

One-year master program

Compulsory courses

PHYS0240-2	<i>Biophysics</i> - Maryse HOEBEKE	30	15	-	5
PHYS0930-1	<i>Atomic Physics</i> - Thierry BASTIN	30	15	-	5
PHYS0931-1	<i>Data processing</i> - Pierre MAGAIN	15	30	-	5
SMEM0027-1	<i>Thesis</i> - COLLÉGIALITÉ	-	-	-	15

Optional courses

Choose, in agreement with the Physics Board of Studies, courses totalling 30 credits, amongst :

PHYS0932-1	<i>Cold atoms and atomic clocks</i> - Thierry BASTIN	20	-	-	3
PHYS0204-2	<i>Quantum Physics II</i> - Jean-Pierre GASPARD	15	5	-	3
AESS0241-1	<i>Introduction to physic didactics</i> - Maryse HOEBEKE	20	-	-	3
MECA0455-1	<i>Introduction to general relativity</i> - Yves DE ROP	15	5	-	3
PHYS0933-1	<i>Magnetism and nanomagnetism (English)</i> - Raphaël HERMANN	15	10	-	3
PHYS0934-1	<i>Coherent Optics and laser applications</i> - Serge HABRAKEN	15	20	-	3
PHYS0124-1	<i>Instrumental Optics I</i> - Serge HABRAKEN	20	15	-	3
PHYS0935-1	<i>Physcis around particle accelerators</i> - Henri-Pierre GARNIR - [4d FW]	10	-	[+]	3
PHYS0937-1	<i>Physical functional materials (English)</i> - Philippe GHOSEZ	20	10	-	3
PHYS0938-1	<i>Physics and cultural heritage</i> - David STRIVAY	15	5	-	3
PHYS0939-1	<i>Physics of non-linearities, chaos and fractals</i> - Nicolas VANDEWALLE	15	25	-	3
PHYS2012-2	<i>Relativistic quantum mechanics and relativistic statistics</i> - Joseph CUGNON	15	5	-	3
PHYS0250-2	<i>Experimental statistical physics I</i> - Stéphane DORBOLO	10	20	-	3
PHYS0254-1	<i>Experimental statistical physics II</i> - Stéphane DORBOLO	10	20	-	3
PHYS0941-2	<i>Nuclei and particles</i> - Jean-René CUDELL	30	-	-	3
PHYS0942-1	<i>Ionising radiations and imaging</i> - Alain SERET	15	5	-	3
PHYS0943-1	<i>Electronic paramagnetic resonance</i> - Maryse HOEBEKE	15	5	-	3
PHYS0944-1	<i>Vacuum techniques</i> - David STRIVAY	10	10	-	3
CHIM0202-2	<i>Physical chemistry</i> - Bernard LEYH	30	-	-	3
PHYS0232-1	<i>Further Applied Computing</i> - Henri-Pierre GARNIR	30	-	-	3
MECA0456-1	<i>Advance topics in general relativity</i> - Yves DE ROP	30	10	-	3
SPAT0047-1	<i>Quantum field theory</i> - Jean-René CUDELL	30	-	-	3
PHYS0945-1	<i>Complex fluids</i> - Nicolas VANDEWALLE	20	10	-	3
PHYS0235-1	<i>Quantum optics</i> - Thierry BASTIN	30	-	-	3
PHYS0946-1	<i>Physics of the GPS</i> - Henri-Pierre GARNIR	20	-	-	3
PHYS0947-1	<i>Large Scale Facilities in Condensed Matter Physics (en)</i> - Jean-Pierre GASPARD - [2d Vis.]	10	10	[+]	3
PHYS0948-1	<i>Microgravity</i> - Hervé CAPS, Nicolas VANDEWALLE - [3d FW]	10	20	[+]	6
PHYS0949-1	<i>Atomic structures modeling</i> - Pascal QUINET	10	10	-	3
PHYS0950-1	<i>Nanoparticles and low-dimensional systems (English)</i> - Jean-Yves RATY	20	10	-	3
PHYS0125-3	<i>Instrumental Optics II</i> - Serge HABRAKEN	25	30	-	6
[...]	Up to 9 credits can also be chosen in another study path or in another institution (if not chosen in the first year)				

Two-year master program

First Year

Compulsory courses

PHYS0240-2	<i>Biophysics</i> - Maryse HOEBEKE	30	15	-	5
PHYS0930-1	<i>Atomic Physics</i> - Thierry BASTIN	30	15	-	5
PHYS0931-1	<i>Data processing</i> - Pierre MAGAIN	15	30	-	5

Optional courses

Choose one option from the following :

