

Teaching Units	Teaching modules	Code	Hours			ECTS
			Course	Practical Work	Total	
Languages	French as a foreign language		20		20	5
Personal Research Project	Writing Report Oral Defense					10
Industrial project	Writing Report Oral Defense			55	55	5

Students cannot simultaneously choose the personal research project and the industrial project.

Students cannot simultaneously choose modules inside the units "Image, Sound and Artificial Intelligence" and "E- payment and Computer Security".

Image, Sound and Artificial Intelligence						
Group projects and advanced technologies	Intensive project			35	35	5
	<i>Transmission of Information : Compression, Coding*</i>		25		25	
	Total		25	35	60	5
Image, Sound and multimedia	<i>Pattern recognition*</i>		22	8	30	10
	Tools for multimedia		4	6	10	
	Geometric analysis and topology for images		9	6	15	
	<i>Advanced image processing*</i>		20	10	30	
	Computer generated Imagery		12	18	30	
Total				115	10	
Artificial intelligence	Stochastic optimization for machine learning		22	8	30	10
	Initiation to deep learning		17	18	35	
	Advanced deep learning		22	8	30	
Total				95	10	

*Courses in italics may partly or completely be taught in French with slides, handouts and examinations in English

**Courses mainly in french

E-payment and Computer Security						
Group projects and advanced technologies	Intensive project			35	35	5
	<i>Transmission of Information : Compression, Coding*</i>		25		25	
	Total	25	35	60	5	
Computer Security	<i>Embedded cryptography *</i>		12	20	32	10
	Digital identity		20	12	32	
	<i>Information System security *</i>		20	16	36	
	Introduction to Cloud Security and IoT		10		10	
	Total	62	52	110	10	
E-payment	<i>E-payment flows *</i>		14	12	26	10
	<i>E-payment components *</i>		12	3	15	
	<i>Risk management and PCI-DSS *</i>		10		10	
	Contactless transactions		11	12	23	
	<i>E-payment architectures *</i>		10	8	18	
Total	57	45	102	10		

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