Cycle view of the study programme

		Bl	Or	Th	Pr	Au	Cr

Notice : The FAMEais Masters replaces the FAME+ Master within the same consortium: ULiège will host students from the first FAMEias cohort from the 2023¿2024 academic year, while the last FAME+ students will graduate at the end of the 2022¿2023 academic year. Within the FAMEais Masters, the course programme offered by ULiège is aimed at students who have acquired the first 60 credits within a partner university.

Compulsory courses (B1 : 15Cr, B2 : 18Cr)

PHYS0974-1	*Materials physics and biophysics* - Maryse HOEBEKE, Alejandro SILHANEK	B1	Q1	30	-	-	**5**
PHYS0930-1	*Atomic physics* - Thierry BASTIN, Peter SCHLAGHECK	B1	Q1	30	-	-	**5**
PHYS0975-1	*Introduction to soft matter and complex systems* - Nicolas VANDEWALLE	B1	Q1	30	-	-	**5**
SMEM0028-1	*Final thesis* - COLLÉGIALITÉ	B2	TA	-	-	-	**18**

Optional courses (B1 : 45Cr, B2 : 42Cr)

In agreement with the Jury, choose a subject among : (B1 : 45Cr, B2 : 12Cr)

Basic course (B1 : 45Cr, B2 : 12Cr)

SSTG0016-1	*Training sessions and personal work* (english language) - COLLÉGIALITÉ, ISLV	B1	Q2	15	45	-	**5**
PHYS0983-1	*Seminars in advanced physics I* (english language) - *Materials physics and biophysics* - COLLÉGIALITÉ - *Atomic physics* - COLLÉGIALITÉ - *Physics of soft matter and complex systems* - COLLÉGIALITÉ	B1	TA 10 10 10	 - - -	 - - -		**4**
PHYS0984-1	*Seminars in advanced physics II* (english language) - *Materials physics and biophysics* - COLLÉGIALITÉ - *Atomic physics* - COLLÉGIALITÉ - *Physics of soft matter and complex systems* - COLLÉGIALITÉ **Prerequisite :** PHYS0983-1 - Séminaires de Physique avancée I	B2	TA 10 10 10	 - - -	 - - -		**4**

Choose courses in agreement with the jury for a total of 44 credits from among: (B1 : 36Cr, B2 : 8Cr)

Atomic and nuclear

PHYS0932-1	*Cold atoms and atomic clocks* - Thierry BASTIN **Corequisite :** PHYS0930-1 - Physique atomique	-	Q2	20	10	-	**4**
PHYS2027-2	*Ultracold atoms and Bose-Enstein condensates* - Peter SCHLAGHECK **Corequisite :** PHYS3021-1 - Mécanique quantique avancée PHYS0930-1 - Physique atomique	-	Q2	25	-	-	**4**
PHYS0235-2	*Quantum optics* - John MARTIN **Corequisite :** PHYS3021-1 - Mécanique quantique avancée PHYS0930-1 - Physique atomique	-	Q2	20	10	-	**4**
PHYS0949-1	*Atomic structures modelling* - Pascal QUINET **Corequisite :** PHYS0930-1 - Physique atomique	-	Q2	10	10	-	**4**
PHYS0941-2	*Theoretical physics : Nuclei and particles* - JeanRené CUDELL	-	Q1	30	-	-	**4**
PHYS3021-1	*Advanced quantum mechanics* - Thierry BASTIN, John MARTIN, Peter SCHLAGHECK	-	Q1	30	-	-	**4**
PHYS0997-1	*Quantum information and computation* (english language) -	-	Q1	30	-	-	**4**

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Soft Materials / Statistical Physics

PHYS0969-1	*Introduction to biophotonics* - Laurent DREESEN	-	Q2	20	10	-	**4**
PHYS0939-2	*Physics of non-linearities, chaos and fractals* - Nicolas VANDEWALLE **Corequisite :** PHYS0975-1 - Introduction à la matière molle et aux systèmes complexes	-	Q2	15	15	-	**4**
PHYS3020-1	*Discrete element method and soft materials* - Eric OPSOMER	-	Q2	15	15	-	**4**
PHYS0948-1	*Microgravity* - Nicolas VANDEWALLE - [3d FW] **Corequisite :** PHYS0975-1 - Introduction à la matière molle et aux systèmes complexes	B2	Q2	10	20	[+]	**4**

