Non-linear systems	19.5	2.0	link
SPR-ELE-002	Processors Architecture (1/2)	19.5	1.5	link
SPR-ELE-003	Reconfigurable Computing and Programmable System-on-Chip (SoC) Architectures	39.0	3.5	link
SPR-ELE-005	Sensors and interfaces	19.5	2.0	link
SPR-ELE-006	Sustainable digital systems	19.5	2.0	link
SPR-ELE-015	Analog/Digital and Digital/Analog Converters	19.5	2.0	link
SPR-ELE-016	Radiation and propagation	19.5	2.0	link
SPR-ELE-017	Radio frequency electronics	19.5	2.0	link
SPR-ELE-018	Digital communication	19.5	2.0	link
SPR-EPS-991	Physical Education	22.5	0.0	link
SPR-HEP-010	Entrepreneurship	18.0	1.5	link
SPR-HEP-011	Teamwork: Advanced Practice	18.0	2.0	link
SPR-HEP-012	Careers in Research	18.0	1.5	link
SPR-HEP-013	Ecological transition for sustainable development	21.0	2.0	link
SPR-HEP-017	business transformation	18.0	1.5	link
SPR-INF-011	Computer architecture for cybersecurity (2/2)	19.5	2.0	link
SPR-INF-012	Compilation	58.5	5.5	link
SPR-INF-013	Mobile Programming on Android	24.0	2.5	link
SPR-INF-014	Embedded Systems and Internet of Things	24.0	2.5	link
SPR-INF-015	Advanced Computer Networks	39.0	3.5	link
SPR-INF-016	Introduction to computer security	19.5	2.0	link
SPR-INF-036	Microcontroller-based embedded systems	39.0	3.5	link
SPR-INF-043	Embedded Operating System	24.0	2.0	link
SPR-INF-044	Advanced machine learning	19.5	1.5	link
SPR-INF-045	Deep learning	19.5	2.0	link
SPR-LVC-991	English as a foreign language	22.5	2.0	link
SPR-LVC-992	Modern language	22.5	2.0	link
SPR-LVC-993	French as a Foreign Language	22.5	2.0	link
SPR-MAT-005	Optimization	39.0	3.5	link
SPR-MAT-006	High-dimensional optimization	24.0	2.5	link
SPR-PRJ-010	Research Project	270	20.0	link
SPR-SEE-002	Electric machines, drives and control	39.0	3.5	link
SPR-SEE-003	Micro-grid sizing challenge	24.0	2.0	link
SPR-SEE-004	Energy transition and Renewables	58.5	6.0	link
SPR-SIC-004	Advanced digital communications	39.0	3.5	link

3.2 Constraints

3.2.1 Time Table

Because of time table constraints some choices are unfortunately not possible. Constraints in the choice of modules are specified by the following table. In each row you can choose at most one module. If a chosen module spans 2 rows, no other modules may be selected in both rows.

1	SPR-INF-044	SPR-SEE-002	SPR-ELE-002		
2	SPR-ELE-017		SPR-INF-011*	SPR-INF-045	
3	SPR-ELE-016	SPR-ELE-003	SPR-SIC-004	SPR-AUT-004	SPR-INF-015
4	SPR-ELE-015				
5	SPR-SEE-004	SPR-ELE018	SPR-INF-016	SPR-ELE-006	
6		SPR-INF-012	SPR-INF-036		
7	SPR-AUT-005		SPR-ELE-005		
8	SPR-HEP-010	SPR-HEP-012	SPR-HEP-017		
9	SPR-MAT-006	SPR-SEE-003	SPR-INF-043	SPR-INF-014	SPR-INF-013

Notes:

- SPR-ELE-002 is a prerequisite for SPR-INF-011

3.2.2 Research project

Research project module (SPR-PRJ-010) consists in working on a project in a research team of the campus, 3 days each week. In order to apply to this module you must also select modules for at least 10 credits (excluding other SPR-PRJ modules). The research subject and the supervisor should be defined before admission.

3.3 Predefined Tracks

Modules which are proposed for exchange and visiting students are part of the four Ingénieur CentraleSupélec programmes (Cybersecurity, Digital Systems, Electrical engineering, Electronics). Although they are not mandatory, these programmes offer consistent choices.

