

At Louvain-la-Neuve - 180 credits - 3 years - Day schedule - In FrenchDissertation/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

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 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 professionnels 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. 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 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

- Mandatory
- ⊗ Optional
- △ Not offered in 2021-2022
- ⊖ Not offered in 2021-2022 but offered the following year
- ⊕ Offered in 2021-2022 but not the following year
- △ ⊕ Not offered in 2021-2022 or the following year
- Activity with requisites
- ⊕ Open to international students
- ⊗ Not open to international 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
o Majeure (150 credits)						
o Mathématiques et statistiques (19 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		
○ LBIO1282	Management and exploration of biological data ■	Renate Wesselingh	FR [q1] [20h+15h] [2 Credits]		x	
○ LBIO1283	Statistical principles and biological data analysis ■	Nicolas Schtickzelle	FR [q2] [30h+40h] [4 Credits]		x	
○ LBIO1383	Statistical methods applied to biology ■	Anouar El Ghouch	FR [q2] [30h+40h] [5 Credits]			x
o Physique et biophysique (10 credits)						
○ LPHY1101	Physics 1	Thierry Fichetef	FR [q1] [30h+40h] [6 Credits]	x		
○ LPHY1103	Additional physics ■	Eduardo Cortina Gil Adrien Poncelet	FR [q2] [40h+10h] [4 Credits]		x	
o Sciences de la terre (5 credits)						
○ LBIR1130	Introduction to Earth sciences	Pierre Delmelle (coord.) Sophie Opfergelt Sophie Opfergelt (compensates Pierre Delmelle)	FR [q2] [30h+30h] [5 Credits]	x		
o Chimie et biochimie (24 credits)						
○ LCHM1111B	General chemistry	Michel Devillers	FR [q1] [45h+45h] [8 Credits]	x		
○ LCHM1141B	Organic chemistry	Benjamin Elias (coord.) Charles-André Fustin	FR [q2] [30h+30h] [6 Credits]	x		
○ LCHM1242	Chimie bio-organique ■	Benjamin Elias Patrice Soumillon	FR [q1] [30h+10h] [3 Credits]		x	
○ LCHM1271A	Eléments de biochimie ■	Patrice Soumillon	FR [q1] [30h+20h] [3 Credits]		x	
○ LCHM1371B	Metabolic biochemistry - lectures and lab ■	Melissa Page	FR [q2] [30h+15h] [4 Credits]			x
o Biologie générale (23 credits)						
○ LBIO1110	Life : diversity and evolution	Patrick Dumont Caroline Nieberding	FR [q1] [30h+10h] [4 Credits]	x		
○ LBIO1111	Cell and molecular biology	André Lejeune	FR [q1] [30h+20h] [5 Credits]	x		
○ LBIO1112	Organism biology : plants and animals	André Lejeune Jean-François Rees	FR [q2] [30h+20h] [5 Credits]	x		
○ LBIO1116	Scientific approach in biology	Muriel Quinet	FR [q2] [30h+30h] [5 Credits]	x		
○ LBIO1117	Ecology I	Renate Wesselingh	FR [q2] [30h+10h] [4 Credits]	x		

o Biologie cellulaire (2 credits)

○ LBIO1235	General cell physiology	Stanley Lutts Jean-François Rees	FR [q1] [15h+15h] [2 Credits]			X
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o Biologie végétale (12 credits)

○ LBIO1240	Plant physiology	Xavier Draye Stanley Lutts	FR [q1] [40h+15h] [4 Credits]			X
○ LBIO1242	Angiosperm's development, reproduction and systematic	André Lejeune André Lejeune (compensates Stanley Lutts) Muriel Quinet Muriel Quinet (compensates Stanley Lutts)	FR [q2] [30h+15h] [3 Credits]			X
○ LBIO1343	Plant morphogenesis: genetic control	François Chaumont	FR [q2] [30h+0h] [2 Credits]			X
○ LBIO1344	Plant diversity and physiological principles of plant interactions	Stanley Lutts	FR [q1] [30h+15h] [3 Credits]			X

o Biologie animale (16 credits)

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

o Génétique et biologie moléculaire (7 credits)

○ LBIO1221	Genetics	Charles Hachez André Lejeune	EN [q2] [20h+15h] [2 Credits]			X
○ LBIO1223	Molecular biology	Corentin Claeys Bouuaert (compensates Bernard Hallet)	FR [q2] [50h+20h] [5 Credits]			X
○ LBIO1323	Molecular signaling	Henri Batoko Patrick Dumont Géraldine Laloux	FR [q1] [30h+10h] [3 Credits]			X

o Ecologie (5 credits)

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

o Evolution (5 credits)

