Cycle view of the study programme

		Bl	Or	Th	Pr	Au	Cr
Compulsory courses (B1 : 55Cr, B2 : 60Cr)							
LANG9999-1	*Mastery of the French language*	B1	Q2	30	-	-	**5**
ZENS0013-1	*Teaching methodologies and learning processes* - Annick FAGNANT, Charlène LEROY, Bertrand MONVILLE	B1	Q1	35	-	-	**5**
ZENS0015-1	*Professional identity, ethics, and managing critical incidents* - Davian BIETS, JeanFrançois GUILLAUME	B1	Q1	12	-	-	**2**
ZENS0014-1	*Class management, class environment and specific behavioural needs* - Ariane BAYE, Jérémy BONNI	B1	Q1	12	-	-	**2**
ZENS0037-1	*Teaching methodology for physics (part I)* - PierreXavier MARIQUE	B1	Q1	18	-	-	**3**
HULG9829-1	*Information and communication technologies for education (ICTE)* - Carole DELFORGE	B1	Q1	12	-	-	**2**
ZENS0019-1	*Media education* - Thomas JUNGBLUT	B1	Q2	12	-	-	**2**
ZENS0030-1	*Évaluation et différenciation* - *Partie pédagogique* - Marie COLLET, Annick FAGNANT, Deborah MEUNIER, Deborah MEUNIER, Pierre OUTERS, Paul PIETQUIN, Germain SIMONS - *Partie didactique*	B1	Q2 18 6	 - -	 - -		**4**
ZENS0054-1	*Introduction to research in education and teaching methodologies* - Marie HOUSEN, Mickaël IDRAC, Doriane JAEGERS, Pierre LERUSSE, PierreXavier MARIQUE, Grégory VOZ, Christophe WINKIN	B1	Q2	30	-	-	**5**
SSTG0174-1	*Internship in physics (part 1)* - *Observation internship and professional training workshop* - Hervé BERNARD, Annick FAGNANT, Géraldine GODET, Pierre LORIAUX, Laurent MULLENS BOXHO, Margaux NOIZET, Virginie OGER, Coline VINCENT - [10h Internship] - *Teaching internship A and professional training workshop* - PierreXavier MARIQUE, Christophe WINKIN - [8h Internship] - *Teaching internship B and professional training workshop* - Annick FAGNANT, PierreXavier MARIQUE, Christophe WINKIN - [12h Internship]	B1	TA - - -	 5 9 12	 [+] [+] [+]		**10**
PHYS0974-1	*Materials physics and biophysics* - Maryse HOEBEKE, Alejandro SILHANEK - Suppl : Bertrand DUPÉ	B1	Q1	30	-	-	**5**
PHYS0930-1	*Atomic physics* - Thierry BASTIN, François DAMANET, Peter SCHLAGHECK	B1	Q1	30	-	-	**5**
PHYS0975-1	*Introduction to soft matter and complex systems* - Nicolas VANDEWALLE	B1	Q1	30	-	-	**5**
ZENS0016-1	*The educational system and actors of change* - Ariane BAYE, COLLÉGIALITÉ, Géraldine GODET, N...	B2	TA	12	15	-	**3**
ZENS0017-1	*Organisation of a school establishment and collaborative working* - JeanFrançois GUILLAUME, Tulay TASKIN	B2	Q1	12	-	-	**2**
ZENS0096-1	*Physics and associated teaching methodology 1* - PierreXavier MARIQUE	B2	Q1	30	-	-	**5**
HULG0996-1	*Physics and associated teaching methodology 2* - Denis FONTAINE	B2	Q1	30	-	-	**5**
ZENS0237-1	*Teaching methodology for physics (part II)* - PierreXavier MARIQUE	B2	Q2	18	-	-	**3**
SSTG0274-1	*Internship in physics (part 2) and professional training workshop* - Hervé BERNARD, Annick FAGNANT, Géraldine GODET, Pierre LORIAUX, PierreXavier MARIQUE, Laurent MULLENS BOXHO, N..., Virginie OGER, Coline VINCENT, Christophe WINKIN - [40h Internship]	B2	Q2	-	21	[+]	**11**
ZENS0022-1	*The philosophy of education: ethics, neutrality, citizenship* -	B2	Q2	18	-	-	**3**

	BRAUSCH, Anne HERLA						
HULG9830-1	*Collegial facets of the profession* - Anne CAMPO, Dorothée JARDON, Charlène LEROY, Margaux NOIZET	B2	TA	24	-	-	**4**
HULG0887-1	*Didactic aspects of the transition with the common core: physics* - Floriane WEYER - [20h Internship]	B2	TA	24	-	[+]	**4**
SMEM0051-1	*Final thesis* - COLLÉGIALITÉ	B2	TA	-	-	-	**20**

