

**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**

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## BIOL1BA - Introduction

### Introduction

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## 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 les concepts fondamentaux de la biologie et utiliser des savoirs d'autres disciplines en lien avec la biologie.

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 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. Appliquer les connaissances acquises en biologie pour analyser des situations à composante biologique.

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

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

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

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

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

3. Appliquer une démarche scientifique principalement dans le domaine de la biologie, y 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 en français et en anglais de manière adaptée à son public.

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 adoptant une attitude courtoise, en étant attentif à la qualité de l'écoute et en argumentant.

4.5 Rechercher des interlocuteurs dans le monde professionnel et se présenter à eux de façon convaincante.

5. Développer son autonomie, se fixer des objectifs de formation et effectuer les choix pour les atteindre.

5.1 Organiser son temps (régularité) et son travail (persévérance), tant individuel que collectif, fixer des priorités, gérer son stress dans des situations de somme importante de travail à accomplir ou d'incertitude.

- 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. Se comporter en scientifique soucieux de son environnement.
- 7.1 Référencer ses travaux conformément aux standards du monde scientifique et sans plagiat.
- 7.2 Percevoir les conséquences environnementales de certaines activités d'étude du bachelier en sciences biologiques et respecter des règles ou 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 Reconnaître 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

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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 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 Detailed programme

## Programme by subject

Year

1 2 3

### o Majeure (150 credits)

#### o Mathématiques et statistiques (19 credits)

○ LMAT1101	Mathematics 1	Pedro Dos Santos Santana Forte Vaz	30h+20h	4 Credits	q1	x		
○ LMAT1102	Mathematics 2	Augusto Ponce	30h+30h	4 Credits	q2	x		
○ LBIO1282	Management and exploration of biological data 🟡	Renate Wesselingh	20h+15h	2 Credits	q1		x	
○ LBIO1283	Statistical principles and biological data analysis 🟡	Nicolas Schtickzelle	30h+40h	4 Credits	q2		x	
○ LBIO1383	Statistical methods applied to biology 🟡	Anouar El Ghouch	30h+40h	5 Credits	q2			x

#### o Physique et biophysique (10 credits)

○ LPHY1101	Physics 1	Thierry Fichetef	30h+40h	6 Credits	q1	x		
○ LPHY1103	Additional physics 🟡	Adrien Poncelet (compensates Fabio Maltoni)	40h+10h	4 Credits	q2		x	

#### o Sciences de la terre (5 credits)

○ LBIR1130	Introduction to Earth sciences	Pierre Delmelle (coord.) Sophie Opfergelt	30h+30h	5 Credits	q2	x		
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#### o Chimie et biochimie (24 credits)

○ LCHM1111B	General chemistry	Michel Devillers	45h+45h	8 Credits	q1	x		
○ LCHM1141B	Organic chemistry	Benjamin Elias (coord.) Charles-André Fustin	30h+30h	6 Credits	q2	x		
○ LCHM1242	Chimie bio-organique 🟡	Benjamin Elias Patrice Soumillion	30h+10h	3 Credits	q1		x	
○ LCHM1271A	Éléments de biochimie 🟡	Patrice Soumillion	30h+20h	3 Credits	q1		x	
○ LCHM1371B	Metabolic biochemistry - courses and labs 🟡	Melissa Page Patrice Soumillion	30h+15h	4 Credits	q2		x	

#### o Biologie générale (23 credits)

○ LBIO1110	Life : diversity and evolution	Patrick Dumont Thierry Hance Caroline Nieberding (coord.)	30h+10h	4 Credits	q1	x		
○ LBIO1111	Cell and molecular biology	André Lejeune	30h+20h	5 Credits	q1	x		
○ LBIO1112	Organism biology : plants and animals	André Lejeune Jean-François Rees	30h+20h	5 Credits	q2	x		
○ LBIO1116	Scientific approach in biology	Muriel Quinet	30h+30h	5 Credits	q2	x		
○ LBIO1117	Ecology I	Hans Van Dyck Renate Wesselingh (coord.)	30h+10h	4 Credits	q2	x		

#### o Biologie cellulaire (2 credits)

○ LBIO1235	General cell physiology 🟡	Stanley Lutts Jean-François Rees	15h+15h	2 Credits	q1		x	
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#### o Biologie végétale (12 credits)

