

## Studies Plan

### Génie électrique et électronique 2023-24

#### Block 1 "Basis sciences"

Courses			Bachelor 3	Bachelor 4	Bachelor 5	Bachelor 6	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	l e p	l e p	l e p	l e p			
E	<b>Analysis III</b> MATH-202(c) MA		Licht	3h 2h				Win	Written	5
E	<b>Analysis IV</b> MATH-207(c) MA		Licht		2h 2h			Sum	Written	4
E	<b>General physics: electromagnetism</b> PHYS-201(d) PH		Grundler	4h 2h				Win	Written	6
F	<b>General physics : quanta</b> PHYS-207(c) PH		Pasquarello		2h 2h			Sum	Written	4
E	<b>Numerical analysis</b> MATH-251(b) MA		Herbst		2h 2h			Sum	Written	4
F	<b>Probability and statistics</b> MATH-234(b) MA		Zemel	2h 2h				Win	Written	4

#### Block 2 : Specific courses

Courses			Bachelor 3	Bachelor 4	Bachelor 5	Bachelor 6	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	l e p	l e p	l e p	l e p			
F	<b>Data science for engineers with Python</b> ENG-209 EL		Bouillet Pellet Verscheure	1h 2h				Win	During the semester	3
F	<b>Electromagnetics I : Transmission lines and waves</b> EE-200 EL		Fleury	2h 1h				Win	Written	3
F	<b>Electromagnetics II : field computation</b> EE-201 EL		Fleury		2h 1h			Sum	Written	3
F	<b>Electronics I</b> EE-202 EL		Koukab Meinen	2h 1h 2h				Win	Written	4
F	<b>Electronics II</b> EE-203 EL		Koukab Meinen		2h 1h 2h			Sum	Written	4
F	<b>Elements of statistics for data science</b> EE-209 EL		Krzakala		2h 1h			Sum	Written	3
F	<b>Logic systems (for EL)</b> EE-207 EL		Schmid	2h 1h				Win	During the semester	3
F	<b>Microcontrollers and digital systems</b> EE-208 EL		Schmid		1h 2h			Sum	Written	3
F	<b>Signals and systems (for EL)</b> EE-205 EL		Thiran		2h 2h			Sum	Written	4

#### Block 3 : Required courses

Courses			Bachelor 3	Bachelor 4	Bachelor 5	Bachelor 6	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	l e p	l e p	l e p	l e p			
E	<b>Control systems + TP</b> ME-321 GM		Jones Salzmann			3h 1h		Win	Written	4
E	<b>Digital systems design</b> EE-334 EL		Burg		2h 2h			Win	Written	4
F	<b>Energy conversion</b> EE-360 EL		Hodder Matioli Paolone		3h 1h			Win	During the semester	4
F	<b>Matrix analysis</b> EE-312 EL		Vandergheynst			2h 2h		Sum	Written	4
	<b>Microprogrammed Embedded Systems</b> EE-310 EL		Atienza Alonso		2h 2h			Win	Oral	4

	<b>Project in Electrical Engineering</b>					7h	Sum	During the 7 semester
	EE-399	EL	Profs divers					
F	<b>Signal processing</b>				4h		Win	During the 4 semester
	EE-350	EL	Frossard Thiran					

### Groupe 1 : Options

Courses			Bachelor 3	Bachelor 4	Bachelor 5	Bachelor 6	Exam Session	Exam	Credit
Language	Code	Section	Teacher	l e p	l e p	l e p	l e p		
E	<b>Analog IC design</b>				2h 1h		Win	Written	3
	EE-320	EL	Shoaran						
E	<b>Digital IC design</b>					2h 1h	Sum	Written	3
	EE-330	EL	Schmid						
F	<b>Electrical machines (for EL)</b>					2h 1h	Sum	Written	3
	EE-361	EL	Hodder						
F	<b>Electric power systems</b>				2h 1h		Win	Written	3
	EE-370	EL	Cherkaoui						
F	<b>Electroacoustics</b>				2h 1h		Win	Written	3
	EE-348	EL	Lissek						
F	<b>Electronic circuits and systems</b>				2h 1h		Win	Written	3
	EE-336	EL	Ionescu Kayal						
F	<b>Optical engineering (for EL)</b>				2h 1h		Win	Written	3
	MICRO-321(b)	MT	Martin						
F	<b>Power distribution networks</b>				2h 1h		Win	Written	3
	EE-371	EL	Paolone						
E	<b>Quantum physics I</b>				3h 2h		Win	Written	5
	PHYS-313	PH	Savona						
F	<b>Radiation and antennas</b>				2h 1h		Win	Written	3
	EE-345	EL	Skrivervik						

### Specializations

Courses			Bachelor 3	Bachelor 4	Bachelor 5	Bachelor 6	Exam Session	Exam	Credit
Language	Code	Section	Teacher	l e p	l e p	l e p	l e p		
F	<b>Fundamentals of machine learning</b>					2h 2h	Sum	Written	4
	EE-311	EL	Liebling						
F	<b>Lab in energy conversion</b>					3h	Sum	During the 3 semester	3
	EE-390(b)	EL	Hodder Robert						
F	<b>Lab in information technologies</b>					3h	Sum	During the 3 semester	3
	EE-390(c)	EL	Allenbach Brès Burg Lissek Thiran						
E	<b>Lab on hardware-software digital systems codesign</b>					3h	Sum	During the 3 semester	3
	EE-390(a)	EL	Atienza Alonso Peon Quiros						
F	<b>Micro and nanoelectronic devices</b>					3h 1h	Sum	Written	4
	EE-333	EL	Ionescu						
E	<b>Power electronics</b>					2h 2h	Sum	During the 4 semester	4
	EE-365	EL	Dujic						
F	<b>Systèmes de télécommunications</b>					3h 1h	Sum	During the 4 semester	4
	EE-342	EL	Burg						

### Transverse block HSS

Courses			Exam Session	Exam	Credit
Language	Code	Section	Teacher		
F	<b>SHS : Bachelor cycle BA6</b>				2
		SHS			
F	<b>HSS : Bachelor cycle BA5</b>				2
		SHS			

<i>F</i>	<b>HSS : Bachelor cycle BA4</b>	
	<i>SHS</i>	2
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<i>F</i>	<b>HSS : Bachelor cycle BA3</b>	
	<i>SHS</i>	2
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