UCLouvain

BIOL1BA

2024 - 2025

Bachelor in Biology

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

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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

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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.

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 exercices, 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 programme.

English : 6 credits

- English 1 (0-30) (2 credits)
- English 2 (30-0) (2 credits)
- English 3 (30-0) (2 credits)

These courses must be followed in order (unless exemption is granted).

BIOL1BA Programme

Detailed programme by subject

- O Mandatory
- ⊠ Optional
- △ Not offered in 2024-2025
- ⊘

Year
1 2 3

Year
1 2 3

Year
1 2 3

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

> Additionnal 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 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

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 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

BIOL1BA - 1ST 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...)

Majeure

Mathématiques et statistiques

		Pedro Dos Santos Santana Forte Vaz	[q1] [30h +20h] [4 Credits]
		Augusto Ponce	[q2] [30h +30h] [4 Credits]

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...)

Majeure

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]

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...)

LBIO1310	Biological evolution	François Renoz René Rezsohazy	FR [q2] [30h +10h] [3 Credits]

Microbiologie et virologie

LBIO1311	Microbiology and virology	Benoît Desguin Thomas Michiels	FR [q1] [40h +15h] [4 Credits]

Anglais

LANG1863	English for Students in Sciences (Upper-Intermediate level)	Ahmed Adrioueche (coord.) Catherine Avery (coord.) Amandine Dumont (coord.) Sandrine Jacob (coord.) Adrien Kefer (compensates Amandine Dumont) Nevin Serbest Florence Simon (coord.) Marine Volpe	EN [q1 or q2] [30h] [2 Credits]

Seminars and integrated exercises

LVETE1300	Integrated Seminars	Melissa Page (coord.) Muriel Quinet René Rezsohazy Patrice Soumillion	EN [q2] [0h +25h] [2 Credits]

Sciences religieuses

L'étudiant choisit 2 crédits parmi les UE suivantes :

LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	FR [q1] [15h] [2 Credits]
LTECO2200	Societies-cultures-religions : Human Questions	Pedro Dusabamahoro Valinho Gomes	FR [q1] [15h] [2 Credits]
LTECO2300	Societies, cultures, religions : Ethical questions	Marcela Lobo Bustamante	FR [q1] [15h] [2 Credits]

Optional courses

These credits are not counted within the 120 required credits.

LSST1001	IngénieuxSud	Stéphanie Merle Jean-Pierre Raskin	FR [q1+q2] [15h +45h] [5 Credits]
LSST1002M	Information and critical thinking - MOOC	Anne Bauwens (compensates Jean-François Rees) Myriam De Kesel	FR [q2] [30h +15h] [3 Credits]

Minor or additional module

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Maximum 1 element(s)

BIOL1BA - 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 the academic year 2024-2025, you must have obtained your diploma during the academic years 2021-2022, 2022-2023 ou 2023-2024. 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 example special Maths / sciences). A non-successful year will not be taken into consideration.

- 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

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Website
https://uclouvain.be/fr/facultes/sc/biol

Academic supervisor: Muriel Quinet

Jury

- President: Patrick Dumont
- Secretary: Melissa Page
- Study advisor: Stanley Lutts

Useful Contact(s)

- Administrative manager for the student's annual program: Nathalie Micha