

**At Louvain-la-Neuve - 180 credits - 3 years - Day schedule - In French**Dissertation/Graduation Project : **NO** - Internship : **YES**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: **BIOL1BA** - Francophone Certification Framework: 6**Table of contents**

Introduction .....	2
Teaching profile .....	3
Learning outcomes .....	3
Programme structure .....	4
Programme .....	5
Detailed programme by subject .....	6
List of av...	

## BIOL1BA - Introduction

### Introduction

---

## BIOL1BA - Teaching profile

### Learning outcomes

The programme aims at the acquisition of :

- General competence and skills in the principal disciplines of the Exact Sciences (Biology, Chemistry, Mathematics and Physics) and a deepening of the basic competence and skills in the different sectors of Biology
- The capacity to gain knowledge, such as through self-study, through rigorous application of the first stages of a general scientific approach (observation, analysis, summaries, criticism)
- Expertise in the written and oral presentation of scientific texts
- Transversal competence and skills ( Human Sciences, Computing, Management, English, Written and Oral Communication ), with a view to increasing both the general nature of the training and the chance of getting a foothold on the job market upon completion of the studies.

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

1. Maitriser et utiliser des savoirs dans les domaines de la biologie et dans d'autres domaines de connaissances

1.1 Démontrer une compréhension des principes généraux de la vie permettant de comprendre des questions et résoudre des situations qui relèvent de la biologie :

- la structure des systèmes biologiques ;
- le fonctionnement des organismes vivants, incluant les mécanismes génétiques ;
- la diversité des organismes vivants et l'origine de cette diversité ;
- les liens existant entre le fonctionnement d'un organisme et son environnement.

1.2 Intégrer de façon critique des savoirs d'autres domaines de connaissances à la biologie (sciences de la terre, physique, chimie, mathématiques, la philosophie) afin de favoriser une approche interdisciplinaire.

1.3 Synthétiser et résumer sous différentes formes (textuelle, numérique, verbale et graphique) de manière critique l'information issue de la littérature scientifique.

1.4 Traiter des questions biologiques impliquant des savoirs d'autres disciplines issues des sciences exactes et humaines de façon à développer une vision large notamment en lien avec des préoccupations sociétales.

2. Résoudre des problèmes à composante biologique

2.1 Rechercher efficacement de l'information scientifique pertinente dans des bases de données bibliographiques en ligne.

2.2 Respecter des consignes et mobiliser un savoir-faire expérimental de base (techniques d'observation et d'analyse) en sciences biologiques

2.3 Réaliser des observations avec précision dans le cadre d'activités sur le terrain et en laboratoire

2.4 Entreprendre des expériences sur le vivant de manière sécurisée en respectant des règles sanitaires et de sécurité.

3. Appliquer une démarche scientifique, découvrir par soi-même des connaissances et exercer un esprit critique

3.1 Concevoir et mettre en œuvre des expériences et observations en lien avec des hypothèses et questions scientifiques au moyen des méthodologies et techniques appropriées, en laboratoire et sur le terrain.

3.2 Rapporter et interpréter des résultats et situations de manière rigoureuse à l'aide d'informations scientifiques déjà disponibles et d'outils quantitatifs et qualitatifs appropriés, en faisant abstraction de ses idées préconçues.

3.3 Formuler des conclusions et définir les perspectives de son travail.

3.4 Exercer un esprit critique quant à la qualité des sources, l'interprétation des faits expérimentaux et la démarche suivie et, le cas échéant, proposer des améliorations.

4. Communiquer efficacement et de manière adaptée au public en français et en anglais

4.1 Comprendre et utiliser des articles, sites de la toile et autres ouvrages scientifiques en français et en anglais (anglais : compréhension à l'audition et à la lecture de textes scientifiques, niveau B2-C1 du Cadre européen commun de référence pour les langues)

4.2 Communiquer oralement et par écrit en français les résultats d'expériences et d'observations en construisant et en utilisant, le cas échéant, des graphiques et des tableaux

4.3 Communiquer oralement en français et en anglais (anglais : communication interactive, niveau B2 du Cadre européen commun de référence pour les langues) et par écrit en français sur des sujets biologiques de manière appropriée pour une variété de public, en utilisant un langage scientifique adapté et des supports de qualité.

