Bachelor in Biology
Option Charleroi

The 2022-2023 programme is subject to change. It is provided for information purposes only.

Programme mnemonic
BA-BIOL
› Option Charleroi: BA-BIOLC

Exists also in
› Option Bruxelles: BA-BIOLB

Studies level
Bachelor

Learning language
french

Schedule
office hours

Studies categories / subcategories
Sciences and technics / Agronomy and bioengineering and Sciences and technics / Sciences

Campus
Charleroi Ville Haute and Plaine

Programme objectives
› Acquiring the general scientific training (in Mathematics, Chemistry, Physics and Earth science) necessary for the study of Biology and that raise awareness of the students in all aspects of the progress of science.
› Appropriating all the fundamental concepts of Biology and using them in new situations.
› Acquiring the principles of scientific approach.
› Acquiring an experimental training in the key disciplines of Biology.
› Learning to master the peculiarities of scientific language and writing, and communicating to a target audience appropriately.
› Awareness of societal issues of Biology and Science (values, moral, ethic, and legal issues).

This bachelor organised in Charleroi is designed for students who want to discover several scientific orientation in order to take a final decision for their study choice. Passing the 60 credits of the first year gives the access, without condition, to ULB and UMONS programs in:
› Biological sciences;
› Chemical sciences;
› Biomedical sciences;
› Pharmaceutical sciences.

The student will then be able to obtain a Master in Biochemistry (Molecular and Cellular Biology), a Master in Biology of Organisms and Ecology, but also (depending on the reinforcement chosen) in Biomedical Sciences, Chemical Sciences, Pharmaceutical Sciences.

Programme's added value
The specificities of this POLYVALENT training is that it allows the student, at the end of his first block of bachelor, to choose between several sectors: Biology, Chemistry, Pharmacy, Biomedical Sciences. This training is therefore aimed at students who wish to discover several orientations before making their final choice. This first block will allow them unconditional access to the ULB or UMONS to the Biology, Chemistry, Pharmacy, Biomedical Sciences courses, provided they pass the 60 credits making up BLOCK 1.

Practical laboratory training modules allow the student to carry out experiments and analyze the results.

Most molecular biology laboratories of the Faculty of Sciences of the ULB are grouped at the Biopark, a major centre of research and economic development located at Gosselies, near Charleroi. Many practical works are organized on this site. Shuttles are provided for student travel from Charleroi to Gosselies.

Teaching methods
The education are divided into:
Succeed in your studies

ULB offers a number of activities and resources that can help you develop a successful strategy before or during your studies. You can make the transition to higher education easier by attending preparatory courses, summer classes, and information and orientation sessions, even before you start your studies at ULB.

During your studies, many people at ULB are there specifically to help you succeed: support staff in each faculty, (inter-)faculty guidance counsellors, tutors, and experts in academic methodology.

International/Openness

Job opportunities

By prolonging the BA by a MA in Biochemistry and Molecular and Cellular biology, Biology of organisms and Ecology, Biomedical sciences, or Bioinformatics and Modelling, students may pursue careers in the following areas:

- **Industrial area** (pharmaceutical, biotechnology, food processing, environmental technology): research and development, responsible for management, communication and/or publishing; scientific advisor for the sale of high-tech products;
- **Education**: teaching in secondary schools and at higher non-university level
- **Academia**: teaching and research in universities and high schools;
- **Public area** (local, regional, federal, international) and nongovernmental organizations (NGO): business related to conservation, management and valorization of resources of biological diversity; to environment and sustainable development, quality control, biosafety, forensics, continuing education, dissemination of science;

After the Master, the student can continue his education by achieving a PhD, for which fellowships are available.

By prolonging the BA by a MA in Biochemistry and Molecular and Cellular Biology, Biology of organisms and Ecology, or Bioinformatics and Modelling, the student will address to one of the following careers:

- Research (in companies, universities, public research institutions)
- Teacher (secondary schools, higher non-university level)
- Project manager for the conservation and management of natural resources, in NGOs, administrations and international institutions
- Responsible for educational projects in the field of natural sciences in museums, ASBL, botanical gardens
- Scientific advisor for the sale of products derived from biotechnology, pharmaceutical companies
- Responsible for the monitoring of analyses (clinical, quality control, biodiversity, bioremediation, biosecurity, forensic, companies in biotechnology and genomics...)
- Instructor in in-service training activities
- Responsible for management, communication and/or scientific publishing in a company (pharmaceutical, biotechnology, environmental technologies...) or a public institution
- Etc....

Contacts

✉️ info.charleroi@ulb.be
ን info.charleroi@ulb.be

Jury President
Colin Van Dyck

Jury Secretary
Sophie BONNOT
During the BA, you will receive a double competence:

- a general education in Mathematics, Physics, Chemistry and Earth sciences;
- a specific education in Life sciences: Zoology, Botany, Ecology, Physiology, Genetics, Biochemistry, Cell biology, Molecular biology, Microbiology (viruses and bacteria).