○ LBIO1355	Speciation : origin of biodiversity	Thierry Hance Renate Wesselingh	FR [q1] [20h+10h] [2 Credits]			X
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				Year		
				1	2	3
○ LBIO1310	Biological evolution 🟡	Caroline Nieberding René Rezsöházy	FR [q2] [30h+10h] [3 Credits]			x
○ Microbiologie et virologie (4 credits)						
○ LBIO1311	Microbiology and virology 🟡	Benoît Desguin Thomas Michiels	FR [q1] [40h+15h] [4 Credits]			x
○ Mycètes (2 credits)						
○ LBIO1213	Morphology and physiology of fungi 🟡	Stephan Declerck	FR [q1] [15h+10h] [2 Credits]			x
○ Anglais (7 credits)						
○ LANG1861	English: reading and listening comprehension of scientific texts	Fanny Desterbecq (coord.) Amandine Dumont Marc Pivnik	EN [q2] [10h] [2 Credits]	x		
○ LANG1862	English: reading and listening comprehension of scientific texts 🟡	Ahmed Adriouèche (coord.) Catherine Avery Amandine Dumont Ariane Halleux (coord.) Adrien Kefer (compensates) Laura Lievens	EN [q1] [30h] [3 Credits]		x	
○ LANG1863	English for Students in Sciences (Upper-Intermediate level) 🟡	Ahmed Adriouèche (coord.) Catherine Avery (coord.) Amandine Dumont (coord.) Sandrine Jacob (coord.) Sabrina Knorr Hila Peer Nevin Serbest Colleen Starrs Françoise Stas (coord.)	EN [q1 or q2] [30h] [2 Credits]			x
○ Seminars and integrated exercises (2 credits)						
○ LVETE1300	Integrated Seminars 🟡	André Lejeune André Moens Melissa Page Muriel Quinet René Rezsöházy Patrice Soumillion	EN [q2] [0h+25h] [2 Credits]			x
○ Méthodologie (2 credits)						
○ LBIO1115	Academic methodology	Myriam De Kesel Jean-François Rees	FR [q2] [10h+10h] [2 Credits]	x		
○ Sciences religieuses (2 credits)						
<i>L'étudiant choisit 2 crédits parmi les UE suivantes :</i>						
⊗ LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	FR [q1] [15h] [2 Credits]			x
⊗ LTECO2200	Societies-cultures-religions : Human Questions	Sébastien Dehorter (compensates) Régis Burnet Dominique Martens	FR [q1 or q2] [15h] [2 Credits]			x
⊗ LTECO2300	Societies, cultures, religions : Ethical questions	Marcela Lobo Bustamante	FR [q1] [15h] [2 Credits]			x
⊗ Optional courses						
<i>These credits are not counted within the 120 required credits.</i>						
⊗ LSST1001	IngénieuxSud	Stéphanie Merle Jean-Pierre Raskin (coord.)	FR [q1+q2] [15h+45h] [5 Credits]			x
⊗ LSST1002M	Information and critical thinking - MOOC	Myriam De Kesel Jean-François Rees	FR [q2] [30h+15h] [3 Credits]			x

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.

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-2021-appbiol]
- > [Minor in Chemistry](#) [en-prog-2021-minchim]
- > [Minor in Criminology](#) [en-prog-2021-mincrim]
- > [Minor in entrepreneurship \(*\)](#) [en-prog-2021-minmpme]
- > [Minor in Economics \(open\)](#) [en-prog-2021-minoeco]
- > [Minor in numerical technologies and society](#) [en-prog-2021-minstic]
- > [Minor in Biomedicine \(openness\)](#) [en-prog-2021-minsbim]

(*) 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:

- transform a prerequisite into a corequisite within the same year (to enable the student to continue his or her studies with a sufficient annual course load)
- require the student to combine registration in two separate CUs which it considers necessary from a pedagogical point of view.

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](#)
- 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

- LCHM1141B - 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 - lectures and lab
- 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 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 2021-2022
- ⊕ Not offered in 2021-2022 but offered the following year
- ⊖ Offered in 2021-2022 but not the following year
- △ ⊕ Not offered in 2021-2022 or the following year
- Activity with requisites
- 🌐 Open to international students
- 🚫 Not open to international 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

● 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]

o Physique et biophysique

● LPHY1101	Physics 1	Thierry Fichet	FR [q1] [30h+40h] [6 Credits]
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o Sciences de la terre

● LBIR1130	Introduction to Earth sciences	Pierre Delmelle (coord.) Sophie Opfergelt Sophie Opfergelt (compensates Pierre Delmelle)	FR [q2] [30h+30h] [5 Credits]
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o Chimie et biochimie