○ LBIO1240	Plant physiology 🟡	Xavier Draye Stanley Lutts	40h+15h	4 Credits	q1		x	
○ LBIO1242	Angiosperm's development, reproduction and systematic 🟡	André Lejeune Stanley Lutts Muriel Quinet	30h+15h	3 Credits	q2		x	

						Year		
						1	2	3
○ LBIO1343	Plant morphogenesis: genetic control 🟡	Laurie Maistriaux (compensates François Chaumont)	30h+0h	2 Credits	q2			x
○ LBIO1344	Plant diversity and physiological principles of plant interactions 🟡	Stanley Lutts	30h+15h	3 Credits	q1			x

### ○ Biologie animale (16 credits)

○ LBIO1234A	Animal histology 🟡	Anne-Catherine Gérard (compensates Bernard Knoops)	20h+10h	2 Credits	q1		x	
○ LBIO1230	Invertebrate biology 🟡	Jean-François Rees	10h+40h	4 Credits	q1		x	
○ LBIO1236	Integrated animal biology : coordination, perception and locomotion 🟡	Frédéric Clotman (compensates Bernard Knoops) Patrick Dumont (compensates Bernard Knoops) Françoise Gofflot	40h+10h	4 Credits	q2		x	
○ LBIO1330	Integrated animal biology : reproduction and development 🟡	Patrick Dumont René Rezsóhazy	30h+10h	3 Credits	q1			x
○ LBIO1333	Integrated animal biology: circulation, respiration, digestion and excretion 🟡	Patrick Dumont Françoise Gofflot (coord.)	30h+10h	3 Credits	q2			x

### ○ Génétique et biologie moléculaire (7 credits)

○ LBIO1221	Genetics 🟡	Charles Hachez André Lejeune	20h+15h	2 Credits	q2		x	
○ LBIO1223	Molecular biology 🟡	Bernard Hallet	50h+20h	5 Credits	q2		x	
○ LBIO1323	Molecular signaling 🟡	Henri Batoko Patrick Dumont Géraldine Laloux	30h+10h	3 Credits	q1			x

### ○ Ecologie (5 credits)

○ LBIO1217	Ecology II 🟡	Thierry Hance Caroline Nieberding Hans Van Dyck Renate Wesselingh (coord.)	30h+10h	3 Credits	q2		x	
○ LBIO1317	Functional ecology 🟡	Caroline Nieberding Renate Wesselingh	30h	2 Credits	q1			x

### ○ Evolution (5 credits)

○ LBIO1355	Speciation : origin of biodiversity 🟡	Thierry Hance Renate Wesselingh	20h+10h	2 Credits	q1			x
○ LBIO1310	Biological evolution 🟡	Caroline Nieberding René Rezsóhazy	30h+10h	3 Credits	q2			x

### ○ Microbiologie et virologie (4 credits)

○ LBIO1311	Microbiology and virology 🟡	Benoît Desguin Thomas Michiels	40h+15h	4 Credits	q1			x
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### ○ Mycètes (2 credits)

○ LBIO1213	Morphology and physiology of fungi 🟡	Stephan Declerck	15h+10h	2 Credits	q1		x	
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### ○ Anglais (7 credits)

○ LANG1861	English: reading and listening comprehension of scientific texts	Catherine Avery (coord.) Fanny Desterbecq (coord.) Amandine Dumont	10h	2 Credits	q2	x		
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						Year		
						1	2	3
○ LANG1862	English: reading and listening comprehension of scientific texts	Ahmed Adriouèche (coord.) Amandine Dumont Ariane Halleux (coord.)	30h	3 Credits	q1		x	
○ LANG1863	English for Students in Sciences (Upper-Intermediate level)	Ahmed Adriouèche (coord.) Catherine Avery (coord.) Amandine Dumont (coord.) Sandrine Jacob (coord.) Sabrina Knorr Nevin Serbest Colleen Starrs Françoise Stas (coord.)	30h	2 Credits	q1 or q2			x

### ○ Seminars and integrated exercises (2 credits)

○ LVETE1300	Integrated Seminars	André Lejeune André Moens (coord.) Melissa Page Muriel Quinet René Rezsöházy Patrice Soumillion	0h+25h	2 Credits	q2			x
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### ○ Méthodologie (2 credits)