The program covers two main topics:

- Biology of organisms: It concerns with the knowledge and understanding of biological diversity, its evolution and its role in ecosystem functioning; therefore it studies the organization, physiology, and ecology of various types of organisms (animals, plants, fungi, microorganisms);
- Molecular biology: It deals with the understanding of biological phenomena through the study of molecules and cells constituting organisms. It also contributes to the study of pathologies (molecular causes and development of therapies).

The importance of these two topics is substantially equivalent (50/50%).

### Bloc 1 | BA-BIOLC | BA-BIOL

#### Enseignements obligatoires

Ce programme est organisé en collaboration avec l’UMons (Université de Mons). Pour avoir accès au programme complet, veuillez consulter le site suivant: https://web.umons.ac.be/fs/fr/formations/sciences-biologiques-3/

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
<th>Coordinator(s)</th>
<th>Credits</th>
<th>Lectures</th>
<th>Tutorial classes</th>
<th>Practical work</th>
<th>Terms</th>
<th>Language</th>
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</thead>
<tbody>
<tr>
<td>BIOL-F1703</td>
<td>Biologie I</td>
<td>Denis LAFONTAINE (Coordinator) and Sophie BONNOT</td>
<td>6</td>
<td>40h</td>
<td>12h</td>
<td>18h</td>
<td>first term</td>
<td>French</td>
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<tr>
<td>BIOL-Y226</td>
<td>Projet interbloc en Biologie 1</td>
<td>Sophie BONNOT (Coordinator), Jean-Christophe DE BISEAU D’HAUTEVILLE, Pierrick UZUREAU, Guillaume CAULIER, Basile CHRISTOU, Emilie DUTHOU and Alexia LOURTIE</td>
<td>2</td>
<td>24h</td>
<td></td>
<td></td>
<td>first and second terms</td>
<td>French</td>
</tr>
<tr>
<td>CHIM-F1704</td>
<td>Chimie organique</td>
<td>Jérémy ODENT</td>
<td>6</td>
<td>32h</td>
<td>20h</td>
<td></td>
<td>second term</td>
<td>French</td>
</tr>
<tr>
<td>CHIM-Y1708</td>
<td>Chimie générale I</td>
<td>Jérémy ODENT and Damien Thiry</td>
<td>10</td>
<td>60h</td>
<td>25h</td>
<td>35h</td>
<td>first term</td>
<td>French</td>
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<tr>
<td>MATH-Y1706</td>
<td>Bases mathématiques pour disciplines scientifiques (avec remise à niveau)</td>
<td>Colin Van Dyck (Coordinator)</td>
<td>5</td>
<td>30h</td>
<td>30h</td>
<td></td>
<td>first term</td>
<td>French</td>
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<tr>
<td>PHYS-Y1707</td>
<td>Physique I</td>
<td>Colin Van Dyck (Coordinator) and Mathieu STOCK</td>
<td>8</td>
<td>60h</td>
<td>10h</td>
<td>20h</td>
<td>first term</td>
<td>French</td>
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</table>

**Enseignements optionnels**

Les étudiants sont priés de choisir un module de 23 crédits parmi les 4 modules repris ci-dessous

An alternative chosen from the four following

#### Module chimie

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
<th>Coordinator(s)</th>
<th>Credits</th>
<th>Lectures</th>
<th>Tutorial classes</th>
<th>Practical work</th>
<th>Terms</th>
<th>Language</th>
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<tbody>
<tr>
<td>BIOL-F1708</td>
<td>Biologie II</td>
<td>Denis LAFONTAINE (Coordinator), Sophie BONNOT and Christiane ZORBAS</td>
<td>4</td>
<td>30h</td>
<td>10h, field trips: 8h</td>
<td></td>
<td>second term</td>
<td>French</td>
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<tr>
<td>BMOL-Y110</td>
<td>Biochimie</td>
<td>Sabrina BOUSBATA (Coordinator)</td>
<td>1</td>
<td>15h</td>
<td></td>
<td></td>
<td>second term</td>
<td>French</td>
</tr>
</tbody>
</table>
CHIM-Y200  Chimie générale II | Jérémy ODENT and Damien Thiry
- 6 credits [lecture: 35h, tutorial classes: 12h, practical work: 25h]
- second term
- French

MATH-Y200  Outils mathématiques des sciences de la vie (Partie A) | Colin Van Dyck (Coordinator)
- 7 credits [lecture: 42h, tutorial classes: 42h]
- second term
- French

