

SEMESTER 5

		CM	TD	TP	CI	TE	Total	Coef
MATHEMATICS FOR COMPUTER SCIENCE (9 ECTS)							124,5	
Probability and stochastic processes	C. Heinrich	12,25	10,5	1,75			24,5	2
Graph theory	B. Naegel, S. Faisan	12,25	17,5	3,5			33,25	3
Logic and logic programming	Q. Bramas, B. Marc	14	17,5	8			39,5	3
Matrix analysis	C. Doignon				18,5		18,5	2
Matlab	Y. Takakura, C. Heinrich			8,75			8,75	1
COMPUTER SCIENCE (9 ECTS)							126,5	
Algorithms and C programming	Q. Bramas, C. Heinkelé	19,25		40	19,25		78,5	3
Programming project	P. Galmiche, C. Heinkelé			30		18	48	2
SYSTEM AND NETWORKS (6 ECTS)							68	
Hardware architecture	M. Madec	7		16			23	1
Shell scripting	S. Genaud	3,5		16			19,5	1
Digital electronics	M. Madec	7	10,5	8			25,5	1
FOREIGN LANGUAGES (3 ECTS)							44	
English	CRL		20,0				20	N
German, spanish, japanese, or chinese			24,0				24	N
ECONOMIC AND SOCIAL SCIENCES (3 ECTS)							26,75	
Interpersonal communication	A. Brouchet, C. Colmerauer	7					7	-
Sustainable development and corporate social ...	G. Burgart, M. Louys, V. Maioli	10,5	9,25				19,75	R

SEMESTER 6

		CM	TD	TP	CI	TE	Total	Coef
MATHEMATICS AND SIGNAL (5 ECTS)							70,25	
Signal processing	H. Drira	10,5	10,5				21	1
Machine learning	S. Faisan, T. Kirscher				25,5		25,5	1
Optimization	H. Omran, D. Meckes	14	1,75	8			23,75	1
COMPUTER SCIENCE (9 ECTS)							127	
Object oriented programming	S. Genaud	22,75	38,5				61,25	3
Language theory	M. Figueiroa, H. Drira	19,25	22,75				42	2
Databases	S. Faisan, T. Kirscher	5,25		8	10,5		23,75	1
COMPUTER ARCHITECTRE AND SYSTEMS (10 ECTS)							137,75	
Operating systems	J. Montavont	17,5	9,75	12			39,25	3
System programming	Y. Zemali, A. Zeghina	15,75		22			37,75	3
Network communications programming	P. Merindol, B. Foubert	1,5		10			11,5	1
TCP/IP Networks	P. Merindol, B. Foubert	19,25	14,0	16			49,25	4
FOREIGN LANGUAGES (3 ECTS)							44	
English	CRL		20,0				20	N
German, spanish, japanese, or chinese			24,0				24	N
ECONOMIC AND SOCIAL SCIENCES (3 ECTS)							41	
Career planning	A. Dabrowski	3,5	10,5				14	R
Discover the basics of entrepreneurship	C. Bournique		6,0				6	R
Epistemology and construction of knowledge 1	C. Collet	21					21	R

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DIPLÔME D'INGÉNIEUR INFORMATIQUE ET RÉSEAUX 2^e ANNÉE
Année universitaire 2025-2026
Option RIO
Promotion 2027

SEMESTER 7

	CM	TD	TP	CI	TE	Total	Coef
ADVANCED COMPUTER SCIENCE I (8 ECTS)						110	
Parallel programming	14	8,0	8			30	1
Compiler design	24	24,0	12			60	2
Python programming				20		20	1
SYSTEMS AND NETWORKS (8 ECTS)						129	
Security	6	12,0	12			30	1
Intra-domain routing	18	4,0	8			30	1
Operating system design	14	12,0	6			32	1
Embedded systems			16	21		37	1
SERVICES AND COMMUNICATION (7 ECTS)						98	
Robotics and smart home technologies	10,5		20			30,5	1
New services and uses of the global Internet	17,5		16			33,5	1
Network services			12	22		34	1
FOREIGN LANGUAGES (3 ECTS)						42	
English			20			20	N
German, spanish, japanese, or chinese			22			22	N
ECONOMIC AND SOCIAL SCIENCES (1 ECTS)						17,5	
Professional networking	1,5	12,0				13,5	R
Ecological transition workshop			4			4	R
INTERNSHIP (3 ECTS)							N
Executing internship							N

SEMESTER 8

	CM	TD	TP	CI	TE	Total	Coef
ADVANCED COMPUTER SCIENCE II (8 ECTS)						90	
Distributed algorithms	24	24,0	12			60	2
Software architecture	14		16			30	1
PROJECT (5 ECTS)						105,75	
Engineering project 1	1,75	24,0			80	105,75	1
NETWORKS, CLOUD AND SECURITY (6 ECTS)						90	
Inter-domain routing	12	4,0	14			30	1
Wireless networks	12	10,0	8			30	1
Cloud and virtualization	14		16			30	1
DIGITAL DATA AND SYSTEMS (6 ECTS)						73,75	
Digital communications	7	5,25		12,25		24,5	1
Industry seminars	26					26	-
Advanced deep learning	10,5		8,75	4		23,25	1
FOREIGN LANGUAGES (3 ECTS)						42	
English		20,0				20	N
German, spanish, japanese, or chinese		22,0				22	N
ECONOMIC AND SOCIAL SCIENCES (2 ECTS)						29,75	
Financial management	10,5					10,5	1
Team management	0	5,25				5,25	R
Career planning	3,5	10,5				14	R