● LCHM1111B	General chemistry	Michel Devillers	FR [q1] [45h+45h] [8 Credits]
● LCHM1141B	Organic chemistry	Benjamin Elias (coord.) Charles-André Fustin	FR [q2] [30h+30h] [6 Credits]

o Biologie générale

○ LBIO1110	Life : diversity and evolution	Patrick Dumont Caroline Nieberding	EN [q1] [30h+10h] [4 Credits]
○ LBIO1111	Cell and molecular biology	André Lejeune	EN [q1] [30h+20h] [5 Credits]
○ LBIO1112	Organism biology : plants and animals	André Lejeune Jean-François Rees	EN [q2] [30h+20h] [5 Credits]
○ LBIO1116	Scientific approach in biology	Muriel Quinet	EN [q2] [30h+30h] [5 Credits]
○ LBIO1117	Ecology I	Renate Wesselingh	EN [q2] [30h+10h] [4 Credits]

o Anglais

○ LANG1861	English: reading and listening comprehension of scientific texts	Fanny Desterbecq (coord.) Amandine Dumont Marc Piwnik	EN [q2] [10h] [2 Credits]
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o Méthodologie

○ LBIO1115	Academic methodology	Myriam De Kesel Jean-François Rees	EN [q2] [10h+10h] [2 Credits]
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BIOL1BA - 2ND ANNUAL UNIT

- Mandatory
- ⊗ Optional
- △ Not offered in 2021-2022
- ⊖ Not offered in 2021-2022 but offered the following year
- ⊕ Offered in 2021-2022 but not the following year
- △ ⊕ Not offered in 2021-2022 or the following year
- Activity with requisites
- 🌐 Open to international students
- 🚫 Not open to international 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 ■	Eduardo Cortina Gil Adrien Poncelet	(FR) [q2] [40h+10h] [4 Credits]
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o Chimie et biochimie

○ LCHM1242	Chimie bio-organique ■	Benjamin Elias Patrice Soumillion	(FR) [q1] [30h+10h] [3 Credits]
○ LCHM1271A	Eléments de biochimie ■	Patrice Soumillion	(FR) [q1] [30h+20h] [3 Credits]

o Biologie cellulaire

○ LBIO1235	General cell physiology ■	Stanley Lutts Jean-François Rees	(FR) [q1] [15h+15h] [2 Credits]
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o Biologie végétale

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

o Biologie animale

○ LBIO1234A	Animal histology ■	Anne-Catherine Gérard (compensates Bernard Knoops)	(FR) [q1] [20h+10h] [2 Credits]
○ LBIO1230	Invertebrate biology ■	Jean-François Rees	(FR) [q1] [10h+40h] [4 Credits]

○ LBIO1236	Integrated animal biology : coordination, perception and locomotion	Frédéric Clotman (compensates) Bernard Knoops Patrick Dumont Patrick Dumont (compensates) Bernard Knoops Françoise Gofflot	PS [q2] [40h+10h] [4 Credits]
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○ Génétique et biologie moléculaire

○ LBIO1221	Genetics	Charles Hachez André Lejeune	PS [q2] [20h+15h] [2 Credits]
○ LBIO1223	Molecular biology	Corentin Claeys Bouuaert (compensates) Bernard Hallet	PS [q2] [50h+20h] [5 Credits]

○ Ecologie

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

○ LBIO1213	Morphology and physiology of fungi	Stephan Declerck	PS [q1] [15h+10h] [2 Credits]
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○ Anglais

○ LANG1862	English: reading and listening comprehension of scientific texts	Ahmed Adriouche (coord.) Catherine Avery Amandine Dumont Ariane Halleux (coord.) Adrien Kefer (compensates) Laura Lievens	PS [q1] [30h] [3 Credits]
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○ *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 2e et le 3e bloc annuel, de manière à ce que son programme annuel totalise 60 crédits.

BIOL1BA - 3RD ANNUAL UNIT

- Mandatory
- ⊗ Optional
- △ Not offered in 2021-2022
- ⊖ Not offered in 2021-2022 but offered the following year
- ⊕ Offered in 2021-2022 but not the following year
- △ ⊕ Not offered in 2021-2022 or the following year
- Activity with requisites
- 🌐 Open to international students
- 🚫 Not open to international 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 ■	Anouar El Ghouch	(FR) [q2] [30h+40h] [5 Credits]
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o Chimie et biochimie

○ LCHM1371B	Metabolic biochemistry - lectures and lab ■	Melissa Page	(FR) [q2] [30h+15h] [4 Credits]
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o Biologie végétale

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

o Biologie animale

○ LBIO1330	Integrated animal biology : reproduction and development ■	Patrick Dumont René Rezsóhazy	(FR) [q1] [30h+10h] [3 Credits]
○ LBIO1333	Integrated animal biology: circulation, respiration, digestion and excretion ■	Patrick Dumont Françoise Gofflot Françoise Gofflot (compensates René Rezsóhazy)	(FR) [q2] [30h+10h] [3 Credits]

o Génétique et biologie moléculaire

○ LBIO1323	Molecular signaling ■	Henri Batoko Patrick Dumont Géraldine Laloux	(FR) [q1] [30h+10h] [3 Credits]
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o Ecologie