PHYS-Y200  Physique II | Colin Van Dyck (Coordinator) and Mathieu STOCK
- 5 credits [lecture: 30h, tutorial classes: 10h, practical work: 20h]
- second term
- French

or

Module Pharma

BIOL-F1708  Biologie II | Denis LAFONTAINE (Coordinator), Sophie BONNOT and Christiane ZORBAS
- 5 credits [lecture: 30h, tutorial classes: 10h, practical work: 12h, field trips: 8h]
- second term
- French

BIOL-F1709  Biochimie | Sabrina BOUSBATA (Coordinator)
- 3 credits [lecture: 29h, practical work: 10h]
- second term
- French

BIOL-F1710  Botanique | Pierre Jacques MEERTS (Coordinator), Sophie BONNOT and Jason VLEMINCKX
- 5 credits [lecture: 30h, practical work: 20h]
- second term
- French

BIOL-F1712  Anatomie / Embryologie | Eric BELLEFROID (Coordinator), Xavier CATTEAU and Daniel RADBATA
- 4 credits [lecture: 42h, practical work: 14h]
- second term
- French

CHIM-Y201  Chimie générale II | Jérémy ODENT and Damien Thiry
- 6 credits [lecture: 35h, tutorial classes: 12h, practical work: 25h]
- second term
- French

or

Module Biomed

BIOL-F1708  Biologie II | Denis LAFONTAINE (Coordinator), Sophie BONNOT and Christiane ZORBAS
- 5 credits [lecture: 30h, tutorial classes: 10h, practical work: 12h, field trips: 8h]
- second term
- French

BIOL-F1709  Biochimie | Sabrina BOUSBATA (Coordinator)
- 3 credits [lecture: 29h, practical work: 10h]
- second term
- French

BIOL-F1712  Anatomie / Embryologie | Eric BELLEFROID (Coordinator), Xavier CATTEAU and Daniel RADBATA
- 4 credits [lecture: 42h, practical work: 14h]
- second term
- French

CHIM-Y201  Chimie générale II | Jérémy ODENT and Damien Thiry
- 6 credits [lecture: 35h, tutorial classes: 12h, practical work: 25h]
- second term
- French

or

Module Biologie

BIOL-F1708  Biologie II | Denis LAFONTAINE (Coordinator), Sophie BONNOT and Christiane ZORBAS
- 5 credits [lecture: 30h, tutorial classes: 10h, practical work: 12h, field trips: 8h]
- second term
- French

BIOL-F1710  Botanique | Pierre Jacques MEERTS (Coordinator), Sophie BONNOT and Jason VLEMINCKX
- 4 credits [lecture: 30h, practical work: 20h]
- second term
- French

BMOL-Y110  Biochimie | Sabrina BOUSBATA (Coordinator)
- 1 credit [lecture: 15h]
- second term
- French

CHIM-Y201  Chimie générale II | Jérémy ODENT and Damien Thiry
- 6 credits [lecture: 35h, tutorial classes: 12h, practical work: 25h]
- second term
- French
Enseignements obligatoires
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BIOL-F2702 Métabolisme du carbone et de l’azote | Abel GARCIA-PINO (Coordinator), Sabrina BOUSBATA and Baptiste LEROY
5 credits [lecture: 30h, tutorial classes: 20h]  first term  French

BIOL-F2703 Physiologie et histologie animale | Jacob SOUOPGUI (Coordinator), Sophie BONNOT and Anna Maria MARINI
5 credits [lecture: 48h, practical work: 12h]  first term  French

BIOL-F2704 Biologie cellulaire et moléculaire | David PEREZ-MORGÀ (Coordinator), Sophie BONNOT and Sophie Bouchat
8 credits [lecture: 40h, tutorial classes: 10h, practical work: 40h]  first and second terms  French

BIOL-F2705 Microbiologie | Laurence VAN MELDEREN (Coordinator), Sophie BONNOT and Sophie Bouchat
5 credits [lecture: 24h, tutorial classes: 8h, practical work: 24h]  second term  French

BIOL-Y204 Anglais | Amy GORTON
5 credits [lecture: 24h, tutorial classes: 24h]  academic year  French

BIOL-Y205 Bio-informatique et sciences des données | Raphaël CONOTTE, Guyliann ENGELS and Philippe GROSJEAN
5 credits [practical work: 70h]  academic year  French

BIOL-Y209 Zoologie | Guillaume CAULIER
4 credits [lecture: 24h, practical work: 24h]  first term  French

BIOL-Y210 Compléments de biochimie | Sabrina BOUSBATA (Coordinator) and Abel GARCIA-PINO
5 credits [lecture: 30h, tutorial classes: 40h]  first term  French

