

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", "E- payment and Computer Security" and "Cybersecurity and Artificial Intelligence".

Image, Sound and Artificial Intelligence						
Group projects and advanced technologies	Intensive project			35	35	5
	<i>Transmission of Information : Compression, Coding *</i>		25		25	
	<b>Total</b>		25	35	60	5
Image, Sound and multimedia	<i>Pattern recognition *</i>		22	8	30	10
	Optimal transport		6	4	10	
	Geometric analysis and topology for images		9	6	15	
	<i>Advanced image processing *</i>		20	10	30	
	Computer generated Imagery		12	18	30	10
	<b>Total</b>				115	10
Artificial intelligence	Stochastic optimization for machine learning		22	8	30	10
	Initiation to deep learning		17	18	35	
	Advanced deep learning		22	18	40	10
	<b>Total</b>				105	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
	Transmission of Information : Compression, Coding *		25		25	
	<b>Total</b>	25	35	60	5	
Computer Security	Advanced cryptography *		12	20	32	10
	Digital identity		20	12	32	
	Information System security *		20	16	36	
	Introduction to Cloud Security and IoT		10		10	
	<b>Total</b>	62	48	110	10	
E-payment	E-payment flows *		14	12	26	10
	E-payment components *		12	15	27	
	Risk management and PCI-DSS *		10		10	
	Contactless transactions		12	12	24	
	E-payment architectures *		10	0	10	
	<b>Total</b>	58	39	97	10	

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# Computer Science

## Fall semester (sept - feb) 2nd year of Master

Cybersecurity and Artificial Intelligence						
Group projects and advanced technologies	Intensive project			35	35	5
	<i>Transmission of Information : Compression, Coding *</i>		25		25	
	<b>Total</b>	25	35	60	5	
Computer Security	<i>Advanced 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	
	<b>Total</b>	62	48	110	10	
Artificial intelligence	Stochastic optimization for machine learning		22	8	30	10
	Initiation to deep learning		17	18	35	
	Advanced deep learning		22	18	40	
	<b>Total</b>			105	10	

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