Fundamental 1 Option

SSTG0016-1 *training course and personal homework* - Hervé CAPS - - - **6**

Choose, with the approval of the Physics Board of Studies, courses totalling 24 credits, from :

PHYS0932-1	<i>Cold atoms and atomic clocks</i> - Thierry BASTIN	20	-	-	3
PHYS0204-2	<i>Quantum Physics II</i> - Jean-Pierre GASPARD	15	5	-	3
AESS0241-1	<i>Introduction to physic didactics</i> - Maryse HOEBEKE	20	-	-	3
MECA0455-1	<i>Introduction to general relativity</i> - Yves DE ROP	15	5	-	3
PHYS0933-1	<i>Magnetism and nanomagnetism (English)</i> - Raphaël HERMANN	15	10	-	3
PHYS0934-1	<i>Coherent Optics and laser applications</i> - Serge HABRAKEN	15	20	-	3
PHYS0124-1	<i>Instrumental Optics I</i> - Serge HABRAKEN	20	15	-	3
PHYS0935-1	<i>Physics around particle accelerators</i> - Henri-Pierre GARNIR - [4d FW]	10	-	[+]	3
PHYS0937-1	<i>Physical functional materials (English)</i> - Philippe GHOSEZ	20	10	-	3
PHYS0938-1	<i>Physics and cultural heritage</i> - David STRIVAY	15	5	-	3
PHYS0939-1	<i>Physics of non-linearities, chaos and fractals</i> - Nicolas VANDEWALLE	15	25	-	3
PHYS2012-2	<i>Relativistic quantum mechanics and relativistic statistics</i> - Joseph CUGNON	15	5	-	3
PHYS0250-2	<i>Experimental statistical physics I</i> - Stéphane DORBOLO	10	20	-	3
PHYS0254-1	<i>Experimental statistical physics II</i> - Stéphane DORBOLO	10	20	-	3
PHYS0941-2	<i>Nuclei and particles</i> - Jean-René CUDELL	30	-	-	3
PHYS0942-1	<i>Ionising radiations and imaging</i> - Alain SERET	15	5	-	3
PHYS0943-1	<i>Electronic paramagnetic resonance</i> - Maryse HOEBEKE	15	5	-	3
PHYS0944-1	<i>Vacuum techniques</i> - David STRIVAY	10	10	-	3
[...]	Up to 9 credits can also be chosen in another study path or in another institution				

Option Medical Physics 1

PHYS0952-1	<i>Fundamental problems in physics related to radiology, radiotherapy and nuclear medicine</i>				6
	- <i>partim radiobiologie</i> - Christophe CHAMPION	10	-	-	
	- <i>partim dosimétrie</i> - Marie-Thérèse HOORNAERT	20	-	-	
	- <i>medical imaging</i> - Alain SERET	20	5	-	
RADP0141-1	<i>Radioprotection</i>				5
	- <i>Part a) radioprotection techniques and complements</i> - Véra PIRLET	30	15	-	
	- <i>Part b) legislation on radioprotection and the organisation of a radiotherapy, radiodiagnostic and nuclear medicine department</i> - Véra PIRLET	10	-	-	
RADI2001-1	<i>Radioprotection : Hygiene problems</i> - Roland HUSTINX	15	-	-	2
BIOL0802-1	<i>Cell and Tissue Biology</i> - Marc THIRY	40	45	-	7
PHYL0644-1	<i>Human Anatomy and Physiology</i> - Pierre BONNET	30	-	-	3
ANAT0222-1	<i>Elements of Radiology</i> - Robert DONDELINGER	10	5	-	2
STAT0722-1	<i>Introduction to medical statistics</i> - Christophe PHILLIPS	10	5	-	2
CHIM0620-1	<i>Radiopharmaceutical Chemistry</i> - André LUXEN	20	10	-	3

Choose a 2nd option among the following

Fundamental 2 Option

Requisite

"Option fondamentale 1"

Choose, in agreement with the Physics Board of Studies, courses totalling 15 credits

CHIM0202-2	<i>Physical chemistry</i> - Bernard LEYH	30	-	-	3
PHYS0232-1	<i>Further Applied Computing</i> - Henri-Pierre GARNIR	30	-	-	3
MECA0456-1	<i>Advance topics in general relativity</i> - Yves DE ROP	30	10	-	3
SPAT0047-1	<i>Quantum field theory</i> - Jean-René CUDELL	30	-	-	3
PHYS0945-1	<i>Complex fluids</i> - Nicolas VANDEWALLE	20	10	-	3
PHYS0235-1	<i>Quantum optics</i> - Thierry BASTIN	30	-	-	3
PHYS0946-1	<i>Physics of the GPS</i> - Henri-Pierre GARNIR	20	-	-	3
PHYS0947-1	<i>Large Scale Facilities in Condensed Matter Physics (en)</i> - Jean-Pierre GASPARD - [2d Vis.]	10	10	[+]	3
PHYS0948-1	<i>Microgravity</i> - Hervé CAPS, Nicolas VANDEWALLE - [3d FW]	10	20	[+]	6
PHYS0949-1	<i>Atomic structures modeling</i> - Pascal QUINET	10	10	-	3

