

**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: **Faculty of Science (SC)**

Programme acronym: **PHYS1BA** - Francophone Certification Framework: 6

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## 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



Communicate in French and English as part of his academic training.

6.1 Read and understand scientific texts in French and English (C1 CEFR level).

6.2 Follow a scientific presentation in English (level B2 CEFR).

6.3 Orally present a topic in a structured way in French and / or English.

6.4 Write scientific reports in a structured way and cite the sources correctly.

6.5 Use a variety of media and computer tools to communicate and explain scientific concepts and results.

## Programme structure

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The programme leading to the Bachelor degree in physics consists of (1) a general training called major in physics (150 credits) and (2) either an additional module in physics (30 credits) or a minor or additional module in another discipline (30 credits). It is spread over three annual units of 60 credits each and allows you to address the main topics of today's physics and acquire the knowledge and skills necessary to start a Master [120] in physics. It includes many practicals (exercises, laboratories and personal or group projects) and gives you the opportunity to carry out a research work.

The programme of the major in physics includes:

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## List of available minors

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In addition to the major in physics, the student has three possibilities :

- opting for the additional module in physics ;
- opting for a minor or additional module offered by
  - the Faculty of Sciences :
    - Minor in mathematics
    - Minor in geography
    - Minor in scientific culture
    - Additional module in statistics and data sciences

- the Louvain School of Engineering :

*NB : The choice of such a minor must be done in concertation with the study advisers of the School of Physics and Louvain School of Engineering*

- • Minor in computer sciences
  - Minor in engineering sciences : applied mathematics
  - Minor in engineering sciences : mechanics
  - Minor in engineering sciences : applied chemistry and physics
  - Minor in engineering sciences : electricity
  - Minor in engineering sciences : biomedical
  - Minor in engineering sciences: construction
- opting for one of the following minors proposed by the Sector of Human Sciences :
    - Minor in culture and creation
    - Minor in sustainable development (*this program is subject to access criteria*)
    - Minor in the study of the kind

- > [Minor in Culture and Creation](#) [ en-prog-2024-mincucrea ]
- > [Minor in Scientific Culture](#) [ en-prog-2024-mincults ]
- > [Minor : Issues of Transition and Sustainable Development \(\\*\)](#) [ en-prog-2024-mindd ]
- > [Minor in Gender Studies](#) [ en-prog-2024-mingenre ]
- > [Minor in Geography](#) [ en-prog-2024-mingeog ]
- > [Minor in Computer Sciences](#) [ en-prog-2024-minsinf ]
- > [Additionnal module in Physics](#) [ en-prog-2024-apphys ]
- > [Approfondissement en statistique et sciences des données](#) [ en-prog-2024-appstat ]
- > [Minor in numerical technologies and society](#) [ en-prog-2024-minstic ]
- > [Minor in Mechanics](#) [ en-prog-2024-lminomeca ]
- > [Minor in Construction](#) [ en-prog-2024-lminogce ]
- > [Minor in Electricity](#) [ en-prog-2024-lminoelec ]
- > [Minor in Applied Chemistry and Physics](#) [ en-prog-2024-minofyki ]
- > [Minor in Applied Mathematics](#) [ en-prog-2024-lminomap ]
- > [Minor in Mathematics](#) [ en-prog-2024-minmath ]
- > [Mineure Polytechnique](#) [ en-prog-2024-minpoly ]

(\*) *This programme is the subject of access criteria*

## 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](#).

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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 2024-2025
  - ⊙ Not offered in 2024-2025 but offered the following year
  - ⊕ Offered in 2024-2025 but not the following year
  - △ ⊕ Not offered in 2024-2025 or the following year
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### o Training in mathematics

o LMAT1121	Differential and integral calculus	Cécile Coyette (compensates Tom Claeys)	ES [q1] [30h +30h] [5 Credits]
o LMAT1122	Mathematical analysis : differentiation	Augusto Ponce	ES [q2] [45h +45h] [8 Credits]
o LMAT1131	Linear Algebra	Marino Gran	ES [q1] [45h +45h] [8 Credits]
o LMAT1141	Geometry I	Pascal Lambrechts	ES [q2] [45h +30h] [7 Credits]

### o Training in digital and instrumental techniques, science and computer science

o LMAFY1101	Data exploration and introduction to statistical inference	Anouar El Ghouch	ES [q2] [30h +30h] [5 Credits]
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### o Training in chemistry

o LCHM1112	General Chemistry	Yaroslav Filinchuk	ES [q1] [30h +22.5h] [5 Credits]
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### o Training in languages and human sciences

#### o English









## 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](#) 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 Tertiary Certificate of Upper Secondary Education or an adult Education Diploma, certificate of studies.

- For any secondary school diploma **from a European Union country**, the admission request must contain the equivalence of your diploma or, at the very least, proof of the filing of the equivalence request with the Wallonia-Brussels Federation (French Community of Belgium). For any information relating to obtaining an equivalence, please refer to [the following site](#).
- For any secondary school diploma **from a country outside the European Union**, the admission application must contain the [equivalence of your diploma](#) issued by the Wallonia-Brussels Federation (French Community of Belgium). If you have a restrictive equivalence for the programme of your choice, in addition of it, you **must** have either the [DAES](#) or a certificate of successful completion of the [examination giving access to 1<sup>st</sup> cycle studies](#) when you submit your application

## Access based on validation of professional experience

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.

## Special requirements to access some programmes

- 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](#).

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 \(non-residents\)](#).

- 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 \(non-residents\)](#).





Acronym

PHYS

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

Academic supervisor: [Vincent Lemaître](#)

Jury

- President: [Christian Walmsley Hagendorf](#)
- Secretary: [Christophe Delaere](#)
- Study advisor: [Clément Lauzin](#)

Useful Contact(s)

- Administrative manager for the student's annual program: [Nathalie Micha](#)