3.3.1 Cybersecurity

SPR-ELE-002; SPR-ELE-003; SPR-EPS-991; SPR-HEP-010; SPR-HEP-011; SPR-HEP-012; SPR-HEP-013; SPR-HEP-017; SPR-INF-011; SPR-INF-012; SPR-INF-013; SPR-INF-014; SPR-INF-015; SPR-INF-016; SPR-LVC-991; SPR-LVC-992; SPR-LVC-993; SPR-MAT-005;

3.3.2 Digital Systems

SPR-ELE-005; SPR-ELE-006; SPR-EPS-991; SPR-HEP-010; SPR-HEP-011; SPR-HEP-012; SPR-HEP-013; SPR-HEP-017; SPR-INF-036; SPR-INF-044; SPR-INF-045; SPR-LVC-991; SPR-LVC-992; SPR-LVC-993; SPR-MAT-005; SPR-MAT-006; SPR-SIC-004;

3.3.3 Electrical Engineering: Energy and Systems

SPR-AUT-004; SPR-AUT-005; SPR-EPS-991; SPR-HEP-010; SPR-HEP-011; SPR-HEP-012; SPR-HEP-013; SPR-HEP-017; SPR-LVC-991; SPR-LVC-992; SPR-LVC-993; SPR-MAT-005; SPR-SEE-002; SPR-SEE-003; SPR-SEE-004;

3.3.4 Electronics

SPR-ELE-002; SPR-ELE-005; SPR-ELE-015; SPR-ELE-016; SPR-ELE-017; SPR-ELE-018; SPR-EPS-991; SPR-HEP-010; SPR-HEP-011; SPR-HEP-012; SPR-HEP-013; SPR-HEP-017; SPR-INF-036; SPR-INF-043; SPR-LVC-991; SPR-LVC-992; SPR-LVC-993; SPR-MAT-005;

4 Spring semester (January to April 27) in Rennes

4.1 List of Courses

Code	Title	hours	ECTS	more
SPR-AUT-006	Control systems architecture and automation	19.5	1.5	link
SPR-AUT-007	Modeling and control challenge 2	24.0	1.5	link
SPR-AUT-008	Model predictive control	19.5	1.5	link
SPR-ELE-007	Hardware Accelerators	39.0	3.0	link
SPR-ELE-008	IoT security	24.0	1.5	link
SPR-ELE-009	Embedded IA	24.0	1.5	link
SPR-EPS-991	Physical Education	22.5	0.0	link
SPR-HEP-018	Business knowledge	19.5	1.5	link
SPR-HEP-021	Societal issues	39.0	3.0	link
SPR-INF-017	Cryptographic protocols	24.0	1.5	link
SPR-INF-018	Formal verification	19.5	1.5	link
SPR-INF-019	Web Technologies and Security	24.0	1.5	link
SPR-INF-020	Operating Systems	39.0	3.0	link
SPR-INF-021	System Programming on Linux and Windows	39.0	3.0	link
SPR-INF-022	Distributed Systems and BigData	39.0	3.0	link
SPR-INF-023	High performance computer architectures and programming models	39.0	3.0	link
SPR-INF-037	Bayesian methods in machine learning	19.5	1.5	link
SPR-INF-038	Multimodal AI for mental health	19.5	1.5	link
SPR-LVC-991	English as a foreign language	22.5	2.0	link
SPR-LVC-992	Modern language	22.5	2.0	link
SPR-LVC-993	French as a Foreign Language	22.5	2.0	link
SPR-PRJ-010	Research Project	270	20.0	link
SPR-PRJ-021	Technical Project of the Cybersecurity Curriculum	39.0	4.0	link
SPR-PRJ-022	Sustainable Energy program design project	39.0	4.0	link
SPR-PRJ-023	"Digital systems" program design project	39.0	4.0	link
SPR-SEE-005	Prosumers	39.0	3.0	link
SPR-SEE-006	Nuclear energy	19.5	1.5	link
SPR-SEE-007	Electrical grids	39.0	3.0	link
SPR-SEE-008	Electrical grids modeling and simulation challenge	24.0	1.5	link
SPR-SIC-005	Low-power networks and communications	19.5	1.5	link
SPR-SIC-006	Non-terrestrial networks and communications	19.5	1.5	link
SPR-SIC-007	Advanced signal processing	19.5	1.5	link
SPR-STA-021	Engineer-assistant internship of the Cybersecurity curriculum	12 weeks	4.0	link
SPR-STA-022	Engineer internship	12 weeks	4	link
SPR-STA-023	Engineer internship	12 weeks	4.0	link

4.2 Constraints

4.2.1 Time Table

Because of time table constraints some choices are unfortunately not possible. Constraints in the choice of modules are specified by the following table. In each row you can choose at most one module. If a chosen module spans 2 rows, no other modules may be selected in both rows.