PHYS0950-1	<i>Nanoparticles and low-dimensional systems (English)</i> - Jean-Yves RATY	20	10	-	3
PHYS0125-3	<i>Instrumental Optics II</i> - Serge HABRAKEN	25	30	-	6
[...]	Up to 6 credits can also be chosen in another path or in another institution				

Option Medical Physics 2

	<u>Requisite</u>	"Option physique médicale 1"			
SSTG0017-1	<i>Training in nuclear medicine</i> - Alain SERET	-	-	-	4
SSTG0018-1	<i>Training in radiology</i> - Françoise MALCHAIR	-	-	-	4
SSTG0019-1	<i>Training in radiotherapy</i> - Marie-Thérèse HOORNAERT	-	-	-	4
CHIM0621-2	<i>Production and application of radioelements</i> - Stéphane LUCAS - [3d FW]	15	-	[+]	3

Second year

Compulsory courses

SMEM0028-1	<i>Final thesis</i> - COLLÉGIALITÉ	-	-	-	15
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Optional courses

Choose one option from the following :

Fundamental 3 Option

Prerequisite "Option fondamentale 2"

Choose, in agreement with the Physics Board of Studies, courses not taken in the 1st year, for a total of 15 credits :

PHYS0936-2	<i>Materials Physics</i> - Philippe GHOSEZ, Jean-Yves RATY	30	20	-	6
PHYS0932-1	<i>Cold atoms and atomic clocks</i> - Thierry BASTIN	20	-	-	3
PHYS0204-2	<i>Quantum Physics II</i> - Jean-Pierre GASPARD	15	5	-	3
AESS0241-1	<i>Introduction to physic didactics</i> - Maryse HOEBEKE	20	-	-	3
MECA0455-1	<i>Introduction to general relativity</i> - Yves DE ROP	15	5	-	3
PHYS0933-1	<i>Magnetism and nanomagnetism (English)</i> - Raphaël HERMANN	15	10	-	4
PHYS0934-1	<i>Coherent Optics and laser applications</i> - Serge HABRAKEN	15	20	-	3
PHYS0124-1	<i>Instrumental Optics I</i> - Serge HABRAKEN	20	15	-	3
PHYS0935-1	<i>Physcis around particle accelerators</i> - Henri-Pierre GARNIR - [4d FW]	10	-	[+]	3
PHYS0937-1	<i>Physical functional materials (English)</i> - Philippe GHOSEZ	20	10	-	3
PHYS0938-1	<i>Physics and cultural heritage</i> - David STRIVAY	15	5	-	3
PHYS0939-1	<i>Physics of non-linearities, chaos and fractals</i> - Nicolas VANDEWALLE	15	25	-	3
PHYS2012-2	<i>Relativistic quantum mechanics and relativistic statistics</i> - Joseph CUGNON	15	5	-	3
PHYS0250-2	<i>Experimental statistical physics I</i> - Stéphane DORBOLO	10	20	-	3
PHYS0254-1	<i>Experimental statistical physics II</i> - Stéphane DORBOLO	10	20	-	3
PHYS0941-2	<i>Nuclei and particles</i> - Jean-René CUDELL	30	-	-	3
PHYS0942-1	<i>Ionising radiations and imaging</i> - Alain SERET	15	5	-	3
PHYS0943-1	<i>Electronic paramagnetic resonance</i> - Maryse HOEBEKE	15	5	-	3
PHYS0944-1	<i>Vacuum techniques</i> - David STRIVAY	10	10	-	3
[...]	Up to 9 credits can also be chosen in another study path or in another institution				

Option: Medical Physics 3

	<u>Prerequisite</u>	"Option Physique médicale 2"			
QUAL0722-1	<i>Safety and quality assurance</i> - Eric LENAERTS	5	10	-	2
RADL0442-1	<i>Radiobiology and radiopathologie elements</i> - Philippe DELVENNE	40	20	-	6
PHYS2024-1	<i>Transfer and co-registration of medical images</i> - Mohamed Ali BAHRI	15	-	-	2
PHYS2025-1	<i>Fundamental problems of physics relating to medical radiodiagnosics, radiotherapy and nuclear medicine: internal dosimetry of radiopharmaceutical compounds (English)</i> - Klaus BACHER	15	-	-	2
CHIM0621-2	<i>Production and application of radioelements</i> - Stéphane LUCAS - [3d FW]	15	-	[+]	3