○ LBIO1115	Academic methodology	Myriam De Kesel Jim Plumet Jean-François Rees Valérie Wathelet (coord.)	10h+10h	2 Credits	q2	x		
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### ○ Sciences religieuses (2 credits)

L'étudiant choisit 2 crédits parmi les UE suivantes :

⊗ LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	15h	2 Credits	q1			x
⊗ LTECO2200	Societies-cultures-religions : Human Questions	Régis Burnet Dominique Martens	15h	2 Credits	q1 or q2			x
⊗ LTECO2300	Societies, cultures, religions : Ethical questions	Marcela Lobo Bustamante	15h	2 Credits	q1			x

### ⊗ Optional courses

These credits are not counted within the 120 required credits.

⊗ LSST1001	IngénieuxSud	Jean-Pierre Raskin	15h+45h	5 Credits	q1+q2			x
⊗ LSST1002M	Information and critical thinking - MOOC	Myriam De Kesel Jim Plumet Jean-François Rees	30h+15h	3 Credits	q2			x

### ○ 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.



## 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-2020-appbiol ]
- > [Minor in Chemistry](#) [ en-prog-2020-minchim ]
- > [Minor in Criminology](#) [ en-prog-2020-mincrim ]
- > [Minor in entrepreneurship \(\\*\)](#) [ en-prog-2020-minmpme ]
- > [Minor in Economics \(open\)](#) [ en-prog-2020-minoeco ]
- > [Minor in numerical technologies and society](#) [ en-prog-2020-minstic ]
- > [Minor in Biomedicine \(openness\)](#) [ en-prog-2020-minsbim ]

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

## Course prerequisites

A document entitled #nom\_fichier\_pdf# specifies the activities (course units - CU) with one or more pre-requisite(s) within the study programme, that is the CU whose learning outcomes must have been certified and for which the credits must have been granted by the jury before the student is authorised to sign up for that activity.

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

As the prerequisites are a requirement of enrolment, there are none within a year of a course.

The prerequisites are defined for the CUs for different years and therefore influence the order in which the student can enrol in the programme's CUs.

In addition, when the panel validates a student's individual programme at the beginning of the year, it ensures the consistency of the individual programme:

- It can change a prerequisite into a corequisite within a single year (to allow studies to be continued with an adequate annual load);
- It can require the student to combine enrolment in two separate CUs it considers necessary for educational purposes.

For more information, please consult [regulation of studies and exams](#).

### # Prerequisites list

- LANG1862** "English: reading and listening comprehension of scientific texts" has prerequisite(s) LANG1861
- LANG1861 - English: reading and listening comprehension of scientific texts
- LANG1863** "Anglais interactif pour étudiants en sciences (niveau intermédiaire+)" has prerequisite(s) LANG1861 ET LANG1862
- LANG1861 - English: reading and listening comprehension of scientific texts
  - LANG1862 - English: reading and listening comprehension of scientific texts
- L BIO1213** "Morphologie et physiologie des mycètes" has prerequisite(s) L BIO1111 ET L BIO1117
- L BIO1111 - Cell and molecular biology
  - L BIO1117 - Ecology I
- L BIO1217** "Ecologie II" has prerequisite(s) L BIO1117
- L BIO1117 - Ecology I
- L BIO1221** "Genetics" has prerequisite(s) L BIO1111 ET LANG1861
- L BIO1111 - Cell and molecular biology
  - LANG1861 - English: reading and listening comprehension of scientific texts
- L BIO1223** "Biologie moléculaire" has prerequisite(s) L BIO1111
- L BIO1111 - Cell and molecular biology
- L BIO1230** "Biologie des invertébrés" has prerequisite(s) L BIO1112
- L BIO1112 - Organism biology : plants and animals
- L BIO1234A** "Histologie animale" has prerequisite(s) L BIO1111 ET L BIO1112
- L BIO1111 - Cell and molecular biology
  - L BIO1112 - Organism biology : plants and animals
- L BIO1235** "Physiologie cellulaire générale" has prerequisite(s) L BIO1111 ET L BIO1112
- L BIO1111 - Cell and molecular biology
  - L BIO1112 - Organism biology : plants and animals
- L BIO1236** "Biologie animale intégrée : coordination, perception et locomotion" has prerequisite(s) L CHM1141B ET L BIO1111 ET L BIO1112
- L CHM1141B - Organic chemistry

