



ESME School of Engineering

Undergraduate Program

Courses available for exchange students – Undergraduate Level



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Paris-Centre Campus

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Engineering Creative Workshops – Spring Semester (February – June)

SEMESTER	MODULE	HOURS	CREDITS	Aims	Description
2	CRI - 'Learn By Doing (LBD)' Workshop	30h	10	By the end of the workshop, students will be more autonomous on the targeted research and tools needed to carry out technological projects.	ESME Sudria partners with the CRI (Centre de Recherche Interdisciplinaire) to offer this hands-on workshop in English. In groups, students try to create and / or improve technological solutions in order to reach the sustainable development goals set by the UN. Each group has a budget of 300€ to purchase items pertaining to the project they are working on. Students use 3D printers, laser cutters, Arduino boards and other tools to conceptualize, experiment and carry their projects out.
2	IoT Workshop + Design Thinking -	24h	10	At the end of the IoT workshop, students will be able to: - recognize new digital technologies and how they are used (IoT, machine learning, big data, cloud) and especially Raspberry Pi.	The workshop presents the technologies to make and exploit connected objects networks. In groups, students manipulate the different elements of an IoT chain (data acquisition, wireless transmission, network management,



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				<ul style="list-style-type: none"> - analyze and describe the various elements of an IoT chain. - develop and deploy a simple wireless network and connect it to the cloud for IoT application. - recognize vulnerabilities in a system and begin to learn to protect systems. 	<p>data analysis in the cloud, etc.) and experiment with the different elements of a complete IoT chain. Design thinking utilizes elements from the designer's toolkit such as empathy and experimentation to arrive at innovative solutions. Students will learn to frame a question, gather inspiration, generate ideas, make ideas tangible and test to learn.</p>
2	French as Foreign Language (FFL)	30h	5	<p>At ESME Sudria, French as a Foreign Language is taught by professional French language instructors. Classes are adapted to students' level, based on the Common European Framework Reference for Languages (CEFR).</p>	



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Undergraduate Program – Year 1 – Spring Semester (February – June)

SEMESTER	MODULE	HOURS	CREDITS
2	Fundamental Math 2	39h	8
2	Applied Math 2	39h	8
2	Electromagnetism 1	39h	8
2	Technical Systems 2	26h	5
2	Thermal Machines & Thermal Transfers	36h	6
2	Living Systems 2	12h	2
2	Citizens & Sciences 2	10,5h	2
2	Microcontroller Programming	12h	2
2	Advanced Algorithmics (Computer Science)1	24h	5
2	English Language 2	45h	10
2	Additional Language*	20h	4
	*Not available if French as a foreign language (FFL) is taken		
	Introduction to Business Economics 1	15h	3
2	Introduction to Business Economics 2	21h	4



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Undergraduate Program – Year 2 – Spring Semester (February – June)

SEMESTER	MODULE	HOURS	CREDITS
2	Fundamental Math 4	36h	7
2	Applied Math 4	36h	7
2	Electromagnetism 2	36h	7
2	Technical Systems 4	26h	5
2	Electromagnetic Waves	25.5h	5
2	Living Systems 4	12h	2
2	Project Management MIR4	10.5h	2
2	HMI (Human Machine Interaction) Applications	10h	2
2	Analog Electronics 2	24h	5
2	Advanced Algorithmics (Computer Science) 2	24h	5
2	English Language 4	63h	10
2	Additional Language*	20h	4
	*Not available if French as a foreign language (FFL) is taken		
2	Personal Development 2	10,5h	2
2	Business Strategy 2	18h	3