



## PHYS1BA - Introduction

### Introduction






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#### Introduction

The physicist possesses great capacities of reasoning and abstraction. He/she continually asks questions about the physical world








				Year		
				1	2	3
○ LPHYS1241	Quantum Physics 1	Marco Drewes	EB [q2] [30h+30h] [5 Credits] 		x	
○ LPHYS1322	Electromagnetism 2	Céline Degrande	EB [q1] [37.5h+22.5h] [5 Credits]  > English-friendly			x
○ LPHYS1332	General Relativity	Christophe Ringeval	EB [q1] [30h+22.5h] [4 Credits]  > English-friendly			x
○ LPHYS1342	Quantum Physics 2	Christophe Ringeval	EB [q1] [45h+22.5h] [5 Credits]  > English-friendly			x
○ LPHYS1343	Statistical physics	Christian Walmsley Hagendorf	EB [q2] [45h+30h] [6 Credits]  > English-friendly			x

○

Year

1 2 3

**O Religious sciences (2 credits)***The student chooses one teaching unit among*

⌘ LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	EX [q1] [15h] [2 Credits] 		x	
⌘ LTECO2200	Societies-cultures-religions : Human Questions	Régis Burnet	EX [q1] [15h] [2 Credits] 		x	
⌘ LTECO2300	Societies, cultures, religions : Ethical questions	Marcela Lobo Bustamante	EX [q1] [15h] [2 Credits] 		x	



## Course prerequisites

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The **table** below lists the activities (course units, or CUs) for which there are one or more prerequisites within the programme, i.e. the programme CU for which the learning outcomes must be certified and the corresponding credits awarded by the jury before registering for that CU.

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

### Prerequisites and student's annual programme

As the prerequisite is for CU registration purposes only, there are no prerequisites within a programme year. Prerequisites are defined between CUs of different years and therefore influence the order in which the student will be able to register for the programme's CUs.

In addition, when the jury validates a student's individual programme at the beginning of the year, it ensures its coherence, meaning that it may:

- require the student to combine registration in two separate CUs which it considers necessary from a pedagogical point of view.
- transform a prerequisite into a corequisite if the student is in the final year of a degree course.

For more information, please consult the [Academic Regulations and Procedures](https://uclouvain.be/fr/decouvrir/rgee.html) (<https://uclouvain.be/fr/decouvrir/rgee.html>).

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### # Prerequisites list

**LANG1862** "English: reading and listening comprehension of scientific texts" has prerequisite(s) LANG1861

- LANG1861 - English: reading and listening comprehension of scientific texts

## The programme's courses and learning outcomes

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For each UCLouvain training programme, a [reference framework of learning outcomes](#) specifies the skills expected of every graduate on completion of the programme. Course unit descriptions specify targeted learning outcomes, as well as the unit's contribution to reference framework of learning outcomes.

## Detailed programme per annual block

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### PHYS1BA - 1ST ANNUAL UNIT

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- Mandatory
  - ⊗ Optional
  - △ Not offered in 2023-2024
  - ⊙ Not offered in 2023-2024 but offered the following year
  - ⊕ Offered in 2023-2024 but not the following year
  - △ ⊕ Not offered in 2023-2024 or the following year
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**PHYS1BA - 2ND ANNUAL UNIT**

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- Mandatory
- ✘ Optional
- △ Not offered in 2023-2024
- ⊖ Not offered in 2023-2024 but offered the following year
- ⊕ Offered in 2023-2024 but not the following year
- △ ⊕ Not offered in 2023-2024 or the following year
- Activity with requisites
- 🌐 Open to incoming exchange students
- 🌐 Not open to incoming exchange students
- (FR) Teaching language (FR, EN, ES, NL, DE, ...)

