UCLouvain

CHIM1BA

2024 - 2025

Bachelor in Chemistry

At Louvain-la-Neuve - 180 credits - 3 years - Day schedule - In French
Dissertation/Graduation Project : **NO** - Internship : **NO**
Activities in English: **NO** - Activities in other languages : **NO**
Activities on other sites : **NO**
Main study domain : **Sciences**
Organized by: **Faculty of Science (SC)**
Programme acronym:

CHIM1BA - Introduction

Introduction

CHIM1BA - Teaching profile

Learning outcomes

The programme aims at :

- the acquisition of general knowledge and skills in the principal subjects of the Exact Sciences (Biology, Chemistry, Mathematics and Physics) and a deepening of the basic knowledge and skills in the various domains of Chemistry
- the acquisition of rigour in reasoning and in written and oral expression, a critical spirit and the capacity to solve scientific problems, particularly those relevant to the disciplines of Chemistry
- the acquisition of transversal skills (Human Sciences, computing, management, English, written and oral communication), with a view to enhancing the generalist character of the training programme as well as the chances of getting a foot-hold on the job market upon successful completion of the studies.

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

1. Maitriser un ensemble de « savoirs scientifiques » permettant de résoudre des problématiques de chimie

1.1 Identifier et utiliser de manière critique les connaissances « essentielles » des sciences fondamentales : biologie, chimie, mathématique, physique pour résoudre une problématique donnée

1.2 Identifier et utiliser de manière critique les savoirs « spécialisés » de la chimie : organique, inorganique, analytique, physique pour résoudre un problème complexe de chimie.

2. Réaliser une démarche scientifique, théorique ou expérimentale, complète appliquée à l'appréhension, à l'analyse ou au développement d'une réaction chimique

2.1 Définir une problématique en des termes scientifiques rigoureux

2.2 Intégrer les connaissances acquises pour la formulation du problème en termes d'hypothèses permettant de proposer une solution pertinente au problème de chimie posé

2.3 Etablir les relations structures-propriétés pour une molécule donnée

2.4 Maîtriser les techniques expérimentales fondamentales de la chimie

2.5 Sy3uA576triser lenor dedugm.s-1 0 31lytique, physique 5.208pletEe rmulfe ot7259970 31c5Tm [pe

- Mandatory
- Optional
- Not offered in 2024-2025
- Not offered in 2024-2025 but offered the following year
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- 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...)

Year
1 2 3

Majeure (150 credits)

Biochimie (9 credits)

				Year 1	2	3
Chimie des matériaux (5 credits)						
LCHM1319	Material's chemistry	Charles-André Fustin Alexandru Vlad	FR [q2] [45h] [5 Credits]			x
Mathématiques (8 credits)						
LMAT1101	Mathematics 1	Pedro Dos Santos Santana Forte Vaz	FR [q1] [30h+20h] [4 Credits]	x		
LMAT1102	Mathematics 2	Augusto Ponce	FR [q2] [30h+30h] [4 Credits]	x		
Biologie (14 credits)						
LBIO1110	Life : diversity and evolution	Patrick Dumont Alice Mouton	FR [q1] [30h+10h] [4 Credits]	x		
LBIO1111	Cell and molecular biology	Patrick Dumont Charles Hachez	FR [q1] [30h+20h] [5 Credits]	x		
LBIO1112	Organism biology : plants and animals	Muriel Quinet Jean-François Rees	FR [q2] [30h+20h] [5 Credits]	x		
Physique (13 credits)						
LPHY1101	Physics 1	Michel Crucifix Thierry Fichefet	FR [q1] [30h+40h] [6 Credits]	x		
LPHY1102	Physics 2	Vincent Lemaitre	FR [q2] [54h+36h] [7 Credits]	x		
Sciences de la terre (5 credits)						
LBIR1130	Introduction to Earth sciences	Pierre Delmelle (coord.) Sophie Opfergelt	FR [q2] [30h+30h] [5 Credits]	x		
Anglais (8 credits)						
LANG1861	English: reading and listening comprehension of scientific texts	Catherine Avery (coord.) Fanny Desterbecq Amandine Dumont (coord.) Hila Peer Marc Piwnik	EN [q2] [10h] [2 Credits]	x		
LANG1862	English: reading and listening comprehension of scientific texts					

Year
1 2 3

Sciences religieuses (2 credits)
L'étudiant·e choisit 2 crédits parmi les cours suivants

LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	

List of available minors

The students can choose a minor from the list belowor or can opt for another minor on the University programme, based on a project to be elaborated together with the study advisor.