- LBIO1111 - Cell and molecular biology
- LBIO1112 - Organism biology : plants and animals
- LBIO1240** "Physiologie végétale" has prerequisite(s) LBIO1112
- LBIO1112 - Organism biology : plants and animals
- LBIO1242** "Développement, reproduction et systématique des angiospermes" has prerequisite(s) LBIO1112
- LBIO1112 - Organism biology : plants and animals
- LBIO1282** "Gestion et exploration des données biologiques" has prerequisite(s) LBIO1116
- LBIO1116 - Scientific approach in biology
- LBIO1283** "Principes de statistiques et analyse des données biologiques" has prerequisite(s) LMAT1101 ET LMAT1102
- LMAT1101 - Mathematics 1
- LMAT1102 - Mathematics 2
- LBIO1310** "Evolution biologique" has prerequisite(s) LBIO1110
- LBIO1110 - Life : diversity and evolution
- LBIO1311** "Microbiologie et virologie" has prerequisite(s) LCHM1141B ET LBIO1111 ET LBIO1112 ET LCHM1242 ET LCHM1271A ET LCHM1371B
- LCHM1141B - Organic chemistry
- LBIO1111 - Cell and molecular biology
- LBIO1112 - Organism biology : plants and animals
- LCHM1242 - Chimie bio-organique
- LCHM1271A - Eléments de biochimie
- LCHM1371B - Metabolic biochemistry - courses and labs
- LBIO1317** "Functional ecology" has prerequisite(s) LBIO1117 ET LBIO1223
- LBIO1117 - Ecology I
- LBIO1223 - Molecular biology
- LBIO1323** "Signalisation moléculaire" has prerequisite(s) LBIO1111 ET LBIO1223
- LBIO1111 - Cell and molecular biology
- LBIO1223 - Molecular biology
- LBIO1330** "Biologie animale intégrée : reproduction et développement" has prerequisite(s) LBIO1111 ET LBIO1112 ET LBIO1234A
- LBIO1111 - Cell and molecular biology
- LBIO1112 - Organism biology : plants and animals
- LBIO1234A - Animal histology
- LBIO1333** "Biologie animale intégrée : circulation, respiration, digestion et excrétion" has prerequisite(s) LBIO1234A
- LBIO1234A - Animal histology
- LBIO1343** "Morphogenèse végétale : contrôle génétique" has prerequisite(s) LBIO1112 ET LBIO1240 ET LBIO1242 ET LBIO1221
- LBIO1112 - Organism biology : plants and animals
- LBIO1240 - Plant physiology
- LBIO1242 - Angiosperm's development, reproduction and systematic
- LBIO1221 - Genetics
- LBIO1344** "Diversité végétale et principes physiologiques des interactions végétales" has prerequisite(s) LBIO1112 ET LBIO1240
- LBIO1112 - Organism biology : plants and animals
- LBIO1240 - Plant physiology
- LBIO1355** "Spéciation : origines de la biodiversité" has prerequisite(s) LBIO1110
- LBIO1110 - Life : diversity and evolution
- LBIO1383** "Méthodes statistiques appliquées à la biologie" has prerequisite(s) LMAT1101 ET LMAT1102 ET LBIO1282 ET LBIO1283
- LMAT1101 - Mathematics 1
- LMAT1102 - Mathematics 2
- LBIO1282 - Management and exploration of biological data
- LBIO1283 - Statistical principles and biological data analysis
- LCHM1242** "Chimie bio-organique" has prerequisite(s) LCHM1111B ET LCHM1141B
- LCHM1111B - General chemistry
- LCHM1141B - Organic chemistry
- LCHM1271A** "Eléments de biochimie" has prerequisite(s) LCHM1111B ET LCHM1141B
- LCHM1111B - General chemistry
- LCHM1141B - Organic chemistry
- LCHM1371B** "Metabolic biochemistry - cours et labo" has prerequisite(s) LCHM1111B ET LCHM1141B ET LBIO1111
- LCHM1111B - General chemistry
- LCHM1141B - Organic chemistry
- LBIO1111 - Cell and molecular biology
- LPHY1103** "Compléments de physique" has prerequisite(s) LPHY1101
- LPHY1101 - Physics 1