Materials / Solid State

PHYS3003-1	*Physics of functional oxides* (english language) - Philippe GHOSEZ **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q1	20	10	-	**4**
PHYS0980-1	(pas organisé en 2023-2024) *Spectroscopy of materials* (english language) **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q1	20	10	-	**4**
PHYS3004-1	*Physics of nanomaterials* (english language) - JeanYves RATY **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q1	20	10	-	**4**
PHYS0982-1	*Physics of semiconductors* (english language) - Ngoc Duy NGUYEN **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q1	15	-	-	**2**
PHYS3023-1	*Physics of magnetic materials* (english language) - Eric BOUSQUET **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q2	20	10	-	**4**
PHYS0981-1	*Quantum modelling of materials properties* (english language) - Philippe GHOSEZ, Matthieu VERSTRAETE **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q1	20	10	-	**4**
CHIM0202-2	*Physical Chemistry* - Christian DAMBLON, Bernard LEYH	-	Q2	30	-	-	**4**
PHYS0987-1	*Physics of materials for energy* (english language) - Philippe GHOSEZ, Ngoc Duy NGUYEN	-	Q1	30	-	-	**4**
PHYS0988-1	*Intrinsic and induced topological properties of matter* (english language) - Bertrand DUPÉ	-	Q2	20	10	-	**4**
PHYS0998-1	*Physics of superconductors* (english language) - Alejandro SILHANEK	-	Q2	15	-	-	**2**

Quantum Physics and Relativity

PHYS2012-1	*Relativistic quantum mechanics and relativistic statistics* - Peter SCHLAGHECK	-	Q1	20	5	-	**4**
SPAT0012-1	*General relativity* (english language) - Guillaume MAHLER	-	Q1	30	10	-	**4**

Experimental Physics

PHYS0250-2	*Experimental statistical physics* - Stéphane DORBOLO **Corequisite :** PHYS0975-1 - Introduction à la matière molle et aux systèmes complexes	-	Q2	10	20	-	**4**
PHYS3019-1	*Techniques of experimental physics* - Geoffroy LUMAY	-	Q2	20	20	-	**4**

PHYS0943-1	*Spectroscopy of electronic paramagnetic resonance* - Maryse HOEBEKE **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q2	15	15	-	**4**
PHYS0095-1	*The physics of accelerators and vacuum technologies* - David STRIVAY	-	Q2	10	10	-	**4**
PHYS0968-1	*Signal processing* - Alejandro SILHANEK	-	Q2	25	20	-	**4**
PHYS3037-1	*Nanofabrication : principles and techniques* (english language) - Ngoc Duy NGUYEN, Alejandro SILHANEK **Corequisite :** PHYS0974-1 - Physique des matériaux et biophysique	-	Q2	25	15	-	**4**
Optics and Imaging							
PHYS0942-3	*Ionising radiations and imaging* - Alain SERET	-	Q1	20	5	-	**4**
PHYS0938-1	*Physics and cultural heritage* - David STRIVAY	-	Q1	15	5	-	**4**
PHYS0048-2	*Coherent and incoherent optics* (english language) - *Coherent optics and lasers applications* - Serge HABRAKEN - *Laser physics* - Serge HABRAKEN	-	Q1 10 5	 15 5	 - -		**4**
PHYS0048-3	*Coherent and incoherent optics, Instrumental optics I* (english language) - Serge HABRAKEN	-	Q1	20	15	-	**4**
PHYS0128-1	*Magnetic Resonance Imaging - the Basics* (english language) - Laurent LAMALLE - [3d FW]	-	Q1	15	-	[+]	**2**
PHYS0125-3	*Instrumental optics II* (english language) - Serge HABRAKEN **Prerequisite :** PHYS0048-3 - Coherent and incoherent optics	B2	Q2	25	15	-	**4**
Applied physics							
INFO0939-1	*High performance scientific computing* (english language) - Christophe GEUZAINE - [20h Proj.]	-	Q1	30	15	[+]	**5**
MECA0470-1	*New methods in computational mechanics and physics* (english language) - Maarten ARNST, Eric BÉCHET, Ludovic NOELS - [40h Proj.]	-	Q2	20	-	[+]	**5**
ELEN0062-1	*Introduction to machine learning* (english language) - Pierre GEURTS, Louis WEHENKEL - [40h Proj.]	-	Q1	30	5	[+]	**6**
Didactics							
PHYS0979-1	*Conceptual approach to basic physics* - Hervé CAPS, Maryse HOEBEKE	-	Q1	30	-	-	**4**
AESS0241-1	*Introduction to physics didactics* - Maryse HOEBEKE	-	Q1	20	-	-	**4**
[...]	Up to 20 credits (or more, in agreement with the Jury) in the two blocks may also be chosen in another study field or institution						

Course Medical Physics (B1 : 45Cr, B2 : 12Cr)

