

At Louvain-la-Neuve - 180 credits - 3 years - Day schedule - In french

Dissertation/Graduation Project : **NO** - Internship : **NO**

Activities in English: **YES** - Activities in other languages : **NO**

Activities on other sites : **NO**

Main study domain : **Sciences**

Organized by: **Faculté des sciences (SC)**

Programme acronym: **phys1ba** - Francophone Certification Framework: 6

Table of contents

Introduction	2
Teaching profile	3
- Learning outcomes	3
- Programme structure	4
- Detailed programme	6
- Programme by subject	6
- List of available minors	8
- Course prerequisites	9
- The programme's courses and learning outcomes	9
- Programme type	9
- PHYS1BA - 1st annual unit	9
- PHYS1BA - 2nd annual unit	11
- PHYS1BA - 3rd annual unit	12
Information	13
- Admission	13
- Teaching method	15
- Evaluation	15
- Mobility and/or Internationalisation outlook	15
- Possible trainings at the end of the programme	15
- Contacts	15

PHYS1BA - Introduction

Introduction

PHYS1BA - Teaching profile

Learning outcomes

The programme aims at the acquisition of :

- Mastery of the basic concepts and fundamental laws of physics
- The specific approach of the physicist, namely that of comprehension, critical analysis and modelling the physical phenomena of nature, with the help of mathematical and numerical tools and experimental techniques proper to physics
- Professional qualities such as the capacity to analyse problems related to physics, abstraction and modelling; rigour in reasoning and expression; a critical mind; self-evaluation capacities and communication skills.

On successful completion of this programme, each student is able to :

1. Démontrer une connaissance approfondie des savoirs fondamentaux de la physique et maîtriser et utiliser les concepts de base des mathématiques.

1.1 Maîtriser de manière approfondie la physique générale, la physique théorique et mathématique, la physique microscopique, la physique macroscopique et statistique, la physique expérimentale et la simulation numérique en physique.

1.2 Connaître et comprendre un socle fondamental de mathématiques : analyse, algèbre, géométrie et statistique.

1.3 Reconnaître les concepts fondamentaux des théories scientifiques.

1.4 Appliquer des théories physiques et mathématiques à la résolution d'un problème.

1.5 Employer adéquatement les principes de base de la physique expérimentale: les mesures, leurs incertitudes, les instruments de mesure, le traitement basique de données par des outils informatiques.

1.6 Expliquer une méthode de mesure.

1.7 Modéliser des systèmes simples et prédire leur évolution par des méthodes numériques, y inclus des simulations informatisées.

1.8 Retracer l'évolution historique des concepts de base de la physique.

2. Démontrer des compétences méthodologiques, techniques et pratiques utiles à la résolution des problèmes en physique.

2.1 Justifier le choix des méthodes et des outils utilisés pour la résolution des problèmes connus en physique.

2.2 Utiliser adéquatement les instruments pour effectuer une mesure ou pour étudier un système physique.

2.3 Manipuler correctement des outils informatiques d'aide à la résolution de problèmes en physique.

2.4 Appliquer des outils de base pour modéliser des systèmes physiques simples et résoudre des problèmes connus dans les domaines fondamentaux de la physique.

3. Décrire et appliquer la démarche et le raisonnement scientifique.

3.1 Evaluer la simplicité, la clarté et la rigueur d'un raisonnement scientifique.

3.2 Construire un raisonnement physique et le formaliser.

3.3 Argumenter la validité d'un résultat scientifique.

3.4 Calculer les ordres de grandeur d'un problème en physique.

3.5 Reconnaître les analogies entre différents problèmes en physique.

3.6 Juger la pertinence d'une démarche scientifique et l'intérêt d'une théorie physique.

4. Apprendre et agir de manière autonome.

4.1 Rechercher, à l'aide de références pertinentes, des compléments d'informations concernant les concepts de base de la physique.

4.2 Lire et interpréter seul(e) ces informations.

4.3 Intégrer ces informations afin d'avoir une compréhension complète d'un concept.

4.4 Organiser et gérer son temps et son étude.

5. Travailler en équipe et collaborer avec des étudiants et des enseignants afin d'atteindre des objectifs communs et de produire des résultats.