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

**o Majeure**

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**o Basic training in physics**

● LMAT1261	Lagrangian and Hamiltonian mechanics	Christian Walmsley Hagendorf	
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**O Religious sciences**

*The student chooses one teaching unit among*

⌘ LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	FR
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**PHYS1BA - 3RD ANNUAL UNIT**

- Mandatory
- ⊗ Optional
- △ Not offered in 2023-2024
- ⊖ Not offered in 2023-2024 but offered the following year
- ⊕ Offered in 2023-2024 but not the following year
- △ ⊕ Not offered in 2023-2024 or the following year
- Activity with requisites
- 🌐 Open to incoming exchange students
- 🚫🌐 Not open to incoming exchange students
- (FR) Teaching language (FR, EN, ES, NL, DE, ...)

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

**o Majeure****o Advanced training in physics**

● LPHYS1322	<a href="#">Electromagnetism 2</a>	Céline Degrande	FR [q1] [37.5h +22.5h] [5 Credits] 🌐 > English- friendly
● LPHYS1332	<a href="#">General Relativity</a>	Christophe Ringeval	FR [q1] [30h +22.5h] [4 Credits] 🌐 > English- friendly
● LPHYS1342	<a href="#">Quantum Physics 2</a>	Christophe Ringeval	FR [q1] [45h +22.5h] [5 Credits] 🌐 > English- friendly
● LPHYS1343	<a href="#">Statistical physics</a>	Christian Walmsley Hagendorf	FR [q2] [45h +30h] [6 Credits] 🌐 > English- friendly

**o Specialized training in physics**

● LPHYS1344	<a href="#">Subatomic, atomic and molecular physics</a>	Christophe Delaere Matthieu Génévriez Clément Lauzin	FR [q2] [45h +45h] [6 Credits] 🌐
● LPHYS1345	<a href="#">Solid state physics</a>	Eduardo Cortina Gil	FR [q2] [30h +22.5h] [4 Credits] 🌐 > English- friendly
● LPHYS1351	<a href="#">Personal project in physics</a>	Michel Crucifix Matthieu Génévriez	FR [q1+q2] [0h +30h] [2 Credits] 🌐 > English- friendly

**o Training in digital and instrumental techniques, data science and computer science**

● LPHYS1303	<a href="#">Numerical Simulation in Physics</a>	Francesco Ragone	FR [q2] [22.5h +30h] [4 Credits] 🌐 > English- friendly
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**o Training in languages and human sciences****o English**

<p>● LANG1863</p>	<p>English for Students in Sciences (Upper-Intermediate level)</p>	<p>Ahmed Adriouche (coord.) Catherine Avery (coord.) Amandine Dumont (coord.) Sandrine Jacob (coord.) Nevin Serbest Florence Simon Françoise Stas (coord.)</p>	<p>EN [q1 or q2] [30h 0 1</p>	<p>34.432999 83.655998 cm -1 0 0 -1 0 0 cm 0</p>
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## PHYS1BA - Information

### Access Requirements

*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 access requirements](#)
- [Specific access requirements](#)
- [Access based on validation of professional experience](#)
- [Special requirements to access some programmes](#)

### General access 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, 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 to the Equivalence department ([Service des équivalences](#)) of the Ministry of Higher Education and Scientific Research of the French Community of Belgium in compliance with the official deadline.

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.

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 access requirements

- Access to bachelor programmes for candidates of nationality outside the European Union who are not assimilated to Belgian nationals is subject to the following criteria:
  - not have obtained a secondary education diploma for more than 3 years maximum. Example: for an admission application for the academic year 2023-2024, you must have obtained your diploma during the academic years 2020-2021, 2021-2022 ou 2022-2023. In the French Community of Belgium, the academic year runs from September 14 to September 13
  - not already hold an undergraduate degree
- Candidates, whatever their nationality, with a secondary school diploma **from a country outside the European Union**, must have obtained an average of 13/20 minimum or, failing that, have obtained this average, have passed one year of study in Belgium (for

- For any secondary school diploma **from a European Union country**, the admission request must contain the equivalence of your