1	SPR-INF-020	SPR-SIC-005	SPR-SEE-007	
2		SPR-INF-038		
3	SPR-PRJ-021	SPR-PRJ-022	SPR-PRJ-023	
4	SPR-INF-022	SPR-INF-023	SPR-ELE-007	SPR-SEE-005
5	SPR-INF-021	SPR-SIC-007	SPR-AUT-008	
6		SPR-SIC-006	SPR-AUT-006	
7	SPR-INF-018	SPR-INF-037	SPR-SEE-006	
8	SPR-AUT-007	SPR-ELE-009	SPR-INF-019	
9	SPR-SEE-008	SPR-ELE-008	SPR-INF-017	
10	SPR-STA-021	SPR-STA-022	SPR-STA-023	

4.2.2 Internship

According to French regulation, you may not select an internship module (SPR-STA-021, SPR-STA-022, SPR-STA-023) if you have not selected at least 200 hours of academic modules during semesters 7 and 8 in CentraleSupélec.

4.2.3 Research project

Research project module (SPR-PRJ-010) consists in working on a project in a research team of the campus, 3 days each week. In order to apply to this module you must also select modules for at least 10 credits (excluding other SPR-PRJ modules). The research subject and the supervisor should be defined before admission.

4.3 Predefined Tracks

Modules which are proposed for exchange and visiting students are part of the three Ingénieur CentraleSupélec programmes (Cybersecurity, Digital Systems, Electrical engineering). Although they are not mandatory, these programmes offer consistent choices.

4.3.1 Cybersecurity

SPR-EPS-991; SPR-HEP-018; SPR-HEP-021; SPR-INF-017; SPR-INF-018; SPR-INF-019; SPR-INF-020; SPR-INF-021; SPR-INF-022; SPR-INF-023; SPR-LVC-991; SPR-LVC-992; SPR-LVC-993; SPR-STA-021;

4.3.2 Digital Systems

SPR-ELE-007; SPR-ELE-008; SPR-ELE-009; SPR-EPS-991; SPR-HEP-018; SPR-HEP-021; SPR-INF-037; SPR-INF-038; SPR-LVC-991; SPR-LVC-992; SPR-LVC-993; SPR-PRJ-023; SPR-SIC-005; SPR-SIC-006; SPR-SIC-007; SPR-STA-023;

4.3.3 Electrical Engineering: Energy and Systems

SPR-AUT-006; SPR-AUT-007; SPR-AUT-008; SPR-EPS-991; SPR-HEP-018; SPR-HEP-021; SPR-LVC-991; SPR-LVC-992; SPR-LVC-993; SPR-PRJ-022; SPR-SEE-005; SPR-SEE-006; SPR-SEE-007; SPR-SEE-008;

5 Spring semester (January to April 27) in Paris-Saclay

5.1 List of Courses

Code	Title	hours	ECTS	more
SPG-ELE-001	Integrated analog circuits	39.0	3.5	link
SPG-ELE-002	Processor architecture (2)	19.5	2.0	link
SPG-ELE-003	Microwave passive components	19.5	1.5	link
SPG-ELE-004	Electronic energy conversion	19.5	1.5	link
SPG-ELE-005	Manufacturing of electronic cards	19.5	1.5	link
SPG-EPS-001	Physical Education	22.5	nan	link
SPG-HEP-001	Sober and sustainable innovation	10.5	0.5	link
SPG-HEP-002	Economics of electronics	9.0	0.5	link
SPG-HEP-003	Sober and sustainable innovation	22.5	1.5	link
SPG-HEP-004	Philosophy	16.5	1.0	link
SPG-LVC-001	English as a foreign language	22.5	2.0	link
SPG-LVC-003	Modern language	22.5	2.0	link
SPG-PRJ-001	Electronic program design project	87.0	7.0	link
SPG-PRJ-010	Research Project	270	20.0	link
SPG-SEE-001	Electrical Energy Systems	19.5	1.5	link
SPG-STA-001	Engineering internship S8	12 weeks	4.0	link

5.2 Constraints

5.2.1 Internship

According to French regulation, you may not select an internship module (SPG-STA-001) if you have not selected at least 200 hours of academic modules during semesters 7 and 8 in CentraleSupélec.