PHYS0952-3	*Imaging through ionising radiation* - Alain SERET **Corequisite :** PHYS0931-1 - Traitement des données PHYS0989-1 - Radiobiology PHYS0990-1 - Dosimétrie	B1	Q1	25	5	-	**4**
PHYS0989-1	*Radiobiology* (english language) - Olivier VAN HOEY **Corequisite :** PHYS0952-3 - Imagerie par radiations ionisantes PHYS0990-1 - Dosimétrie	B1	Q2	10	-	-	**2**
PHYS0990-1	*Dosimetry* - Véronique BAART, Luca PELLEGRI	B1	Q2	20	-	-	**3**

	Corequisite : PHYS0952-3 - Imagerie par radiations ionisantes PHYS0989-1 - Radiobiology						
RADI2001-1	*Radioprotection: hygiene problems* - Nadia WITHOFS **Corequisite :** PHYS0952-3 - Imagerie par radiations ionisantes BIOL0007-1 - Biologie tissulaire RADP0141-1 - Radioprotection PHYS0989-1 - Radiobiology PHYS0990-1 - Dosimétrie	B1	Q1	15	-	-	**2**
BIOL0007-1	*Tissue biology* - Marc THIRY	B1	Q1	15	25	-	**4**
PHYL0644-1	*Human Anatomy and Physiology* - Pierre BONNET	B1	Q2	30	-	-	**3**
ANAT0222-1	*Elements of Radiology* - Paul MEUNIER, Luaba TSHIBANDA, Christophe VALKENBORGH	B1	Q1	10	5	-	**2**
CHIM0620-1	*Radiopharmaceutical Chemistry* - Thibault GENDRON	B1	Q1	20	10	-	**3**
PHYS0128-1	*Magnetic Resonance Imaging - the Basics* (english language) - Laurent LAMALLE - [3d FW] **Corequisite :** PHYS0930-1 - Physique atomique	B1	Q1	15	-	[+]	**2**
RADP0141-1	*Radioprotection* *- Part a) Radioprotection techniques and complements* - Véra PIRLET *- Part b) Legislation on radioprotection and the organisation of a radiotherapy, radiodiagnostic and nuclear medicine department* - Véra PIRLET	B1	Q2 30 10	 15 -	 - -		**6**
SSTG0041-1	*Placement in medical radiophysics* - Véronique BAART, Alain SERET - [12d Internship] **Corequisite :** PHYS0952-3 - Imagerie par radiations ionisantes PHYS0989-1 - Radiobiology PHYS0990-1 - Dosimétrie	B1	Q2	2	-	[+]	**7**
STAT0420-1	*Biostatistics 2* - AnneFrançoise DONNEAU	B1	Q1	15	15	-	**3**
PHYS0968-1	*Signal processing* - Alejandro SILHANEK	B1	Q2	25	20	-	**4**
QUAL0722-1	*Safety and quality assurance* (english language) - Edmond STERPIN **Prerequisite :** SSTG0041-1 - Stages en radiophysique médicale	B2	Q2	5	10	-	**2**
RADL0442-1	*Radiobiology and radiopathology elements* - Chantal HUMBLET, Philippe MARTINIVE **Prerequisite :** ANAT0222-1 - Eléments d'anatomie radiologique PHYL0644-1 - Anatomie et physiologie humaines BIOL0007-1 - Biologie tissulaire	B2	Q1	40	20	-	**6**
PHYS2024-1	*Transfer and co-registration of medical images* - Mohamed Ali BAHRI	B2	Q1	15	-	-	**2**
CHIM0621-2	*Production and application of radioelements* - Thibault GENDRON - [3d FW]	B2	Q2	15	-	[+]	**2**

Focus to be choosen (B2 : 1Nbr)

Research Focus (B2 : 30Cr)

STRA0030-1	*Final thesis complement* - COLLÉGIALITÉ	B2	TA	-	-	-	**14**

[...] With the jury¿s agreement, choose from the Uliège programme complementary courses which have not already been chosen for a total of 16 credits, with a maximum of 20 credits outside the course over the two blocks.