**LVETE1300** "Integrated Seminars" has prerequisite(s) LANG1861 ET LANG1862

- LANG1861 - [English: reading and listening comprehension of scientific texts](#)
- LANG1862 - [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 competences expected of every graduate on completion of the programme. You can see the contribution of each teaching unit to the programme's reference framework of learning outcomes in the document "*In which teaching units are the competences and learning outcomes in the programme's reference framework developed and mastered by the student?*"

The document is available by clicking [this link](#) after being authenticated with your UCLouvain account.

## Programme type

### BIOL1BA - 1ST ANNUAL UNIT

○ Mandatory

△ Courses not taught during 2020-2021

⊕ Periodic courses taught during 2020-2021

⊗ Optional

⊖ Periodic courses not taught during 2020-2021

■ Activity with requisites

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

### ○ Majeure

#### ○ Mathématiques et statistiques

○ LMAT1101	<a href="#">Mathematics 1</a>	Pedro Dos Santos Santana Forte Vaz	30h+20h	4 Credits	q1
○ LMAT1102	<a href="#">Mathematics 2</a>	Augusto Ponce	30h+30h	4 Credits	q2

#### ○ Physique et biophysique

○ LPHY1101	<a href="#">Physics 1</a>	Thierry Fichet	30h+40h	6 Credits	q1
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#### ○ Sciences de la terre

○ LBIR1130	<a href="#">Introduction to Earth sciences</a>	Pierre Delmelle (coord.) Sophie Opfergelt	30h+30h	5 Credits	q2
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#### ○ Chimie et biochimie

○ LCHM1111B	<a href="#">General chemistry</a>	Michel Devillers	45h+45h	8 Credits	q1
○ LCHM1141B	<a href="#">Organic chemistry</a>	Benjamin Elias (coord.) Charles-André Fustin	30h+30h	6 Credits	q2

#### ○ Biologie générale

○ LBIO1110	<a href="#">Life : diversity and evolution</a>	Patrick Dumont Thierry Hance Caroline Nieberding (coord.)	30h+10h	4 Credits	q1
○ LBIO1111	<a href="#">Cell and molecular biology</a>	André Lejeune	30h+20h	5 Credits	q1
○ LBIO1112	<a href="#">Organism biology : plants and animals</a>	André Lejeune Jean-François Rees	30h+20h	5 Credits	q2
○ LBIO1116	<a href="#">Scientific approach in biology</a>	Muriel Quinet	30h+30h	5 Credits	q2
○ LBIO1117	<a href="#">Ecology I</a>	Hans Van Dyck Renate Wesselingh (coord.)	30h+10h	4 Credits	q2

## o Anglais

o LANG1861	English: reading and listening comprehension of scientific texts	Catherine Avery (coord.) Fanny Desterbecq (coord.) Amandine Dumont	10h	2 Credits	q2
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## o Méthodologie

o LBIO1115	Academic methodology	Myriam De Kesel Jim Plumet Jean-François Rees Valérie Wathelet (coord.)	10h+10h	2 Credits	q2
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**BIOL1BA - 2ND ANNUAL UNIT**

○ Mandatory

△ Courses not taught during 2020-2021

⊕ Periodic courses taught during 2020-2021

⊗ Optional

⊖ Periodic courses not taught during 2020-2021

■ Activity with requisites

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	20h+15h	2 Credits	q1
○ LBIO1283	Statistical principles and biological data analysis ■	Nicolas Schtickzelle	30h+40h	4 Credits	q2

**o Physique et biophysique**

○ LPHY1103	Additional physics ■	Adrien Poncelet (compensates Fabio Maltoni)	40h+10h	4 Credits	q2
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**o Chimie et biochimie**

○ LCHM1242	Chimie bio-organique ■	Benjamin Elias Patrice Soumillion	30h+10h	3 Credits	q1
○ LCHM1271A	Eléments de biochimie ■	Patrice Soumillion	30h+20h	3 Credits	q1
○ LCHM1371B	Metabolic biochemistry - courses and labs ■	Melissa Page Patrice Soumillion	30h+15h	4 Credits	q2