5.1 Partager les savoirs et les méthodes.

5.2 Identifier les objectifs et responsabilités individuels et collectifs et travailler en conformité avec ces rôles.

5.3 S'insérer dans une équipe.

5.4 Reconnaître et respecter les points de vue et opinions des membres d'une équipe.

6. Communiquer en français et en anglais dans le cadre académique.

6.1 Lire et comprendre des textes scientifiques, en français et en anglais.

6.2 Suivre un exposé scientifique en anglais.

6.3 Présenter oralement un sujet d'une façon structurée en français.

6.4 Rédiger des rapports scientifiques de façon structurée.

6.4 Utiliser des outils médiatiques et informatiques variés pour communiquer et expliquer des concepts et des résultats scientifiques.

Programme structure

Available as a single programme in itself with minors, or as a reinforcement module in Physics, it comprises theoretical courses, exercises sessions, laboratory work and/or supervised study, and the accomplishment of a personal piece of work (project).

The first year is entirely in common with the bachelor's programme of Mathematical Science.

The possible choice of a minor is made as from the 3rd quadrimester. The minors on offer, at this stage, are : the minor in Mathematics (SC/MATH) and in Applied Sciences and Engineering : Applied Chemistry and Physics (FSA/MAPR).

The student may also choose another minor from the University programme list, on the basis of a project to be elaborated together with the study advisor.

Instead of doing a minor, the student may complete his programme with a complementary training programme in Physics for 30 credits, equally spread over the 2nd and 3rd years. This module comprises both compulsory and optional courses.

Language courses accompany the programme and are aimed at mastering scientific English.

Principal Subjects

The major in Physics comprises the elements listed below and totals 150 credits. The courses numbered must be followed in order ; the details of the prerequisites feature in the specifications of each of the courses.

General Physics (1-2-3) : 37 credits

- Actualities in Mathematics and Physics (2 credits)
- General Physics 1 (8 credits)
- General Physics 2 (8 credits)
- General Physics 3 (4 credits)
- Classical and Optical Electromagnetism (4 credits)
- Integrated Exercises (4 credits)
- Supervised tasks and personal project (7 credits)

Theoretical and Mathematical Physics (22 credits)

- Quantum Mechanics 1 (5 credits)
- Quantum Mechanics 2 (5 credits)
- Mathematical Methods in Physics (4 credits)
- Limited Relativity (4 credits)
- General Relativity (4 credits)

Atoms and Molecules, Nuclei, Particules (6 credits)

- Atoms and Molecules (3 credits)
- Elementary Nuclei and particules (3 credits)

Macroscopic and Statistical Physics (12 credits)

- Statistical and Thermodynamic Physics 1 (4 credits, including 1 credit in Chemistry)
- Statistical and Thermodynamic Physics 2 (4 credits, including 1 credit in Chemistry)
- Physics of fluids 1 (3 credits)
- Physics of fluids 2 (3 credits)

Astronomy and Geophysics (2 credits)

Experimental and Numerical Physics (15 credits)

- Numerical Calculations: Methods and Software Tools (7 credits)
- Computing and Numerical Methods (4 credits)
- Numerical Simulation in Physics (4 credits)

Mathematics (43 credits)

- Mathematical Analysis 1 (5 credits)
- Mathematical Analysis 2 (5 credits)
- Linear Algebra (8 credits)
- Geometry 1 (7 credits)
- Mathematical Methods in Classical Mechanics 1 (5 credits)

- Complex Analysis (4 credits)
- Mathematical Methods in Classical Mechanics 2 (4 credits)
- Probability Calculations and Statistical Analysis (5 credits)

Chemistry (2 credits, c.f. Statistical and Thermodynamic Physics 1 et 2)

Optional courses, including Chemistry (3 credits)

English (6 credits)

Philosophy (2 credits)

PHYS1BA Detailed programme

Programme by subject

Year

1 2 3

o Majeure (150 credits)

o Formation de base en physique (34 credits)

○ LPHYS1111	Mechanics 1	Jan Govaerts	45h+45h	9 Credits	1q	x		
○ LPHYS1112	Mechanics 2 and thermodynamics	Thierry Fichet Hugues Goosse (compensates Thierry Fichet) Vincent Lemaitre	52.5h +45h	10 Credits	2q	x		
○ LMAT1261	Mécanique lagrangienne et hamiltonienne 🟡	Christian Hagendorf Luc Haine	22.5h +30h	5 Credits	1q		x	
○ LPHYS1221	Electromagnetism 1 🟡	Jan Govaerts	52.5h +52.5h	10 Credits	1q		x	

o Formation avancée en physique (35 credits)