Teaching focus (B2 : 30Cr)

AESS1222-1	*Special didactics in physics : course and exercises (1st part)* - Hervé CAPS, Maryse HOEBEKE **Corequisite :** PHYS0979-1 - Approche conceptuelle de la physique de base	B2	Q1	40	-	-	**3**
AESS1223-1	*Special didactics in physics : placements (1st part)* - *Observation placements* - Hervé CAPS, Maryse HOEBEKE - [10h Internship] - *Teaching placements* - Hervé CAPS, Maryse HOEBEKE - [20h Internship] - *Reflexive practical work* - Hervé CAPS, Maryse HOEBEKE **Corequisite :** PHYS0979-1 - Approche conceptuelle de la physique de base	B2	Q1 - - -	 - - 5	 [+] [+] -		**3**
AESS2222-1	*Special didactics in physics : course and exercises (2nd part)* - Hervé CAPS, Maryse HOEBEKE	B2	Q2	35	-	-	**4**
AESS2223-1	*Special didactics in physics : placements (2nd part)* - *Teaching placements* - Hervé CAPS, Maryse HOEBEKE - [20h Internship] - *Reflexive practical work* - Hervé CAPS, Maryse HOEBEKE - *Extra-scholar teaching activities* - Hervé CAPS, Maryse HOEBEKE	B2	Q2 - - -	 - 5 10	 [+] - -		**5**
AESS0202-1	*General didactics: course and exercises ; observation placements ; reflexive practices* - Annick FAGNANT - [10h Internship]	B2	TA	30	10	[+]	**4**
AESS0246-1	*Analysis of scholastic institutions and educational policies* - Annelise VOISIN	B2	Q2	15	-	-	**1**
AESS0004-1	*Media education* - Jeremy HAMERS	B2	Q1	15	-	-	**1**
AESS0248-1	*Elements of sociology of education* - JeanFrançois GUILLAUME	B2	Q2	10	-	-	**1**
AESS0140-1	*Professional ethics and training to neutrality and citizenship* - Anne HERLA	B2	Q2	25	-	-	**2**
AESS0143-1	*Educational Psychology of adolescents and young adults* - Annick FAGNANT	B2	Q1	15	-	-	**2**
AESS0249-1	*Interdisciplinary seminar* - Annick FAGNANT	B2	Q2	15	-	-	**1**
AESS0339-1	*Understand and manage the diversity of public schools* - Ariane BAYE	B2	TA	10	15	-	**3**

Professional Focus in Medical Radiological Physics (B2 : 30Cr)

PHYS0991-1	*Special applications and techniques in radiotherapy* - Véronique BAART, Luca PELLEGRI **Prerequisite :** PHYS0989-1 - Radiobiology PHYS0990-1 - Dosimétrie	B2	Q1	35	-	-	**4**
PHYS0992-1	*Special applications and techniques in radiodiagnostic* (english language) - Hilde BOSMANS **Prerequisite :** PHYS0952-3 - Imagerie par radiations ionisantes PHYS0989-1 - Radiobiology	B2	Q1	15	-	-	**2**
PHYS0993-1	*Special applications and techniques in nuclear medicine* - Claire BERNARD, Roland HUSTINX, Alain SERET **Prerequisite :** PHYS0952-3 - Imagerie par radiations ionisantes PHYS0989-1 - Radiobiology	B2	Q1	20	-	-	**3**
PHYS0994-1	*Internal dosimetry of radiopharmaceutical compounds* - Claire BERNARD, Christophe MERCIER, Alain SERET	B2	Q1	8	4	-	**2**

	Prerequisite : PHYS0952-3 - Imagerie par radiations ionisantes PHYS0989-1 - Radiobiology						
PHYS0995-1	*Computerized dosimetry specialized in radiotherapy* (english language) - Edmond STERPIN **Prerequisite :** PHYS0989-1 - Radiobiology PHYS0990-1 - Dosimétrie	B2	Q1	15	-	-	**2**
PHYS0996-1	*2D & 3D tomographical reconstruction* - Alain SERET **Prerequisite :** PHYS0931-1 - Traitement des données PHYS0952-3 - Imagerie par radiations ionisantes	B2	Q1	10	-	-	**1**
SSTG0015-2	*Training* - COLLÉGIALITÉ - [3mois Internship] **Prerequisite :** PHYS0952-3 - Imagerie par radiations ionisantes PHYS0989-1 - Radiobiology PHYS0990-1 - Dosimétrie **Corequisite :** PHYS0991-1 - Applications et techniques spéciales en radiothérapie PHYS0992-1 - Applications et techniques spéciales en radiodiagnostic PHYS0993-1 - Applications et techniques spéciales en médecine nucléaire PHYS0994-1 - Dosimétrie interne des composés radiopharmaceutiques PHYS0995-1 - Computerized dosimetry specialized in radiotherapy PHYS0996-1 - Reconstruction tomographique 2D & 3D	B2	TA	-	-	[+]	**16**

Additional ECTS (max 15-60) Master in physics (120 ECTS)

Optional courses (B0 : 60Cr)

The update course, worth a maximum of 60 credits, will be determined based on students¿ prior training. (B0 : 60Cr)

[...] Between 15 and 60 ECTS of courses from "Bachelier en sciences physiques"