**o Biologie cellulaire**

○ LBIO1235	General cell physiology ■	Stanley Lutts Jean-François Rees	15h+15h	2 Credits	q1
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**o Biologie végétale**

○ LBIO1240	Plant physiology ■	Xavier Draye Stanley Lutts	40h+15h	4 Credits	q1
○ LBIO1242	Angiosperm's development, reproduction and systematic ■	André Lejeune Stanley Lutts Muriel Quinet	30h+15h	3 Credits	q2

**o Biologie animale**

○ LBIO1234A	Animal histology ■	Anne-Catherine Gérard (compensates Bernard Knoops)	20h+10h	2 Credits	q1
○ LBIO1230	Invertebrate biology ■	Jean-François Rees	10h+40h	4 Credits	q1
○ LBIO1236	Integrated animal biology : coordination, perception and locomotion ■	Frédéric Clotman (compensates Bernard Knoops) Patrick Dumont Patrick Dumont (compensates Bernard Knoops) Françoise Gofflot	40h+10h	4 Credits	q2

**o Génétique et biologie moléculaire**

○ LBIO1221	Genetics ■	Charles Hachez André Lejeune	20h+15h	2 Credits	q2
○ LBIO1223	Molecular biology ■	Bernard Hallet	50h+20h	5 Credits	q2

### o Ecologie

LBIO1217	Ecology II	Thierry Hance Caroline Nieberding Hans Van Dyck Renate Wesselingh (coord.)	30h+10h	3 Credits	q2
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### o Mycètes

LBIO1213	Morphology and physiology of fungi	Stephan Declerck	15h+10h	2 Credits	q1
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### o Anglais

LANG1862	English: reading and listening comprehension of scientific texts	Ahmed Adriouche (coord.) Amandine Dumont Ariane Halleux (coord.)	30h	3 Credits	q1
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### o Minor or additional module

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*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.*

**BIOL1BA - 3RD ANNUAL UNIT**

○ Mandatory

△ Courses not taught during 2020-2021

⊕ Periodic courses taught during 2020-2021

⊗ Optional

⊖ Periodic courses not taught during 2020-2021

■ Activity with requisites

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

**o Majeure****o Mathématiques et statistiques**

○ LBIO1383	Statistical methods applied to biology ■	Anouar El Ghouch	30h+40h	5 Credits	q2
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**o Biologie végétale**

○ LBIO1343	Plant morphogenesis: genetic control ■	Laurie Maistriaux (compensates François Chaumont)	30h+0h	2 Credits	q2
○ LBIO1344	Plant diversity and physiological principles of plant interactions ■	Stanley Lutts	30h+15h	3 Credits	q1

**o Biologie animale**

○ LBIO1330	Integrated animal biology : reproduction and development ■	Patrick Dumont René Rezsöházy	30h+10h	3 Credits	q1
○ LBIO1333	Integrated animal biology: circulation, respiration, digestion and excretion ■	Patrick Dumont Françoise Gofflot (coord.)	30h+10h	3 Credits	q2

**o Génétique et biologie moléculaire**

○ LBIO1323	Molecular signaling ■	Henri Batoko Patrick Dumont Géraldine Laloux	30h+10h	3 Credits	q1
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**o Ecologie**

○ LBIO1317	Functional ecology ■	Caroline Nieberding Renate Wesselingh	30h	2 Credits	q1
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**o Evolution**

○ LBIO1355	Speciation : origin of biodiversity ■	Thierry Hance Renate Wesselingh	20h+10h	2 Credits	q1
○ LBIO1310	Biological evolution ■	Caroline Nieberding René Rezsöházy	30h+10h	3 Credits	q2

**o Microbiologie et virologie**

○ LBIO1311	Microbiology and virology ■	Benoît Desguin Thomas Michiels	40h+15h	4 Credits	q1
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**o Anglais**

○ LANG1863	English for Students in Sciences (Upper-Intermediate level) ■	Ahmed Adriouche (coord.) Catherine Avery (coord.) Amandine Dumont (coord.) Sandrine Jacob (coord.) Sabrina Knorr Nevin Serbest Colleen Starrs Françoise Stas (coord.)	30h	2 Credits	q1 or q2
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### o Seminars and integrated exercises

o LVETE1300	Integrated Seminars 	André Lejeune André Moens (coord.) Melissa Page Muriel Quinet René Rezzohazy Patrice Soumillion	0h+25h	2 Credits	q2
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### o Sciences religieuses