5.2.2 Research project

Research project module (SPG-PRJ-010) consists in working on a project in a research team of the campus, 3 days each week. In order to apply to this module you must also select modules for at least 10 credits (excluding other SPG-PRJ modules). The research subject and the supervisor should be defined before admission.

6 Selection Sheets

6.1 Autumn semester(September to December 26) in Rennes

*Please select at most one module in each row. For a **one** semester mobility you must select at least 20 ECTS, for **two** semesters mobility you must select at least 15 ECTS for each semester. If you want to select an internship or a research project you must consider legal constraints given above.*

Name:

1	SPR-INF-044	SPR-SEE-002	SPR-ELE-002		
2	SPR-ELE-017		SPR-INF-011*	SPR-INF-045	
3	SPR-ELE-016	SPR-ELE-003	SPR-SIC-004	SPR-AUT-004	SPR-INF-015
4	SPR-ELE-015				
5	SPR-SEE-004	SPR-ELE018	SPR-INF-016	SPR-ELE-006	
6		SPR-INF-012	SPR-INF-036		
7	SPR-AUT-005		SPR-ELE-005		
8	SPR-HEP-010	SPR-HEP-012	SPR-HEP-017		
9	SPR-MAT-006	SPR-SEE-003	SPR-INF-043	SPR-INF-014	SPR-INF-013
10	SPR-MAT-005				
11	SPR-HEP-011				
12	SPR-HEP-013				
13	SPR-HEP-991				
14	SPR-LVC-991				
15	SPR-LVC-992	SPR-LVC-993			
16	SPR-PRJ-010				

Notes:

* SPR-ELE-002 is a prerequisite for SPR-INF-011

6.2 Spring semester (January to April 27) in Rennes

*Please select at most one module in each row. For a **one** semester mobility you must select at least 20 ECTS, for **two** semesters mobility you must select at least 15 ECTS for each semester. If you want to select an internship or a research project you must consider legal constraints given above.*

Name:

1	SPR-INF-020	SPR-SIC-005	SPR-SEE-007	
2		SPR-INF038		
3	SPR-PRJ-021	SPR-PRJ-022	SPR-PRJ-023	
4	SPR-INF-022	SPR-INF-023	SPR-ELE-007	SPR-SEE-005
5	SPR-INF-021	SPR-SIC-007	SPR-AUT-008	
6		SPR-SIC-006	SPR-AUT-006	
7	SPR-INF-018	SPR-INF-037	SPR-SEE-006	
8	SPR-AUT-007	SPR-ELE-009	SPR-INF-019	
9	SPR-SEE-008	SPR-ELE-008	SPR-INF-017	
10	SPR-STA-021	SPR-STA-022	SPR-STA-023	
11	SPR-HEP-018			
12	SPR-HEP-021			
13	SPR-EPS-991			
14	SPR-LVC-991			
15	SPR-LVC-992	SPR-LVC-993		
16	SPR-PRJ-010			

6.3 Spring semester (January to April 27) in Paris-Saclay

Please select at most one module in each row. For a **one** semester mobility you must select at least 20 ECTS, for **two** semesters mobility you must select at least 15 ECTS for each semester. If you want to select an internship or a research project you must consider legal constraints given above.

Name:

1	SPG-ELE-001
2	SPG-ELE-002
3	SPG-ELE-003
4	SPG-ELE-004
5	SPG-ELE-005
6	SPG-SEE-001
7	SPG-HEP-001
8	SPG-HEP-002
9	SPG-HEP-003
10	SPG-HEP-004
11	SPG-LVC-001
12	SPG-LVC-003
13	SPG-PRJ-001
14	SPG-PRJ-010
15	SPG-STA-001
16	SPG-EPS-001