○ LPHYS1213	Physics of fluids 🟡	Eric Deleersnijder Vincent Legat	37.5h +30h	5 Credits	2q		x	
○ LPHYS1231	Special Relativity 🟡	Jean-Marc Gérard	30h+15h	5 Credits	2q		x	
○ LPHYS1241	Quantum Physics 1 🟡	Marco Drewes	30h+30h	5 Credits	2q		x	
○ LPHYS1322	Electromagnetism 2 🟡	Jan Govaerts	37.5h +22.5h	5 Credits	1q			x
○ LPHYS1332	General Relativity 🟡	Jean-Marc Gérard	30h +22.5h	4 Credits	1q			x
○ LPHYS1342	Quantum Physics 2 🟡	Christophe Ringeval	45h +22.5h	5 Credits	1q			x
○ LPHYS1343	Statistical physics 🟡	Christian Hagendorf Adrien Poncelet (compensates Christian Hagendorf)	45h+30h	6 Credits	2q			x

o Formation spécialisée en physique (12 credits)

○ LPHYS1344	subatomic, atomic and molecular physics 🟡	Clément Lauzin Vincent Lemaitre Xavier Urbain	45h+45h	6 Credits	2q			x
○ LPHYS1345	Solid state physics 🟡	Giacomo Bruno Christophe Delaere	30h +22.5h	4 Credits	2q			x
○ LPHYS1351	Personal project in physics 🟡	Thierry Fichet	0h+30h	2 Credits	1 + 2q			x

o Formation en mathématique (38 credits)

○ LMAT1121	Differential and integral calculus	Tom Claeys	30h+30h	5 Credits	1q	x		
○ LMAT1122	Mathematical analysis : differentiation	Augusto Ponce Augusto Ponce (compensates Jean Van Schaftingen) Jean Van Schaftingen	45h+45h	8 Credits	2q	x		
○ LMAT1131	Linear Algebra	Enrico Vitale	45h+45h	8 Credits	1q	x		
○ LMAT1141	Geometry I	Pascal Lambrechts	45h+30h	7 Credits	2q	x		

						Year		
						1	2	3
○ LMAT1222	Complex analysis 1	Luc Haine	30h+15h	5 Credits	2q	x		
○ LPHYS1202	Mathematical methods for physics	Claude Duhr Christian Hagendorf	30h+30h	5 Credits	1q	x		

o Formation en techniques numériques et instrumentales, en science des données et en informatique (15 credits)

○ LMAFY1101	Data exploration and introduction to statistical inference	Anouar El Ghouch	30h+30h	5 Credits	2q	x		
○ LPHYS1201	Computer Science and Numerical Methods	Giacomo Bruno	30h+45h	6 Credits	1q	x		
○ LPHYS1303	Numerical Simulation in Physics	Michel Crucifix Bernard Piroux	22.5h +30h	4 Credits	2q			x

o Formation en chimie (5 credits)

○ LCHM1112	General Chemistry	Yaroslav Filinchuk	30h +22.5h	5 Credits	1q	x		
------------	-------------------	--------------------	---------------	-----------	----	---	--	--

o Formation en langues et sciences humaines (11 credits)

o Anglais (7 credits)

○ LANG1861	English: reading and listening comprehension of scientific texts	Ahmed Adriouèche (coord.) Catherine Avery Fanny Desterbecq Thibaud Stevens	10h	3 Credits	2q	x		
○ LANG1862	English: reading and listening comprehension of scientific texts	Ahmed Adriouèche (coord.) Isabelle Druant Sandrine Meirlaen Anne-Julie Toubeau	30h	2 Credits	1q		x	
○ LANG1863	English for Students in Sciences (Upper-Intermediate level)	Ahmed Adriouèche (coord.) Catherine Avery (coord.) Sandrine Jacob (coord.) Sabrina Knorr Sandrine Meirlaen (coord.) Nevin Serbest Colleen Starrs Françoise Stas (coord.)	30h	2 Credits	1 ou 2q			x

o Sciences religieuses (2 credits)

L'étudiant-e choisit 2 crédits parmi les UE suivantes

⊗ LTECO2100	Questions of religious sciences: Biblical readings	Hans Ausloos	15h	2 Credits	1q		x	
⊗ LTECO2200	Questions of religious sciences: reflections about Christian faith	Dominique Martens	15h	2 Credits	2q		x	
⊗ LTECO2300	Questions of religious sciences: questions about ethics	Marcela Lobo Bustamante	15h	2 Credits	1q		x	

o Philosophie (2 credits)