4.4 Dialoguer avec les enseignants ou d'autres intervenants dans sa formation et avec les autres étudiants de manière efficace, en

- 5.2 Gérer sa formation : développer des objectifs pour sa formation future en master et formuler progressivement un projet professionnel, établir le choix de mineure, de cours, de stages, le cas échéant de séjour en programme d'échange en conformité avec ces objectifs et en fonction de contraintes externes.
- 5.3 Exercer ses compétences et utiliser ses connaissances dans des situations d'apprentissage variées et nouvelles et tirer parti de ces situations nouvelles.
- 5.4 Identifier les applications des savoirs biologiques à travers l'observation et la participation aux activités de professionnels dans le domaine de la biologie par le biais de stages.
6. Travailler en équipe sur des questions multidisciplinaires centrées sur la biologie et ainsi développer des qualités relationnelles
- 6.1 Identifier les objectifs et responsabilités individuels et collectifs en tenant compte des avantages et des contraintes d'une action collective et organiser et réaliser le travail en conformité avec ces rôles, en particulier dans le cadre d'études pratiques, de laboratoire et / ou sur le terrain.
- 6.2 Partager les savoirs et les méthodes, favoriser la collaboration et l'entraide.
- 6.3 Reconnaître et respecter les points de vue et opinions des membres de l'équipe, établir des compromis.
- 6.4 Evaluer ses performances en tant que membre d'une équipe ainsi que les performances des autres membres de l'équipe de la façon la plus objective possible.
- 6.5 Lors de stages, s'intégrer dans une équipe professionnelle et collaborer avec ses membres avec modestie, ouverture d'esprit et curiosité.
7. Agir en scientifique conscient de lui-même et du monde, responsable et respectueux de son environnement
- 7.1 Référencer ses travaux conformément aux standards du monde scientifique et sans plagiat.
- 7.2 Etre conscient de l'impact environnemental de certaines activités d'études du baccalauréat en sciences biologiques et respecter des règles et des lois visant à en minimiser l'importance.
- 7.3 Mener une réflexion personnelle et critique sur sa formation, sa façon de travailler, ses objectifs, sa motivation.
- 7.4 Etre conscient de l'impact sociétal des développements scientifiques, réfléchir et débattre sur les controverses actuelles dans le domaine des sciences biologiques, entre autres celles qui touchent à la qualité de la vie et l'action de l'homme sur son environnement.

## Programme structure

---

The programme consists of a major of 150 credits, completed :

- either by blocks of options orientated towards the main domains of Biology (30 credits). These course blocks are taken in the 3rd year of the bachelor's programme
- or by a minor with studies more directed towards Chemistry (30 credits) ; this minor in Chemistry begins in the 2nd year of the bachelor's programme with a prerequisite course for the same minor in the third year of the bachelor's programme
- or by another minor selected from the University programme in concertation with the study advisor. This minor will be taken in its entirety (30 credits) in the 3rd year of the bachelor studies.

The progressive orientation of the programme starts right from the first year of polyvalent studies. The first year programme aims at the acquisition of basic knowledge in Sciences, (Mathematics, Physics, Chemistry, Biology and Earth Sciences).

At the end of the first year, the students may re-orientate their studies, without the need for any complements, to the second year of the bachelor's of Biochemistry and of Bioengineering Science and also to that of Geographical Science, subject to an extra course in Geography (GEO 1111).

The second year is composed of a common pool of subjects totalling 54 credits, to which are added, in accordance with the student's personal choice, a project of 4 credits and a course in Philosophy of 2 credits, or a minor in Chemistry of 6 credits. The third year again takes the form of a common pool of subjects (30 credits) and options in the form of personally selected blocks of courses (30 credits) or a minor. The programme groups different subjects together with the aim of breaking down the boundaries of the different disciplines. This interdisciplinary approach is also fostered in the context of the individual or group projects. Several courses are based on self-study. A part of the evaluation takes the form of ongoing assessment which also includes the wide number of seminars offered.

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

Principal Subjects

The major in Biology, totalling 150 credits, contains the following :

Philosophy (30) (2 credits)

Mathematics and Biostatistics (20 credits)

- General Mathematics I (75-60) (11 credits)
- Statistics in Natural Sciences (30-30) (5 credits)
- Biometrics (25-25) (4 credits)

These courses are followed in the order indicated.

## Physics and Biophysics (18 credits)

- General Physics I (75-75) (12 credits)
- Biophysics (45-30) (6 credits)

These courses are followed in the order indicated

## Earth Sciences (45-30) (6 credits)

## Chemistry - Biochemistry (25 credits)

- General Chemistry (60-60) (10 credits)
- Organic Chemistry I (30-30) (5 credits)
- Bio-organic Chemistry (30-10) (3 credits)
- Elements of Biochemistry (30-24) (4 credits)
- Metabolic Biochemistry B (22,5-15) (3 credits)

The first four courses are followed in the order indicated ; the next one may be followed independently after the course in Elements of Biochemistry.