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	CM	TD	TP	CI	TE	Total	Coef
SEMESTER 7							
ADVANCED COMPUTER SCIENCE I (8 ECTS)						106	
Parallel Programming	14		12			26	1
Compiler design	24	24,0	12			60	2
Python programming				20		20	1
DATA SCIENCE AND KNOWLEDGE ENGINEERING (8 ECTS)							
Data science and machine learning			24	36		60	2
Statistical foundations of data science			10	20		30	1
Knowledge modeling			10	20		30	1
IMAGE, VISION AND DECISION MAKING (7 ECTS)							
Artificial vision	7			19,25		26,25	1
Digital image processing				21		21	1
Game theory				21		21	1
Metadata and interoperability				21		21	1
FOREIGN LANGUAGES (3 ECTS)							
English					20	20	N
German, spanish, japanese, or chinese					22	22	N
ECONOMIC AND SOCIAL SCIENCES (1 ECTS)							
Professional networking	1,5	12,0				13,5	R
Ecological transition workshop			4			4	R
INTERNSHIP (3 ECTS)							
Executing internship							N
SEMESTER 8							
ADVANCED COMPUTER SCIENCE II (8 ECTS)						90	
Distributed algorithms	24	24,0	12			60	2
Software architecture	14		16			30	1
PROJECT (5 ECTS)							
Engineering project 1	1,75	24,0			80	105,75	1
DIGITAL DATA AND CYBERSECURITY (6 ECTS)							
Deep learning for digital data	20		20	20		60	3
Cybersecurity				26,25		26,25	1
COMPLEX DATA AND NATURAL LANGUAGE (6 ECTS)							
Complex data			24	36		60	3
Natural language processing				12		12	1
FOREIGN LANGUAGES (3 ECTS)							
English					20,0	20	N
German, spanish, japanese, or chinese					22,0	22	N
ECONOMIC AND SOCIAL SCIENCES (2 ECTS)							
Financial management	10,5					10,5	1
Team management			5,25			5,25	R
Career planning	3,5	10,5				14	R

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	CM	TD	TP	CI	TE	Total	Coef
SEMESTER 9							
PROJECT (5 ECTS)						100	
Engineering project 2		20,0			80	100	1
NEXT-GENERATION NETWORKS (7 ECTS)						109	
Internet of things (IoT)	16		12			28	1
Programmable networks	14		16			30	1
Radio networks	27	6,0	18			51	2
DIGITAL (5 ECTS)						77	
Advanced security				30		30	1
Practical cybersecurity	7		10			17	1
Large-scale data processing and management	6	12,0	6	6		30	1
FOREIGN LANGUAGES (3 ECTS)						40	
English		20,0				20	N
German, spanish, japanese, or chinese		20,0				20	N
ECONOMIC AND SOCIAL SCIENCES (4 ECTS)						72	
Economic intelligence	12					12	1
Quality	16					16	1
Entrepreneurship	28					28	2
Intellectual property and patents	16					16	1
INTERNSHIP (6 ECTS)							
Practical internship							N
SEMESTER 10							
END OF STUDY INTERNSHIP (30 ECTS)							
Defense							6
Report							6
Internship work							18

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Option Science des données et intelligence artificielle
Promotion 2026

SEMESTER 9

		CM	TD	TP	CI	TE	Total	Coef
PROJECT (5 ECTS)							100	
Engineering project 2	T. Noël, F. Prégaldiny		20,0			80	100	1
DATA STORAGE AND PROCESSING (7 ECTS)							120	
Storage and protection of large-scale distributed data				18	42		60	2
Collaborative learning				12	18		30	1
Large-scale data processing		6	12,0	6	6		30	1
MACHINE LEARNING (5 ECTS)							85	
Reinforcement learning and simulation	M. Yguel				21		21	1
MLOps	A. Schutzger				28		28	1
Generative models	T. Lampert				16		16	1
Machine learning workshops	T. Lampert			20			20	1
FOREIGN LANGUAGES (3 ECTS)							40	
English	Ruhlmann M., Piotto R.		20,0				20	N
German, spanish, japanese, or chinese			20,0				20	N
ECONOMIC AND SOCIAL SCIENCES (4 ECTS)							72	
Economic intelligence	O. Olivier-Garnier, A. Matoua	12					12	1
Quality	E. Nguyen-Van-Sang	16					16	1
Entrepreneurship	M. Cuny, F. Prégaldiny	28					28	2
Intellectual property and patents	P. Borne	16					16	1
INTERNSHIP (6 ECTS)								
Practical internship								N

SEMESTER 10

		CM	TD	TP	CI	TE	Total	Coef
END OF STUDY INTERNSHIP (30 ECTS)								
Defense								6
Report								6
Internship work								18

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