○ LSC1120	Philosophy	Alexandre Guay Quentin Ruyant (compensates) Alexandre Guay	30h	2 Credits	1q			x
-----------	------------	--	-----	-----------	----	--	--	---

o Approfondissement ou Mineure (30 credits)

L'étudiant-e complète sa formation en choisissant soit l'approfondissement en sciences physiques, soit une mineure ou un approfondissement dans la liste proposée pour le bachelier en sciences physiques, pour un total de 30 crédits. Il/elle répartit les unités d'enseignement selon le modèle suivant : 10 crédits durant le 2e quadrimestre du 2e bloc annuel ; 10 ou 15 crédits durant le 1er quadrimestre du 3e bloc annuel et 10 ou 5 crédits durant le 2e quadrimestre du 3e bloc annuel.

○	Approfondissement ou Mineure (1e partie)			Credits			x	
○	Approfondissement ou Mineure (2e partie)			Credits				x

List of available minors

In addition to the major in Physics, the students have three other possibilities :

- either to opt for more in-depth studies in Physics (30 credits), with complements in the different sub-disciplines of Physics
- or to opt for a minor in Mathematics, Geography or Applied Sciences and Engineering : Applied Physics and Chemistry
- or to opt for another minor from the University programme list, on the basis of a project to be elaborated together with the study advisor.

- > **Additional module in Physics** [<https://www.uclouvain.be/en-prog-2018-app-lphys100p>]
- > **Approfondissement en statistique et sciences des données** [<https://www.uclouvain.be/en-prog-2018-app-lstat100p>]
- > **Minor in Computer Sciences** [<https://www.uclouvain.be/en-prog-2018-min-linfo100i>]
- > **Minor in Culture and Creation** [<https://www.uclouvain.be/en-prog-2018-min-lcucr100i>]
- > **Minor in Engineering Sciences : Applied Chemistry and Physics** [<https://www.uclouvain.be/en-prog-2018-min-lfyki100i>]
- > **Minor in Engineering Sciences : biomedical** [<https://www.uclouvain.be/en-prog-2018-min-lgbio100i>]
- > **Minor in Engineering Sciences: Applied Mathematics** [<https://www.uclouvain.be/en-prog-2018-min-lmap100i>]
- > **Minor in Engineering Sciences: Construction** [<https://www.uclouvain.be/en-prog-2018-min-lgce100i>]
- > **Minor in Engineering Sciences: Electricity** [<https://www.uclouvain.be/en-prog-2018-min-lelec100i>]
- > **Minor in Engineering Sciences: Mechanics** [<https://www.uclouvain.be/en-prog-2018-min-lmecca100i>]
- > **Minor in Gender Studies** [<https://www.uclouvain.be/en-prog-2018-min-lgenr100i>]
- > **Minor in Geography** [<https://www.uclouvain.be/en-prog-2018-min-lgeog100i>]
- > **Minor in Mathematics** [<https://www.uclouvain.be/en-prog-2018-min-lmath100i>]
- > **Minor in Scientific Culture** [<https://www.uclouvain.be/en-prog-2018-min-lcusc100i>]
- > **Minor in Sustainable Development (*)** [<https://www.uclouvain.be/en-prog-2018-min-ldvld100i>]

(*) *This program is the subject of access criteria*

Course prerequisites

A document entitled (nb: [not available](#) for this programme phys1ba) specifies the activities (course units - CU) with one or more prerequisite(s) within the study programme, that is the CU whose learning outcomes must have been certified and for which the credits must have been granted by the jury before the student is authorised to sign up for that activity.

These activities are identified in the study programme: their title is followed by a yellow square.

As the prerequisites are a requirement of enrolment, there are none within a year of a course.

The prerequisites are defined for the CUs for different years and therefore influence the order in which the student can enrol in the programme's CUs.

In addition, when the panel validates a student's individual programme at the beginning of the year, it ensures the consistency of the individual programme:

- It can change a prerequisite into a corequisite within a single year (to allow studies to be continued with an adequate annual load);
- It can require the student to combine enrolment in two separate CUs it considers necessary for educational purposes.

For more information, please consult [regulation of studies and exams](#).