## General Biology (34 credits)

- Biology (90-45) (11 credits)
- Complement of Vegetal Biology (60-25) (7 credits)
- Complements of Animal Biology (75-70) (12 credits)
- Microbiology and Virology (40-15) (4 credits)

The Biology course must be followed before the other courses which may then be taken independently.

## Physiology and Histology (11 credits)

- Animal Biochemistry, Physiology and Histology (45-15) (6 credits)
- Vegetal Physiology (45-15) (5 credits)

These courses may be followed after the course in Biology.

## Genetics (6 credits)

- Elements of Genetics (25-15) (3 credits)
- Molecular Genetics (25-15) (3 credits)

Courses to be followed in the order indicated.

## Ecology (6 credits)

- Elements of Ecology (60-15) (6 credits)

## Integrated tasks and exercises, projects and work experience (16 credits)

- Project 1 (0-45) (3 credits)
- Training course in Marine Biology (0-40) (3 credits)
- Project 2 (0-45) (4 credits)
- Integrated seminars (25-0) (2 credits)
- Internship (0-60) (4 credits)

The projects are carried out in the order indicated. The training course in Marine Biology takes place after the courses in Animal and Vegetal Biology and Elements of Ecology. The integrated seminars and internship period take place at the end of the bachelor's









**o Minor or additional module (30 credits)**

---

*L'étudiant complète sa formation en choisissant un approfondissement ou une mineure dans la liste proposée pour le bachelier en sciences biologiques. Il répartit les unités d'enseignement dans le 2e et le 3e bloc annuel, de manière à ce que son programme annuel totalise 60 crédits.*

*Maximum 1 element(s)*

---

## List of available minors

---

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

- > [Additional module in Biology](#) [ en-prog-2024-appbiol ]
- > [Minor in Chemistry](#) [ en-prog-2024-minchim ]
- > [Minor in Criminology](#) [ en-prog-2024-mincrim ]
- > [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 Biomedicine \(openness\)](#) [ en-prog-2024-minsbim ]
- > [Minor in Culture and Creation](#) [ en-prog-2024-mincucrea ]
- > [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 Statistics, Actuarial Sciences and Data Sciences](#) [ en-prog-2024-minstat ]
- > [Mineure Polytechnique](#) [ en-prog-2024-minpoly ]
- > [Minor in Computer Sciences](#) [ en-prog-2024-minsinf ]

(\*) *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 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](#).

---

### # Prerequisites list

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

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

**LVETE1300** "Integrated Seminars" has prerequisite(s) LANG1861

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

## 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



**BIOL1BA - 2ND ANNUAL UNIT**

- 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
- 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 Mathématiques et statistiques**

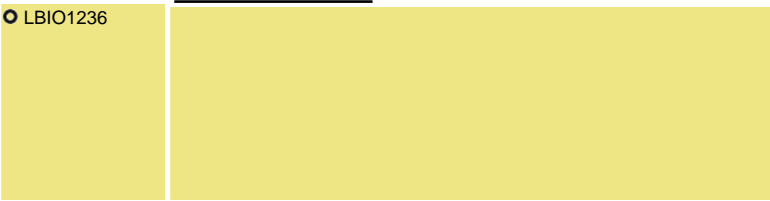
● LBIO1282	Management and exploration of biological data	Renate Wesselingh	[FR] [q1] [20h +15h] [2 Credits] 🌐
● LBIO1283	Statistical principles and biological data analysis	Nicolas Schtickzelle	[FR] [q2] [30h +40h] [4 Credits] 🌐

**o Physique et biophysique**

● LPHY1103	Additional physics	Gabriel Dias de Carvalho Junior Marco Drewes	[FR] [q2] [40h +10h] [4 Credits] 🌐
------------	--------------------	--	---



● LBIO1236



**BIOL1BA - 3RD ANNUAL UNIT**

---

- 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
- 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 Mathématiques et statistiques**

- LBIO1383 [Statistical methods applied to biology](#)

○ LBIO1310	Biological evolution	François Renoz René Rezsöhazi	18 [q2] [30h +10h] [3 Credits]
------------	----------------------	----------------------------------	---

○ Microbiologie et virologie



## BIOL1BA - Information

### Access Requirements

---

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

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

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

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 \(fr\)](#).

- Access to **Bachelor of Science in Business Engineering**

The Bachelor of Science in Business Engineering is a joint program organised by KU Leuven and UCLouvain Saint-Louis Bruxelles. In order to register, all candidate must first submit an application via the [KU Leuven admission platform](#). The [conditions of access](#) to this programme are speci94 Ts1 0 0 -1rst sit