> Minor in Biology *[en-prog-2024-minbiol]*
> Additionnal module in Chemistry *[en-prog-2024-appchim]*
> Minor in Criminology *[en-prog-2024-mincrim]*
> Minor in Culture and Creation *[en-prog-2024-mincucrea]*
> Minor in Scientific Culture *[en-prog-2024-mincults]*
> Minor in Development and Environment *[en-prog-2024-mindenv]*
> Minor : Issues of Transition and Sustainable Development (*) *[en-prog-2024-mindd]*
> Minor in Gender Studies *[en-prog-2024-mingenre]*
> Minor in entrepreneurship (*) *[en-prog-2024-minmpme]*
> Minor in Economics (open) *[en-prog-2024-minoeco]*
> Minor in numerical technologies and society *[en-prog-2024-minstic]*
> Minor in Geography *[en-prog-2024-mingeog]*
> Minor in Statistics, Actuarial Sciences and Data Sciences *[en-prog-2024-minstat]*
> Mineure Polytechnique *[en-prog-2024-minpoly]*

(*) This programme is the subject of access criteria

Course prerequisites

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 puposes 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.

 # Prerequisities list

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

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

LCHM1331 "Chimie inorganique" has prerequisite(s) LCHM1211

- LCHM1211 - General Chemistry 2

The programme's courses and learning outcomes

For each UCLouvain training programme, a reference framework of learning outcomes specifies the 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

CHIM1BA - 1ST ANNUAL UNIT

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

Majeure

Chimie générale

LCHM1111	General chemistry	

Mathématiques

LMAT1101	Mathematics 1	Pedro Dos Santos Santana Forte Vaz	FR [q1] [30h +20h] [4 Credits]
LMAT1102	Mathematics 2	Augusto Ponce	FR [q2] [30h +30h] [4 Credits]

Biologie

LBIO1110	Life : diversity and evolution	Patrick Dumont Alice Mouton	FR [q1] [30h +10h] [4 Credits]
LBIO1111	Cell and molecular biology	Patrick Dumont Charles Hachez	FR [q1] [30h +20h] [5 Credits]
LBIO1112	Organism biology : plants and animals		

CHIM1BA - 3RD ANNUAL UNIT

[FR] [q2] [22.5h] [3 Credits]

- Mandatory
- Optional
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- 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
- 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...)

Majeure

Biochimie

LCHM1371	Metabolic biochemistry	Melissa Page	[EN] [q2] [30h +30h] [5 Credits] *> French-friendly*

Chimie inorganique et analytique

LCHM1331	Inorganic chemistry I	Sophie Hermans	[FR] [q1] [37.5h +7.5h] [4 Credits]
LCHM1321	Analytical chemistry 1	Christine Dupont Yann Garcia	[FR] [q1] [40h] [5 Credits]
LCHM1322	Exercises in analytical chemistry	Yann Garcia	[FR] [q1] [0h +66h] [3 Credits]

Chimie organique

LCHM1341	Organic chemistry III	Raphaël Robiette	[FR] [q2] [30h +15h] [4 Credits]
LCHM1342	Exercises in organic chemistry I	Raphaël Robiette Michael Singleton	[FR] [q2] [0h +65h] [3 Credits]

Chimie physique

LCHM1351	Physical chemistry	Tom Leyssens	[FR] [q1] [45h +19h] [5 Credits]
LCHM1353	Quantum Chemistry	Benoît Champagne	[FR] [q1] [22.5h +7.5h] [3 Credits]

Chimie des polymères

LCHM1361	Introduction to polymer chemistry	Jean-François Gohy	[FR] [q2] [22.5h] [3 Credits]

Chimie des matériaux

LCHM1319	Material's chemistry		

CHIM1BA - 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

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 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

- 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 1st 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 Junine t3i1(.)00Brses and possible exemptions constituti