The programme's courses and learning outcomes

For each UCLouvain training programme, a [reference framework of learning outcomes](#) specifies the competences expected of every graduate on completion of the programme. You can see the contribution of each teaching unit to the programme's reference framework of learning outcomes in the document "*In which teaching units are the competences and learning outcomes in the programme's reference framework developed and mastered by the student?*"

Programme type

PHYS1BA - 1ST ANNUAL UNIT

- Mandatory
- △ Courses not taught during 2018-2019
- ⊕ Periodic courses taught during 2018-2019
- ⊗ Optional
- ⊖ Periodic courses not taught during 2018-2019
- Activity with requisites

Click on the course title to see detailed informations (objectives, methods, evaluation...)

○ Majeure

○ Formation de base en physique

○ LPHYS1111	Mechanics 1	Jan Govaerts	45h+45h	9 Credits	1q
○ LPHYS1112	Mechanics 2 and thermodynamics	Thierry Fichet Hugues Goosse (compensates Thierry Fichet) Vincent Lemaitre	52.5h +45h	10 Credits	2q

○ Formation en mathématique

○ LMAT1121	Differential and integral calculus	Tom Claeys	30h+30h	5 Credits	1q
○ LMAT1122	Mathematical analysis : differentiation	Augusto Ponce Augusto Ponce (compensates Jean Van Schaftingen) Jean Van Schaftingen	45h+45h	8 Credits	2q
○ LMAT1131	Linear Algebra	Enrico Vitale	45h+45h	8 Credits	1q
○ LMAT1141	Geometry I	Pascal Lambrechts	45h+30h	7 Credits	2q

○ Formation en techniques numériques et instrumentales, en science des données et en informatique

○ LMAFY1101	Data exploration and introduction to statistical inference	Anouar El Ghouch	30h+30h	5 Credits	2q
-------------	--	------------------	---------	-----------	----

o Formation en chimie

o LCHM1112	General Chemistry	Yaroslav Filinchuk	30h +22.5h	5 Credits	1q
------------	-------------------	--------------------	---------------	-----------	----

o Formation en langues et sciences humaines

o Anglais

o LANG1861	English: reading and listening comprehension of scientific texts	Ahmed Adrioueche (coord.) Catherine Avery Fanny Desterbecq Thibaud Stevens	10h	3 Credits	2q
------------	--	--	-----	-----------	----

PHYS1BA - 2ND ANNUAL UNIT

- Mandatory
 △ Courses not taught during 2018-2019
 ⊕ Periodic courses taught during 2018-2019
 ✘ Optional
 ⊖ Periodic courses not taught during 2018-2019
 ■ Activity with requisites

Click on the course title to see detailed informations (objectives, methods, evaluation...)

○ Majeure

○ Formation de base en physique

○ LMAT1261	Mécanique lagrangienne et hamiltonienne ■	Christian Hagendorf Luc Haine	22.5h +30h	5 Credits	1q
○ LPHYS1221	Electromagnetism 1 ■	Jan Govaerts	52.5h +52.5h	10 Credits	1q

○ Formation avancée en physique

○ LPHYS1213	Physics of fluids ■	Eric Deleersnijder Vincent Legat	37.5h +30h	5 Credits	2q
○ LPHYS1231	Special Relativity ■	Jean-Marc Gérard	30h+15h	5 Credits	2q
○ LPHYS1241	Quantum Physics 1 ■	Marco Drewes	30h+30h	5 Credits	2q

○ Formation en mathématique

○ LMAT1222	Complex analysis 1 ■	Luc Haine	30h+15h	5 Credits	2q
○ LPHYS1202	Mathematical methods for physics ■	Claude Duhr Christian Hagendorf	30h+30h	5 Credits	1q

○ Formation en techniques numériques et instrumentales, en science des données et en informatique

○ LPHYS1201	Computer Science and Numerical Methods	Giacomo Bruno	30h+45h	6 Credits	1q
-------------	--	---------------	---------	-----------	----

○ Formation en langues et sciences humaines

○ Anglais

○ LANG1862	English: reading and listening comprehension of scientific texts ■	Ahmed Adriouche (coord.) Isabelle Druant Sandrine Meirlaen Anne-Julie Toubeau	30h	2 Credits	1q
------------	--	---	-----	-----------	----