L'étudiant choisit 2 crédits parmi les UE suivantes :

⌘ LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	15h	2 Credits	q1
⌘ LTECO2200	Societies-cultures-religions : Human Questions	Régis Burnet Dominique Martens	15h	2 Credits	q1 or q2
⌘ LTECO2300	Societies, cultures, religions : Ethical questions	Marcela Lobo Bustamante	15h	2 Credits	q1

### ⌘ Optional courses

These credits are not counted within the 120 required credits.

⌘ LSST1001	IngénieuxSud	Jean-Pierre Raskin	15h+45h	5 Credits	q1+q2
⌘ LSST1002M	Information and critical thinking - MOOC	Myriam De Kesel Jim Plumet Jean-François Rees	30h+15h	3 Credits	q2

### o Minor or additional module

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 2<sup>e</sup> et le 3<sup>e</sup> bloc annuel, de manière à ce que son programme annuel totalise 60 crédits.



## BIOL1BA - Information

### Admission

*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 requirements](#)
- [Specific requirement](#)
- [Special requirements](#)

### General 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 of 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 requirement

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

- 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 \(fr\)](#).

## Teaching method

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Des séances sont organisées au cours de la première année autour des questions de méthode de travail, par exemple la gestion du temps ou la manière d'aborder les différentes matières.

Outre des rapports à remettre ou des contrôles de connaissances au début de certaines séances de laboratoires, des interrogations obligatoires intervenant dans la note finale de chaque matière sont organisées après un mois de cours au premier quadrimestre.

Les exercices et laboratoires sont organisés en petits groupes et sont encadrés par des assistants. Les monitorats permettent à ceux qui le souhaitent de faire le point sur les matières vues au cours : les enseignants de chaque discipline répondent aux questions des étudiants et expliquent les points moins bien compris.

La plupart des enseignements disposent également d'un site internet ou est déposée une série d'informations utiles pour l'étude.

## Evaluation

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***The evaluation methods comply with the regulations concerning studies and exams. More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".***

Différentes modalités sont mises en oeuvre pour l'évaluation des connaissances et des compétences acquises au cours de la formation; elles sont adaptées aux types de prestations : évaluation continue notamment pour les exercices pratiques, évaluation des travaux personnels et de groupe, évaluation globale (écrite et/ou orale) durant les sessions d'examens.

## Mobility and/or Internationalisation outlook

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International mobility is recommended rather within the framework of master programmes. In special cases, however, it is possible to consider international mobility at the end of the bachelor's degree.

Moreover, participation in a short mobility can be envisaged at the end of the bachelor's degree in the framework of the Athens network <https://www.paristech.fr/fr/international/europe/athens>

## Possible trainings at the end of the programme

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Positioning of the programme within the University cursus

Whatever the minor or course blocks selected, the bachelor's degree in Biological Sciences automatically entitles access to one of the following masters :

- master's of Biochemistry and Molecular and Cellular Biology (120 credits)
- master's of Biology of Organisms and Ecology (120 credits)

With the minor in Chemistry and/or a programme of complementary training in Chemistry, the bachelor's degree in Biological Science also entitles access to the master's of Chemical Science.

The master's programme will be orientated toward the domains of application, research or teaching.

Other studies accessible upon completion of the programme

Master's of Biological Science (60 credits)

## Contacts

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### Curriculum Management

Entity

Structure entity

Denomination

Faculty

Sector

Acronym

SST/SC/BIOL

(BIOL)

Faculty of Science (SC)

Sciences and Technology (SST)

BIOL

Postal address

Croix du sud 4-5 - bte L7.07.05

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Tel: +32 (0) 10 47 34 89 - Fax: +32 (0) 10 47 35 15

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

Web site

Academic supervisor: [André Lejeune](#)

Jury

- President and study advisor: [André Lejeune](#)
- Secretary: [Bernard Hallet](#)

Useful Contact(s)

- Administrative manager for the student's annual program: [Nathalie Micha](#)
- Secretary of the School of biology: [Bernadette Gravy](#)

