

**DIPLÔME D'INGÉNIEUR TECHNOLOGIES DE L'INFORMATION POUR LA
SANTÉ 1^{re} ANNÉE
Année universitaire 2025-2026
Promotion 2028**

		CM	TD	TP	CI	TE	Total	Coef
MATHEMATICS AND COMPUTER SCIENCE (9 ECTS)							124,25	
Mathematics	V. Maioli	8,75	10,5				19,25	2
Probability and stochastic processes	C. Heinrich	12,25	10,5	1,75			24,5	2
Procedural programming	L. Cuvillon, S. Faisan, ...	5,25		28	26,25		59,5	3
Unix	V. Thorel, V. Costantino				10,5		10,5	1
Algorithmics	B. Marc	10,5					10,5	1
PHYSICS AND BIOLOGY (6 ECTS)							77	
Propagation of electromagnetic waves	S. Lecler, A. Nahas, H. Salehi	12,25	14,0				26,25	1
Semiconductor physics and applications	T. Heiser	15,75	15,75				31,5	1
Biology - chemistry	AL. Duchemin		5,25		14		19,25	1
CONTROL THEORY AND ELECTRONICS (9 ECTS)							119,25	
Analog electronics	V. Schuh, C. Lallement	14	10,5	12	5,25		41,75	3
Digital electronics	M. Madec	7	10,5	8			25,5	2
Dynamical Systems	I. Bara, L. Cuvillon, F. Nageotte, ...	10,5	8,75	4			23,25	2
Matlab	Y. Takakura, C. Heinrich			8,75			8,75	1
LabVIEW	J. Dellinger			20			20	2
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
		CM	TD	TP	CI	TE	Total	Coef
COMPUTER SCIENCE AND SIGNAL PROCESSING (7 ECTS)							101	
Numerical analysis	V. Maioli, J. Reh binder	12,25	1,0	16			29,25	2
Signal Processing	V. Mazet	14	14,0				28	2
Object-oriented programming		15,75		28			43,75	3
PHYSICS AND BIOLOGY (5 ECTS)							71	
Experimental physics	V. Schuh	5,25	1,75	24			31	2
Biophysics	S. Haacke	10,5	12,25				22,75	1
Genetic Diagnosis	M. Zeniou-Meyer, V. Bruban, ...	5,25		12			17,25	1
CONTROL THEORY AND ELECTRONICS (5 ECTS)							75,5	
Continuous Control	I. Bara, L. Cuvillon, F. Nageotte, ...	10,5	8,75	16			35,25	3
Microcontrollers	M. Madec	4,5		8			12,5	1
Instrumentation circuits	N. Dumas, M. Madec	5,25	1,75	12	8,75		27,75	2
LIFE SCIENCES AND HEALTH (4 ECTS)							50,75	
Anatomy, physiology	J.S. Raul, J. Garnon	0	21,0				21	1
Biomechanics	B. Gomes	15,75	14,0				29,75	1
PROJECT (3 ECTS)							106	
Research projects	V. Schuh		6,0			100	106	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)							41	
Discover the basics of entrepreneurship	C. Bournique	3,5	10,5				14	R
Epistemology and construction of knowledge 1	C. Collet	21	6,0				6	R
							21	R

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**DIPLÔME D'INGÉNIEUR TECHNOLOGIES DE L'INFORMATION POUR LA
SANTÉ 2^e ANNÉE
Année universitaire 2025-2026
Option DTMI
Promotion 2027**