○ Sciences religieuses

L'étudiant-e choisit 2 crédits parmi les UE suivantes

✘ LTECO2100	Questions of religious sciences: Biblical readings	Hans Ausloos	15h	2 Credits	1q
✘ LTECO2200	Questions of religious sciences: reflections about Christian faith	Dominique Martens	15h	2 Credits	2q
✘ LTECO2300	Questions of religious sciences: questions about ethics	Marcela Lobo Bustamante	15h	2 Credits	1q

○ Approfondissement ou Mineure

L'étudiant.e complète sa formation en choisissant soit l'approfondissement en sciences physiques, soit une mineure ou un approfondissement dans la liste proposée pour le bachelier en sciences physiques, pour un total de 30 crédits. Il/elle répartit les unités d'enseignement selon le modèle suivant : 10 crédits durant le 2e quadrimestre du 2e bloc annuel ; 10 ou 15 crédits durant le 1er quadrimestre du 3e bloc annuel et 10 ou 5 crédits durant le 2e quadrimestre du 3e bloc annuel.

○	Approfondissement ou Mineure (1e partie)			Credits	
---	--	--	--	---------	--

PHYS1BA - 3RD ANNUAL UNIT

- Mandatory
 △ Courses not taught during 2018-2019
 ⊕ Periodic courses taught during 2018-2019
 ✖ Optional
 ⊖ Periodic courses not taught during 2018-2019
 ■ Activity with requisites

Click on the course title to see detailed informations (objectives, methods, evaluation...)

○ Majeure

○ Formation avancée en physique

○ LPHYS1322	Electromagnetism 2 ■	Jan Govaerts	37.5h +22.5h	5 Credits	1q
○ LPHYS1332	General Relativity ■	Jean-Marc Gérard	30h +22.5h	4 Credits	1q
○ LPHYS1342	Quantum Physics 2 ■	Christophe Ringeval	45h +22.5h	5 Credits	1q
○ LPHYS1343	Statistical physics ■	Christian Hagendorf Adrien Poncelet (compensates Christian Hagendorf)	45h+30h	6 Credits	2q

○ Formation spécialisée en physique

○ LPHYS1344	subatomic, atomic and molecular physics ■	Clément Lauzin Vincent Lemaître Xavier Urbain	45h+45h	6 Credits	2q
○ LPHYS1345	Solid state physics ■	Giacomo Bruno Christophe Delaere	30h +22.5h	4 Credits	2q
○ LPHYS1351	Personal project in physics ■	Thierry Fichet	0h+30h	2 Credits	1 + 2q

○ Formation en techniques numériques et instrumentales, en science des données et en informatique

○ LPHYS1303	Numerical Simulation in Physics ■	Michel Crucifix Bernard Piraux	22.5h +30h	4 Credits	2q
-------------	---	-----------------------------------	---------------	-----------	----

○ Formation en langues et sciences humaines

○ Anglais

○ LANG1863	English for Students in Sciences (Upper-Intermediate level) ■	Ahmed Adriouche (coord.) Catherine Avery (coord.) Sandrine Jacob (coord.) Sabrina Knorr Sandrine Meirlaen (coord.) Nevin Serbest Colleen Starrs Françoise Stas (coord.)	30h	2 Credits	1 ou 2q
------------	---	--	-----	-----------	------------

○ Philosophie

○ LSC1120	Philosophy	Alexandre Guay Quentin Ruyant (compensates Alexandre Guay)	30h	2 Credits	1q
-----------	----------------------------	---	-----	-----------	----

○ Approfondissement ou Mineure

L'étudiant.e complète sa formation en choisissant soit l'approfondissement en sciences physiques, soit une mineure ou un approfondissement dans la liste proposée pour le bachelier en sciences physiques, pour un total de 30 crédits. Il/elle répartit les unités d'enseignement selon le modèle suivant : 10 crédits durant le 2e quadrimestre du 2e bloc annuel ; 10 ou 15 crédits durant le 1er quadrimestre du 3e bloc annuel et 10 ou 5 crédits durant le 2e quadrimestre du 3e bloc annuel.

○	Approfondissement ou Mineure (2e partie)			Credits	
---	--	--	--	---------	--

PHYS1BA - Information

Admission

Decree of 7 November 2013 defining the landscape of higher education and the academic organization of studies.

The admission requirements must be met prior to enrolment in the University.