○ LBIO1317	Functional ecology ■	Caroline Nieberding Renate Wesselingh	(FR) [q1] [30h] [2 Credits]
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o Evolution

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

o Microbiologie et virologie

o LBIO1311	Microbiology and virology 🇺🇸	Benoît Desguin Thomas Michiels	EN [q1] [40h+15h] [4 Credits]
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o Anglais

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

o LVETE1300	Integrated Seminars 🇺🇸	André Lejeune André Moens Melissa Page Muriel Quinet René Rezsöházy Patrice Soumillion	EN [q2] [0h+25h] [2 Credits]
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o Sciences religieuses

L'étudiant choisit 2 crédits parmi les UE suivantes :

⊗ LTECO2100	Sociétés, cultures, religions : Biblical readings	Hans Ausloos	EN [q1] [15h] [2 Credits]
⊗ LTECO2200	Societies-cultures-religions : Human Questions	Sébastien Dehorter (compensates) Régis Burnet Dominique Martens	EN [q1 or q2] [15h] [2 Credits]
⊗ LTECO2300	Societies, cultures, religions : Ethical questions	Marcela Lobo Bustamante	EN [q1] [15h] [2 Credits]

⊗ Optional courses

These credits are not counted within the 120 required credits.

⊗ LSST1001	IngénieursSud	Stéphanie Merle Jean-Pierre Raskin (coord.)	EN [q1+q2] [15h+45h] [5 Credits]
⊗ LSST1002M	Information and critical thinking - MOOC	Myriam De Kesel Jean-François Rees	EN [q2] [30h+15h] [3 Credits]

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

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](#)
- [Specific access requirements](#)
- [Access based on validation of professional experience](#)
- [Special requirements to access some programmes](#)

General access requirements

Except as otherwise provided by other specific legal provisions, admission to undergraduate courses leading to the award of a Bachelor's degree will be granted to students with one of the following qualifications :

1. A Certificate of Upper Secondary Education issued during or after the 1993-1994 academic year by an establishment offering full-time secondary education or an adult education centre in the French Community of Belgium and, as the case may be, approved if it was issued by an educational institution before 1 January 2008 or affixed with the seal of the French Community if it was issued after this date, or an equivalent certificate awarded by the Examination Board of the French Community during or after 1994;
2. A Certificate of Upper Secondary Education issued no later than the end of the 1992-1993 academic year, along with official documentation attesting to the student's ability to pursue higher education for students applying for a full-length undergraduate degree programme;
3. A diploma awarded by a higher education institution within the French Community that confers an academic degree issued under the above-mentioned Decree, or a diploma awarded by a university or institution dispensing full-time higher education in accordance with earlier legislation;
4. A higher education certificate or diploma awarded by an adult education centre;
5. A pass certificate for one of the [entrance examinations](#) organized by higher education institutions or by an examination board of the French Community; this document gives admission to studies in the sectors, fields or programmes indicated therein;
6. A diploma, certificate of studies or other qualification similar to those mentioned above, issued by the Flemish Community of Belgium, the German Community of Belgium or the Royal Military Academy;
7. A diploma, certificate of studies or other qualification obtained abroad and deemed equivalent to the first four mentioned above by virtue of a law, decree, European directive or international convention;

Note:

Requests for equivalence must be submitted to the Equivalence department ([Service des équivalences](#)) of the Ministry of Higher Education and Scientific Research of the French Community of Belgium in compliance with the official deadline.

The following two qualifications are automatically deemed equivalent to the Certificate of Upper Secondary Education (Certificat d'enseignement secondaire supérieur – CESS):

- European 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

- To be eligible to apply to a bachelor's programme, holder of a non-belgian degree who do not have Belgian student status must also:
 - have earned a secondary school degree within the last three years;
 - not already hold a bachelor's degree; and,
- 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).
- 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](#).

- Not to have obtained a secondary education diploma for more than 3 years maximum. Example: for an admission application for the academic year 2021-2022, you must have obtained your diploma during the academic years 2018-2019, 2019-2020 or 2020-2021. In the French Community of Belgium, the academic year runs from September 14 to September 13.[l_information/2021/common-bachelor/](#)

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 \(fr\)](#).

Teaching method

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

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

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

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

Curriculum Management

Entity

Structure entity

Denomination

Faculty

Sector

Acronym

SST/SC/BIOL

(BIOL)

Faculty of Science (SC)

Sciences and Technology (SST)

BIOL

Postal address

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1348 Louvain-la-Neuve

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

Website

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

Academic supervisor: [André Lejeune](#)

Jury

- President and study advisor: [André Lejeune](#)
- Secretary: [Melissa Page](#)

Useful Contact(s)

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