		CM	TD	TP	CI	TE	Total	Coef
MATHEMATICS AND SIGNAL (5 ECTS)							89	
Statistical hypothesis tests	F. Heitz, C. Meillier	5,25	8,0				13,25	1
Artificial intelligence and machine learning	A. Deleforge, P. Charbonnier, ...	12,25		7,5			19,75	2
Signal digital processing	Y. Takakura	10,5	10,5	7			28	3
Statistical signal processing	F. Heitz, C. Meillier, M. Moudoud	10,5	10,5	7			28	3
COMPUTER SCIENCE (5 ECTS)							78,75	
Image and vision software aspects	F. Nageotte, M. Chaari			16			16	1
Data base	F. Fabian	8,75		12			20,75	2
Android	G. Ebert	3,5			20		23,5	2
Design of embedded systems using FPGA	F. Dadouche	7	3,5	8	0		18,5	1
BIOMECHANICS AND NUMERICAL APPROACH (4 ECTS)							71,25	
Biomechanics and rheology	S. Chatelin	24,5					24,5	1
Finite element methods	B. Gomes, N. Dumas	8,75	3,5	8			20,25	1
Numerical biomechanics	D. Baumgartner	10,5			16		26,5	1
TECHNOLOGIES AND PHYSICS FOR HEALTHCARE (4 ECTS)							77,5	
Physics of medical imaging	E. Breton, H. Salehi, C. Blondet	10,5	10,5				21	1
Physics and photonics	H. Salehi, W. Uhring, A. Nahas	5,25		12			17,25	1
Microfluidics and clean room	N. Dumas, D. Funfschilling, ...	8,75		12			20,75	1
Microsystems and biosystems	C. Lallement, N. Dumas	8,75	1,75	8			18,5	1
PROJECT (5 ECTS)							81,75	
Engineering project 1	H. Drira, H. Salehi	1,75	20,0			60	81,75	1
FOREIGN LANGUAGES (3 ECTS)							42	
English	Ruhlmann M., Piotto R.			20			20	N
German, spanish, japanese, or chinese				22			22	N
ECONOMIC AND SOCIAL SCIENCES (1 ECTS)							17,5	
Professional networking	F. Prégaldiny	1,5	12,0				13,5	R
Ecological transition workshop	V. Maioli		0,0	4			4	R
INTERNSHIP (3 ECTS)								N
Executing internship								N
		CM	TD	TP	CI	TE	Total	Coef
PROJECT (5 ECTS)							80	
Engineering project 2	H. Drira, H. Salehi		20,0			60	80	1
BIOLOGY AND HEALTHCARE (6 ECTS)							73,5	
Medical and surgical procedures	D. Baumgartner	17,5					17,5	2
Clinical translation	S. Gioux	8,75					8,75	1
Analysis of biological images	AL. Duchemin	19,25					19,25	2
Image processing	H. Drira, M. Olaoluwa	14		14			28	3
INNOVATIVE MEDICAL DIAGNOSES AND TREATMENTS (14 ECTS)							153	
Machine learning	H. Drira				21		21	1
Biomedical devices and HIS	A. Bergery, A. Pellegrino	24,5					24,5	1
Medical image processing	M. Mondino	5,25		6			11,25	1
Computer vision	F. Nageotte	16					16	1
Software tools for robotics	???				16		16	-
Mechatronics and haptics	B. Gomes	10,5	30,0				40,5	3
Optimization	H. Omran	14	1,75	8			23,75	2
FOREIGN LANGUAGES (3 ECTS)							42	
English	Ruhlmann M., Piotto R.		20,0				20	N
German, spanish, japanese, or chinese			22,0				22	N
ECONOMIC AND SOCIAL SCIENCES (2 ECTS)							29,75	
Financial management	I. Barth	10,5					10,5	1
Team management	C. Poloce	0	5,25				5,25	R
Career planning project		3,5	10,5				14	R

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SANTÉ 2^e ANNÉE
Année universitaire 2025-2026
Option TI
Promotion 2027**