In the event of the divergence between the different linguistic versions of the present conditions, the French version shall prevail

SUMMARY

- [General requirements](#)
- [Specific requirements](#)
- [Exam of knowledge of the French language](#)
- [Special requirements](#)

General requirements

Except as otherwise provided by other specific legal provisions, admission to undergraduate courses leading to the award of a Bachelor's degree will be granted to students with one of the following qualifications :

1. A Certificate of Upper Secondary Education issued during or after the 1993-1994 academic year by an establishment offering full-time secondary education or an adult education centre in the French Community of Belgium and, as the case may be, approved if it was issued by an educational institution before 1 January 2008 or affixed with the seal of the French Community if it was issued after this date, or an equivalent certificate awarded by the Examination Board of the French Community during or after 1994;
2. A Certificate of Upper Secondary Education issued no later than the end of the 1992-1993 academic year, along with official documentation attesting to the student's ability to pursue higher education for students applying for a full-length undergraduate degree programme;
3. A diploma awarded by a higher education institution within the French Community that confers an academic degree issued under the above-mentioned Decree, or a diploma awarded by a university or institution dispensing full-time higher education in accordance with earlier legislation;
4. A higher education certificate or diploma awarded by an adult education centre;
5. A pass certificate for one of the [entrance examinations](https://uclouvain.be/fr/etudier/inscriptions/examens-admission.html) (https://uclouvain.be/fr/etudier/inscriptions/examens-admission.html) organized by higher education institutions or by an examination board of the French Community; this document gives admission to studies in the sectors, fields or programmes indicated therein;
6. A diploma, certificate of studies or other qualification similar to those mentioned above, issued by the Flemish Community of Belgium (this qualification does not grant exemption from the [French language proficiency examination](https://uclouvain.be/en/study/inscriptions/language-requirements.html) (https://uclouvain.be/en/study/inscriptions/language-requirements.html)), the German Community of Belgium or the Royal Military Academy;
7. A diploma, certificate of studies or other qualification obtained abroad and deemed equivalent to the first four mentioned above by virtue of a law, decree, European directive or international convention;

Note:

Requests for equivalence must be submitted no later than 14 July 2018 to the Equivalence department ([Service des équivalences](#)) of the Ministry of Higher Education and Scientific Research of the French Community of Belgium.

The following two qualifications are automatically deemed equivalent to the Certificate of Upper Secondary Education (Certificat d'enseignement secondaire supérieur – CESS):

- European Baccalaureate issued by the Board of Governors of a European School,
- International Baccalaureate issued by the International Baccalaureate Office in Geneva.

These two qualifications do not, however, provide automatic exemption from the [French language proficiency examination](https://uclouvain.be/en/study/inscriptions/language-requirements.html) (https://uclouvain.be/en/study/inscriptions/language-requirements.html).

8. Official documentation attesting to a student's ability to pursue higher education (diplôme d'aptitude à accéder à l'enseignement supérieur - DAES), issued by the Examination Board of the French Community.

Specific requirements

Admission to undergraduate studies on the basis of accreditation of knowledge and skills obtained through professional or personal experience (Accreditation of Prior Experience)

Subject to the general requirements laid down by the authorities of the higher education institution, with the aim of admission to the undergraduate programme, the examination boards accredit the knowledge and skills that students have obtained through their professional or personal experience.

This experience must correspond to at least five years of documented activity, with years spent in higher education being partially taken into account: 60 credits are deemed equivalent to one year of experience, with a maximum of two years being counted. At the end of an assessment procedure organized by the authorities of the higher education institution, the Examination Board will decide whether a student has sufficient skills and knowledge to successfully pursue undergraduate studies.

After this assessment, the Examination Board will determine the additional courses and possible exemptions constituting the supplementary requirements for the student's admission.

Exam of knowledge of the French language

Anyone not demonstrating sufficient French language proficiency (<https://uclouvain.be/en/study/inscriptions/language-requirements.html>) will not be admitted to the first-year undergraduate examinations.

Special requirements

- Admission to **undergraduate studies in engineering: civil engineering and architect**

Pass certificate for the special entrance examination for undergraduate studies in engineering: civil engineering and architect (<https://uclouvain.be/fr/facultes/epl/examenadmission.html>).

Admission to these courses is always subject to students passing the special entrance examination. Contact the faculty office for the programme content and the examination arrangements.

- Admission to **undergraduate studies in veterinary medicine**

Admission to undergraduate studies in veterinary medicine is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents) (<https://uclouvain.be/en/study/inscriptions/etudes-contingentes.html>).