BIOL-Y230 Projet interbloc en Biologie 2 | Sophie BONNOT (Coordinator), Jean-Christophe DE BISEAU D’HAUTEVILLE, Pierrick UZUREAU, Guillaume CAULIER, Basile CHRISTOU, Emilie DUTHOU and Alexia LOURTIE
2 credits [project: 24h]  first and second terms  French

GEOL-F2700 Sciences de la Terre et géobiologie | Steeve BONNEVILLE (Coordinator), Sandra ARNDT, Karen FONNIJN, Nadine MATTIELLI and Pierre REGNIER
5 credits [lecture: 15h, field trips: 36h]  second term  French

An alternative chosen from the two following

Module de rattrapage pour les étudiants ayant suivi l’option BioMED en BAB1

BIOL-F1710 Botanique | Pierre Jacques MEERTS (Coordinator), Sophie BONNOT and Jason VLEMINCKX
4 credits [lecture: 30h, practical work: 20h]  second term  French

MATH-Y200 Outils mathématiques des sciences de la vie (Partie A) | Colin Van Dyck (Coordinator)
7 credits [lecture: 42h, tutorial classes: 42h]  second term  French

or

Module de rattrapage pour les étudiants ayant suivi l’option Biologie en BAB1

BIOL-F1712 Anatomie / Embryologie | Eric BELLEFROID (Coordinator), Xavier CATTEAU and Daniel RADBATA
5 credits [lecture: 42h, practical work: 14h]  second term  French
Physique II | Colin Van Dyck (Coordinator) and Mathieu STOCK

6 credits [lecture: 30h, tutorial classes: 10h, practical work: 20h]  second term  French
# Programme

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<tr>
<th>Code</th>
<th>Programme</th>
<th>Coordinateurs</th>
<th>Crédits</th>
<th>Durée</th>
<th>Langue</th>
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<tbody>
<tr>
<td>BIOL-F3701</td>
<td>Génétique I</td>
<td>Bruno ANDRE (Coordinator)</td>
<td>5</td>
<td>1er et 2ème</td>
<td>French</td>
</tr>
<tr>
<td>BIOL-F3702</td>
<td>Neurosciences</td>
<td>Maud MARTIN (Coordinator)</td>
<td>5</td>
<td>2ème</td>
<td>French</td>
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<tr>
<td>BIOL-F3703</td>
<td>Mécanismes et épistémologie de l'évolution</td>
<td>Jean-Christophe DE BISEAU D'HAUTEVILLE (Coordinator)</td>
<td>5</td>
<td>1er et 2ème</td>
<td>French</td>
</tr>
<tr>
<td>BIOL-F3704</td>
<td>Immunologie et microbiologie</td>
<td>Fabienne ANDRIS (Coordinator) and Laurence VAN MELDEREN</td>
<td>5</td>
<td>1er et 2ème</td>
<td>French</td>
</tr>
<tr>
<td>BIOL-F3705</td>
<td>Biologie du développement</td>
<td>Eric BELLEFROID (Coordinator)</td>
<td>5</td>
<td>1er et 2ème</td>
<td>French</td>
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<tr>
<td>BIOL-Y206</td>
<td>Bio-informatique et sciences des données II</td>
<td>Raphaël CONOTTE</td>
<td>5</td>
<td>plein annee</td>
<td>French</td>
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<td>BIOL-Y207</td>
<td>Biodiversité, évolution et écologie</td>
<td>Guillaume CAULIER and Jérôme DELROISSE</td>
<td>5</td>
<td>2ème</td>
<td>French</td>
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<tr>
<td>BIOL-Y301</td>
<td>Pharmaco-toxicologie</td>
<td>Sébastien BOUTRY (Coordinator)</td>
<td>5</td>
<td>1er et 2ème</td>
<td>French</td>
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<td>BIOL-Y302</td>
<td>Physiopathologie</td>
<td></td>
<td>5</td>
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<tr>
<td>BIOL-Y330</td>
<td>Projet interbloc en Biologie 3</td>
<td>Jean-Christophe DE BISEAU D'HAUTEVILLE (Coordinator), Sophie BONNOT, Pierrick UZUREAU, Guillaume CAULIER, Basile CHRISTOU, Emilie DUTHOU and Alexia LOURTIE</td>
<td>4</td>
<td>1er et 2ème</td>
<td>French</td>
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<tr>
<td>BIOL-Y331</td>
<td>Interactions hôtes pathogènes</td>
<td>Fabienne WILLEMS (Coordinator) and Eric MURAILLE</td>
<td>5</td>
<td>2ème</td>
<td>French</td>
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<tr>
<td>BMOL-F3700</td>
<td>Méthodologie de biochimie, biologie cellulaire et moléculaire</td>
<td>Guillaume OLDENHOVE (Coordinator) and Ruddy WATTIEZ</td>
<td>6</td>
<td>1er et 2ème</td>
<td>French</td>
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