Choose one of the following focus :

Research Focus

Compulsory courses

STRA0030-1	<i>Complement of final thesis</i> - COLLÉGIALITÉ	-	-	-	12
PHYS0963-1	<i>Seminars</i> - N...	-	-	-	3

Optional courses

Choose, in agreement with the Physics Board of Studies, courses not taken in the 1st year, for a total of 15 credits, amongst :

CHIM0202-2	<i>Physical chemistry</i> - Bernard LEYH	30	-	-	3
PHYS0232-1	<i>Further Applied Computing</i> - Henri-Pierre GARNIR	30	-	-	3
MECA0456-1	<i>Advance topics in general relativity</i> - Yves DE ROP	30	10	-	3
SPAT0047-1	<i>Quantum field theory</i> - Jean-René CUDELL	30	-	-	3
PHYS0945-1	<i>Complex fluids</i> - Nicolas VANDEWALLE	20	10	-	3
PHYS0235-1	<i>Quantum optics</i> - Thierry BASTIN	30	-	-	3
PHYS0946-1	<i>Physics of the GPS</i> - Henri-Pierre GARNIR	20	-	-	3
PHYS0947-1	<i>Large Scale Facilities in Condensed Matter Physics (en)</i> - Jean-Pierre GASPARD - [2d Vis.]	10	10	[+]	3
PHYS0948-1	<i>Microgravity</i> - Hervé CAPS, Nicolas VANDEWALLE - [3d FW]	10	20	[+]	6
PHYS0949-1	<i>Atomic structures modeling</i> - Pascal QUINET	10	10	-	3
PHYS0950-1	<i>Nanoparticles and low-dimensional systems (English)</i> - Jean-Yves RATY	20	10	-	3
PHYS0125-3	<i>Instrumental Optics II</i> - Serge HABRAKEN	25	30	-	6
[...]	Up to 6 credits can also be chosen in another study path or in another institution (if not chosen in the first year)				

Teaching focus

Compulsory courses

AESS0215-1	<i>Special didactics in physics (part I)</i> - <i>Course and exercises</i> - Maryse HOEBEKE - <i>Observation placements</i> - Maryse HOEBEKE - [10h Internship] - <i>Teaching placements</i> - Maryse HOEBEKE - [20h Internship] - <i>Reflexive practical work</i> - Maryse HOEBEKE	40	-	-	6
AESS0233-1	<i>Special didactics in physics (part II)</i> - <i>Course and exercises</i> - Maryse HOEBEKE - <i>Teaching placements</i> - Maryse HOEBEKE - [20h Internship] - <i>Reflexive practical work</i> - Maryse HOEBEKE - <i>School practical outside lectures</i> - Maryse HOEBEKE	35	-	-	9
AESS0202-1	<i>General didactics: courses and exercises; observation placements; reflexive practices</i> - Jean-Luc GILLES - [10h Internship]	30	10	[+]	4
AESS0246-1	<i>Analysis of scholastic institutions and key-players, educational policies</i> - Jacqueline BECKERS	15	-	-	1
AESS0004-1	<i>Media education</i> - Geneviève VAN CAUWENBERGE	15	-	-	1
AESS0248-1	<i>Elements of sociology of education</i> - Jean-François GUILLAUME	10	-	-	1
AESS0247-1	<i>Views on cultural diversity</i> - Jérôme JAMIN	10	-	-	1
AESS0140-1	<i>Professional ethics and training to neutrality and citizenship</i> - Véronique DORTU	25	-	-	2
AESS0143-1	<i>Educational Psychology of adolescents and young adults</i> - Dieudonné LECLERCQ	15	-	-	2
AESS0249-1	<i>Interdisciplinary seminar</i> - Nicolas LECLERCQ	15	-	-	1
AESS0142-1	<i>Seminar on prevention and management of difficult scholastic situations</i> - Jocelyne ROBERT	15	-	-	2

Professional Focus in Medical Radiological Physics

Compulsory courses

PHYS0954-2	<i>Fundamental problems in physics related to radiology, radiotherapy and nuclear medicine</i> - <i>Applications et techniques spéciales en radiothérapie</i> - Marie-Thérèse HOORNAERT	35	-	-	12
	- <i>Applications et techniques spéciales en radiodiagnostic</i> - H. BOSMANS (KUL)	15	-	-	
	- <i>Special applications and techniques in nuclear medicine</i> - Claire BERNARD, Roland HUSTINX, Alain SERET	20	-	-	