		CM	TD	TP	CI	TE	Total	Coef
MATHEMATICS AND SIGNAL (5 ECTS)							89	
Statistical hypothesis tests	F. Heitz, C. Meillier	5,25	8,0				13,25	1
Artificial intelligence and machine learning	A. Deleforge, P. Charbonnier, ...	12,25		7,5			19,75	2
Signal digital processing	Y. Takakura	10,5	10,5	7			28	3
Statistical signal processing	F. Heitz, C. Meillier, M. Moudoud	10,5	10,5	7			28	3
COMPUTER SCIENCE (5 ECTS)							78,75	
Image and vision software aspects	F. Nageotte			16			16	1
Data base	F. Fabian	8,75		12			20,75	2
Android	G. Ebert	3,5			20		23,5	2
Design of embedded systems using FPGA	F. Dadouche	7	3,5	8	0		18,5	1
BIOMECHANICS AND NUMERICAL APPROACH (4 ECTS)							71,25	
Biomechanics and rheology	S. Chatelin	24,5					24,5	1
Finite element methods	B. Gomes, N. Dumas	8,75	3,5	8			20,25	1
Numerical biomechanics	D. Baumgartner	10,5			16		26,5	1
TECHNOLOGIES AND PHYSICS FOR HEALTHCARE (4 ECTS)							77,5	
Physics of medical imaging	E. Breton, H. Salehi	10,5	10,5				21	1
Physics and photonics	H. Salehi, W. Uhring, A. Nahas	5,25		12			17,25	1
Microfluidics and clean room	N. Dumas, ...	8,75		12			20,75	1
Microsystems and biosystems	C. Lallement, N. Dumas	8,75	1,75	8			18,5	1
PROJECT (5 ECTS)							81,75	
Engineering project 1	H. Drira, H. Salehi	1,75	20,0			60	81,75	1
FOREIGN LANGUAGES (3 ECTS)							42	
English	Ruhlmann M., Piotto R.			20			20	N
German, spanish, japanese, or chinese				22			22	N
ECONOMIC AND SOCIAL SCIENCES (1 ECTS)							17,5	
Professional networking	F. Prégaldiny	1,5	12,0				13,5	R
Ecological transition workshop	V. Maioli		0,0	4			4	R
INTERNSHIP (3 ECTS)								N
Executing internship								N
		CM	TD	TP	CI	TE	Total	Coef
PROJECT (5 ECTS)							80	
Engineering project 2	H. Drira, H. Salehi		20,0			60	80	1
BIOLOGY AND HEALTHCARE (6 ECTS)							73,5	
Medical and surgical procedures	D. Baumgartner	17,5					17,5	2
Clinical translation	S. Gioux	8,75					8,75	1
Analysis of biological images	AL. Duchemin	19,25					19,25	2
Image processing	H. Drira, M. Olaoluwa	14		14			28	3
EMBEDDED ELECTRONICS AND SYSTEMS (6 ECTS)							49,5	
Communication protocols	L. Werling, M. Madec	7		4			11	1
Circuits and systems	N. Dumas			8	10,5		18,5	2
Project of design of an embedded system	N. Dumas			20			20	2
INNOVATIVE THERAPEUTICS (8 ECTS)							84,5	
Nanosciences	F. Schwartz	10,5		16			26,5	2
Circuits and advanced systems and tools	O. Ersen	7					7	1
Physics of lasers and optical fibers	N. Dumas, C. Lallement	3,5		8	3,5		15	1
Computational biology	M. Madec, A. L. Duchemin	12,25		8			12,25	1
Physics of sensors	C. Lallement	3,5					11,5	1
		7	5,25				12,25	1
FOREIGN LANGUAGES (3 ECTS)							42	
English	Ruhlmann M., Piotto R.		20,0				20	N
German, spanish, japanese, or chinese			22,0				22	N
ECONOMIC AND SOCIAL SCIENCES (2 ECTS)							29,75	

		CM	TD	TP	CI	TE	Total	Coef
Financial management	I. Barth	10,5					10,5	1
Team management	C. Poloce	0	5,25				5,25	R
Career planning project		3,5	10,5				14	R

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SANTÉ 3^e ANNÉE
Année universitaire 2025-2026
Option Thérapeutiques innovantes
Promotion 2026**

		CM	TD	TP	CI	TE	Total	Coef
BIOLOGICAL INSTRUMENTATION (4 ECTS)							70,5	
Plasmonics and bioapplications : fundamentals	Y. Takakura, S. Lecler	8,75	3,5	4			16,25	1
Plasmonics and bioapplications : design of optical ...	Y. Takakura, N. Dumas	1,75		12			13,75	1
Impedance spectroscopy	J. Claudel (IJL), C. Lallement	3,5		8			11,5	1
Optical instrumentation for biomedical applications	A. Nahas	10,5					10,5	1
Cell, culture and instrumentation	S. Dumont, V. Da Costa	10,5	0,0	8			18,5	2
NANOSCIENCES & LAB ON CHIP (3 ECTS)							62,75	
Nanosciences	S. Begin, D. Mertz, O. Ersen	22,5					22,5	1,5
Biochips	C. Lallement, M. Madec, ...	3,5		16			19,5	2
Lab-on-chip	B. Gomes	8,75		12			20,75	1,5
BIOLOGICAL ENGINEERING PROJECT (6 ECTS)							125,25	
PharmaTech project	G. Zuber, N. Dumas			5,25		120	125,25	1
DESIGN OF HETEROGENEOUS INTEGRATED SYSTEMS FOR HEALTH (3 ECTS)							71	
Design with microelectronics CAD tools	F. Schwartz			28			28	1,5
Biosystems modeling	M. Madec	7		16			23	2
High-level modeling of systems	J.B. Kammerer	4		16			20	1,5
BIBLIOGRAPHY & CONFERENCES (1 ECTS)							21	
Therapeutic innovations : studies and applications	C. Lallement	3,5					3,5	-
Conferences, seminars, visits							0	-
Biosensors and industrial applications	F. Rufi (Burkert), K. Assouly ...	7					7	-
Neuroscience	S. Hemm	7					7	-
Synthetic biology	C. Rigouin (ESBS)	3,5					3,5	-
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)							92	
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
Bioethics	C. Lallement	20					20	2
INTERNSHIP (6 ECTS)								
Practical internship								N
		CM	TD	TP	CI	TE	Total	Coef
30 ECTS								
Defense								6
Report								6
Internship work								18

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