

DIPLOÔME 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
Second foreign langage (german, spanish, japanese, ...)				24,0			24	N
ECONOMIC AND SOCIAL SCIENCES	(3 ECTS)						26,75	
Interpersonal communication	A. Brouchet, C. Colmerauer	7					7	1
Sustainable development and corporate social ...	G. Burgart, M. Louys, V. Maioli	10,5	9,25				19,75	1
		CM	TD	TP	CI	TE	Total	Coef
COMPUTER SCIENCE AND SIGNAL PROCESSING	(7 ECTS)						101	
Numerical analysis	V. Maioli, J. Rehbinder	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. Gannon	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
Second foreign langage (german, spanish, japanese, ...)				24,0			24	N
ECONOMIC AND SOCIAL SCIENCES	(3 ECTS)						41	
Discover the basics of entrepreneurship	C. Bournique	3,5	10,5				14	1
Epistemology and construction of knowledge 1	C. Collet		6,0				6	1
		21					21	1

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DIPLOÔME 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							89,5	
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		8			20,25	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
Second foreign langage (german, spanish, japanese, ...)					22		22	N
ECONOMIC AND SOCIAL SCIENCES 1 ECTS							17,5	
Professional networking	F. Prégaldiny	1,5	12,0				13,5	1
Ecological transition workshop	V. Maioli	0,0		4			4	1
INTERNSHIP 3 ECTS								N
Executing internship								

		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	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
Second foreign langage (german, spanish, japanese, ...)			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	1
Career planning project		3,5	10,5				14	1

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

		CM	TD	TP	CI	TE	Total	Coef
MATHEMATICS AND SIGNAL 5 ECTS							89,5	
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		8			20,25	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
Second foreign language (german, spanish, japanese, ...)				22			22	N
ECONOMIC AND SOCIAL SCIENCES 1 ECTS							17,5	
Professional networking	F. Prégaldiny	1,5	12,0				13,5	1
Ecological transition workshop	V. Maioli	0,0		4			4	1
INTERNSHIP 3 ECTS								N
Executing internship								
		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		12,25					12,25	1
Physics of sensors	M. Madec, A. L. Duchemin	3,5		8			11,5	1
	C. Lallement	7	5,25				12,25	1
FOREIGN LANGUAGES 3 ECTS							42	
English	Ruhlmann M., Piotto R.		20,0				20	N
Second foreign language (german, spanish, japanese, ...)				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	1
Career planning project		3,5	10,5				14	1

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DIPLOÔME D'INGÉNIEUR TECHNOLOGIES DE L'INFORMATION POUR LA SANTÉ 3^e ANNÉE
Année universitaire 2025-2026
Option Diagnostics et traitements médicaux innovants
Promotion 2026

			CM	TD	TP	CI	TE	Total	Coef
MEDICAL IMAGING AND IMAGE PROCESSING	[6 ECTS]							77,25	
Inverse problems		Ch. Heinrich	10,5					10,5	1
Advanced medical image processing : modalities and ...	M. Mondino	21						21	2
Medical imaging technology	V. Schuh, J.-P. Dillenseger	12,25	3,5	11				26,75	2
Biomedical acoustics	J. Vappou	15			4			19	2
MEDICAL ROBOTICS	[6 ECTS]							90,5	
Robotics	H. Omran, B. Bayle	14			12			26	3
Medical robot vision	F. Nageotte	14						14	1
Robot registration	F. Nageotte	10,5			12			22,5	2
Computer assisted medical interventions	B. Bayle, B. Rosa, L. Rubbert, ...	28						28	3
MODELING OF LIVING SYSTEMS AND SIMULATION	[5 ECTS]							68,75	
Modeling of living systems	D. Baumgartner, B. Gomes	20						20	2
	D. Baumgartner				16			16	1
	H. Courtecuisse	8,75			24			32,75	3
FOREIGN LANGUAGES	[3 ECTS]							40	
English	Ruhlmann M., Piotto R.	20,0						20	N
		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]								N
Practical internship									
			CM	TD	TP	CI	TE	Total	Coef
[30 ECTS]									
Defense									6
Report									6
Internship work									18

N : niveau.

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DIPLOÔME D'INGÉNIEUR TECHNOLOGIES DE L'INFORMATION POUR LA 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
		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								N
Practical internship								N

	CM	TD	TP	CI	TE	Total	Coef
30 ECTS							
Defense							6
Report							6
Internship work							18

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