- Admission to **undergraduate studies in physiotherapy and rehabilitation**

Admission to undergraduate studies in physiotherapy and rehabilitation is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents). (<https://uclouvain.be/en/study/inscriptions/etudes-contingentes.html>)

- Admission to **undergraduate studies in psychology and education: speech and language therapy**

Admission to undergraduate studies in psychology and education: speech and language therapy is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents) (<https://uclouvain.be/en/study/inscriptions/etudes-contingentes.html>).

- Admission to **undergraduate studies in medicine and dental science**

Admission to undergraduate studies in medicine and dental science is governed by the Decree of 16 June 2006 regulating the number of students in certain higher education undergraduate courses (non-residents). (<https://uclouvain.be/en/study/inscriptions/etudes-contingentes.html>)

Note: students wishing to enrol for a **Bachelor's degree in Medicine** or a **Bachelor's degree in dental science** must first sit an aptitude test (fr) (<https://uclouvain.be/en/study/inscriptions/etudes-contingentes.html>).

Teaching method

En première année :

- Des séances sont organisées autour des questions de méthode de travail comme la manière d'aborder les différentes matières et la gestion du temps.
- Les monitorats permettent aux étudiants qui le souhaitent de faire le point sur les matières vues aux cours : les enseignants de chaque discipline répondent aux questions et réexpliquent les notions moins bien comprises.
- Des interrogations obligatoires intervenant dans la note finale de chaque matière sont organisées un mois après le début des cours au premier quadrimestre.

Pour les trois années :

- Les séances d'exercices et de laboratoire sont organisées en petits groupes et sont encadrés par des assistants. Certains travaux pratiques font l'objet de contrôles de connaissances en début de séance et de rapports à remettre en fin de séance.
- Des travaux personnels et/ou de groupe sont prévus pour certaines activités.
- Des sites internet sont associés à la plupart des cours : des informations utiles y sont déposées.

Evaluation

The evaluation methods comply with the regulations concerning studies and exams (<https://uclouvain.be/fr/decouvrir/rgee.html>). More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".

Différentes modalités sont mises en oeuvre pour l'évaluation des connaissances et des compétences acquises au cours de la formation; elles sont adaptées aux types de prestations : évaluation continue notamment pour les exercices pratiques, évaluation des travaux personnels et de groupe, évaluation globale (écrite et/ou orale) durant les sessions d'examens.

Mobility and/or Internationalisation outlook

Sauf cas exceptionnels, la mobilité internationale n'est recommandée que dans le cadre des programmes de master.

Possible trainings at the end of the programme

Positioning of the programme within the University cursus

The bachelor's degree in Physical Sciences entitles automatic access to the master's of Physical Sciences, orientated towards the domains of their applications (Medical Physics, Industrial Physics, Meteorology, Simulation Methods, etc.), towards research (doctorate) or towards teaching ("agrégation"), or towards the master's of Spatial Sciences (not organised at UCL).

Other studies accessible upon completion of the programme

Subject to the completion of an appropriate minor, the bachelor's degree entitles direct access to certain orientations of the master's of Mathematical Science and Applied Sciences and Engineering-Physical Engineering (possibly by means of an adapted programme).

Contacts

Attention, you are currently reading an archived page: below contact informations were for program study 2018-2019 only. To get current contact informations please got to [current program study site](#).

Curriculum Management

Entity

Structure entity

Denomination

Faculty

Sector

Acronym

Postal address

SST/SC/PHYS

(PHYS) (<https://uclouvain.be/repertoires/entites/phys>)

Faculty of Science (SC) (<https://uclouvain.be/repertoires/entites/sc>)

Sciences and Technology (SST) (<https://uclouvain.be/repertoires/entites/sst>)

PHYS

Chemin du Cyclotron 2 - bte L7.01.04

1348 Louvain-la-Neuve

Tel: [+32 \(0\) 10 47 32 94](tel:+32210473294) - Fax: [+32 \(0\) 10 47 30 68](tel:+32210473068)

<https://uclouvain.be/fr/facultes/sc/phys> (<https://uclouvain.be/fr/facultes/sc/phys>)

Web site

Academic supervisor: Thierry Fichet

Jury

- Vincent Lemaitre
- Xavier Urbain
- Christian Hagendorf

Useful Contact(s)

- Nathalie Micha
- Julie Genbrugge

Attention, you are currently reading an archived page: below contact informations were for program study 2018-2019 only. To get current contact informations please got to [current program study site](#).