Optional courses (B1 : 10Cr)

With the agreement of the board of examiners, select two courses from two different subject areas, for a total of 10 credits, from the following: (B1 : 10Cr)

Atomic and nuclear

PHYS0932-1	*Cold atoms and atomic clocks* - Thierry BASTIN	B1	Q2	20	10	-	**5**
PHYS2027-2	*Ultracold atoms and Bose-Enstein condensates* - Peter SCHLAGHECK	B1	Q2	25	-	-	**5**
PHYS0235-2	(pas organisé en 2026-2027) *Quantum optics* - John MARTIN	B1	Q2	20	10	-	**5**
PHYS0941-2	*Theoretical physics : Nuclei and particles* - JeanRené CUDELL	B1	Q1	30	-	-	**5**
PHYS3021-1	*Advanced quantum mechanics* - Thierry BASTIN, John MARTIN, Peter SCHLAGHECK	B1	Q1	30	-	-	**5**
PHYS0997-1	*Quantum information and computation* (english language) - François DAMANET	B1	Q1	30	-	-	**5**
PHYS3136-1	*Open quantum systems* (english language) - François DAMANET, John MARTIN - [10h Proj.]	B1	Q2	20	-	[+]	**5**
PHYS3138-1	*Nuclear physics: energy and materials* - David STRIVAY - [1d Vis.]	B1	Q2	25	4	[+]	**5**

Soft Materials / Statistical Physics

PHYS0969-1	*Introduction to biophotonics* - Laurent DREESEN	B1	Q2	20	10	-	**5**
PHYS0939-2	*Physics of non-linearities, chaos and fractals* - Nicolas VANDEWALLE	B1	Q2	15	15	-	**5**
PHYS3020-1	*Discrete element method and soft materials* - Eric OPSOMER - [15h Proj.]	B1	Q2	20	-	[+]	**5**
PHYS1987-1	*Matière active* - Eric OPSOMER, Nicolas VANDEWALLE	B1	Q2	30	-	-	**5**

Materials / Solid State

PHYS3003-1	*Physics of functional oxides* (english language) - Philippe GHOSEZ	B1	Q1	20	10	-	**5**
PHYS3023-1	*Physics of magnetic materials* (english language) - Eric BOUSQUET	B1	Q2	20	10	-	**5**
PHYS0981-1	*Quantum modelling of materials properties* (english language) - Philippe GHOSEZ	B1	Q1	20	10	-	**5**
PHYS0987-1	*Physics of materials for energy* (english language) - Ngoc Duy NGUYEN - [15h Proj.]	B1	Q1	20	-	[+]	**5**
PHYS0988-1	*Intrinsic and induced topological properties of matter* (english language) - Bertrand DUPÉ	B1	Q2	20	10	-	**5**

Quantum Physics and Relativity

PHYS2012-1	*Relativistic quantum mechanics and relativistic statistics* - Peter SCHLAGHECK	B1	Q1	20	5	-	**5**
SPAT0012-1	*General relativity* (english language) - Guillaume MAHLER	B1	Q1	30	10	-	**5**

Experimental Physics

PHYS0250-2	*Experimental statistical physics* - Stéphane DORBOLO	B1	Q2	10	20	-	**5**
PHYS3019-1	*Techniques of experimental physics* - Geoffroy LUMAY	B1	Q2	20	20	-	**5**

PHYS0943-1	*Spectroscopy of electronic paramagnetic resonance* - Maryse HOEBEKE	B1	Q2	15	15	-	**5**
PHYS0968-1	*Signal processing* - Alejandro SILHANEK - Suppl : Peter SCHLAGHECK	B1	Q2	25	20	-	**5**
PHYS3037-1	*Nanofabrication : principles and techniques* (english language) - Ngoc Duy NGUYEN, Alejandro SILHANEK	B1	Q2	25	20	-	**5**
PHYS0999-1	*Digital creation in sciences* - Roland BILLEN, Valentin FISCHER, JeanChristophe MONBALIU, Eric PARMENTIER, Michel RIGO, Nicolas VANDEWALLE - [30h Proj.]	B1	TA	10	-	[+]	**5**
Optics and Imaging							
PHYS0942-3	*Ionising radiations and imaging* - Alain SERET	B1	Q1	20	5	-	**5**
PHYS0938-1	*Physics and cultural heritage* - David STRIVAY	B1	Q1	20	12	-	**5**
PHYS0048-2	*Coherent and incoherent optics* (english language) - *Coherent optics and lasers applications* - Serge HABRAKEN - *Laser physics* - Serge HABRAKEN	B1	Q1 10 5	 15 5	 - -		**5**
PHYS0048-3	*Coherent and incoherent optics, Instrumental optics I* (english language) - Serge HABRAKEN	B1	Q1	20	15	-	**5**