## Programme mnemonic

**BA-BIOL**  
† Option Bruxelles: BA-BIOLB

### Exists also in

† Option Charleroi: BA-BIOLC

### 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).

## Programme’s added value

Each year of the program includes several modules of practical training in laboratories where the students learn how to perform experiments and analyze results.

The training includes excursions to conduct field studies (observation, exploration, collection, analysis...)

In unit 2 and 3 a scientific training in English is provided.

In unit 2, computer training is provided.

Unit 1 comprises optional courses in earth and environmental sciences

In unit 3, students carry out a personal project of “Research and scientific communication”.

The ULB is internationally recognized for the excellence of its research teams in the field of Life Sciences.

The ULB has a Museum of Zoology (with the possibility of observation of living and preserved specimens) and an experimental botanical garden, freely available to students, and widely used in original teaching approaches.

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.

## Teaching methods

The education are divided into:

† Lectures (48%)

† Exercises (18%)

† Lab work (24%)

† Personal work, including a project Research and scientific communication (8%)

† Field works (3%).

## 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**

The training provided by the ULB is internationally renowned. Thanks to the many agreements between the ULB and institutions worldwide, students may pursue part of their studies abroad.

**Job opportunities**

By prolonging the BA by a MA in Biochemistry and Molecular and Cellular biology, Biology of organisms and Ecology, 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 in scientific publishing in a company (pharmaceutical, biotechnology, environmental technologies...) or a public institution
- Etc....

**Contacts**

- ba-biol@ulb.be

**Jury Presidents**

Cécile MOUCHERON (Bruxelles / bloc 1) and Jacob SOUOPGUI (Bruxelles / bloc 2 & 3)

**Jury Secretaries**

Martine VERCAUTEREN (Bruxelles / bloc 1) and Denis FOURNIER (Bruxelles / bloc 2 & 3)
Bachelor in Biology
Option Bruxelles

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-BIOLB | BA-BIOL**

### Cours obligatoires

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Coordinator(s)</th>
<th>Credits</th>
<th>Teaching Time</th>
<th>Year</th>
<th>Language</th>
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<tbody>
<tr>
<td>BIOL-F103</td>
<td><strong>Bases de la biologie des organismes</strong></td>
<td>Martine VERCAUTEREN (Coordinator) and Karine VAN DONINCK</td>
<td>10</td>
<td>60h, 24h, 12h</td>
<td>Academic year</td>
<td>French</td>
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<tr>
<td>BIOL-F104</td>
<td><strong>Bases moléculaires du vivant</strong></td>
<td>Cyril GUEYDAN (Coordinator), Mélanie BOECKSTAENS and Véronique KRUYS</td>
<td>10</td>
<td>64h, 20h, 12h</td>
<td>Academic year</td>
<td>French</td>
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<tr>
<td>CHIM-F101</td>
<td><strong>Chimie générale</strong></td>
<td>Thierry VISART DE BOCARME (Coordinator), François RENIERS and Laurence RONGY</td>
<td>15</td>
<td>84h, 48h</td>
<td>First and second terms</td>
<td>French</td>
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<td>CHIM-F102</td>
<td><strong>Chimie organique 1</strong></td>
<td>Cécile MOUCHERON (Coordinator)</td>
<td>5</td>
<td>30h, 18h</td>
<td>Second term</td>
<td>French</td>
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<tr>
<td>ENVI-F1001</td>
<td><strong>Sciences de la Terre, Environnement et Société</strong></td>
<td>Pierre REGNIER (Coordinator), Jean-Michel DECROLY and Frank PATTYN</td>
<td>5</td>
<td>48h, 12h</td>
<td>First and second terms</td>
<td>French</td>
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<tr>
<td>MATH-F112</td>
<td><strong>Mathématiques 1</strong></td>
<td>Michele D'ADDERIO (Coordinator), Julie DE SAEDELEER, Dimitri LEEMANS and Bruno PREMOSELLI</td>
<td>10</td>
<td>60h, 60h</td>
<td>First and second terms</td>
<td>French</td>
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<td>PHYS-F104</td>
<td><strong>Physique 1</strong></td>
<td>Stéphane DETOURNAY (Coordinator), Barbara CLERBAUX, Sébastien CLESSE, Denis HAUMONT and Michele SFERRAZZA</td>
<td>5</td>
<td>40h, 20h</td>
<td>First term</td>
<td>French</td>
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</tbody>
</table>
Bachelor in Biology
Option Bruxelles

Bloc 2 | BA-BIOLB | BA-BIOL

Cours obligatoires

- **BIOL-F201** Evolution et diversité des eucaryotes : botanique | Pierre Jacques MEERTS (Coordinator) and Jason VLEMINCKX
  - 5 credits [lecture: 48h, practical work: 12h]  
  - first and second terms  
  - French

- **BIOL-F202** Evolution et diversité des eucaryotes : métazoaires | Jean-François FLOT (Coordinator) and Jean-Christophe DE BISEAU D’HAUTEVILLE
  - 5 credits [lecture: 60h]  
  - second term  
  - French

- **BIOL-F204** Microbiologie moléculaire et cellulaire | Laurence VAN MELDEREN (Coordinator) and Anne OP DE BEECK
  - 5 credits [lecture: 32h, practical work: 16h]  
  - second term  
  - French

- **BIOL-F208** Biochimie et physiologie de la cellule | Vincent RAUSSENS (Coordinator), Véronique KRUYS and Maud MARTIN
  - 5 credits [lecture: 60h]  
  - first term  
  - French

- **BIOL-F209** Travaux pratiques de botanique et zoologie | Jean-Christophe DE BISEAU D’HAUTEVILLE (Coordinator), Jean-François FLOT and Pierre Jacques MEERTS
  - 5 credits [practical work: 60h]  
  - first and second terms  
  - French

- **BIOL-F210** Evolution et diversité des bactéries et archées | Isabelle GEORGE (Coordinator) and Jean-François FLOT
  - 5 credits [lecture: 32h, practical work: 16h]  
  - first term  
  - French

- **BIOL-F319** Travaux pratiques de biochimie | Guillaume OLDENHOVE (Coordinator) and David PEREZ-MORGA
  - 5 credits [practical work: 60h]  
  - first term  
  - French

- **CHIM-F201** Chimie analytique 1 | Thomas DONEUX (Coordinator)
  - 5 credits [lecture: 24h, practical work: 36h]  
  - first term  
  - French

- **LANG-F201** Anglais scientifique | Alexander CORNFORD (Coordinator)
  - 5 credits [tutorial classes: 48h]  
  - second term  
  - English

- **MATH-F116** Mathématiques 2 | Dimitri LEEMANS (Coordinator), Céline AZIZIEH and Joel FINE
  - 5 credits [lecture: 30h, tutorial classes: 30h]  
  - second term  
  - French

- **PHYS-F205** Physique 2 | Ioana Codrina MARIS (Coordinator)
  - 5 credits [lecture: 24h, tutorial classes: 14h, practical work: 22h]  
  - first term  
  - French

Cours optionnels

Choisir exactement 5 cours (un au bloc 2 et quatre au bloc 3, dont au moins un des deux cours ETHI-F201 et/ou ETHI-F301)

One course chosen from the following

- **BIOL-F303** Laboratoires de biologie moléculaire | David PEREZ-MORGA (Coordinator) and Guillaume OLDENHOVE
  - 5 credits [practical work: 48h]  
  - second term  
  - French

- **BIOL-F304** Evolution et diversité des arthropodes et des vertébrés | Yves ROISIN (Coordinator)
  - 5 credits [lecture: 28h, practical work: 28h, seminars: 4h]  
  - second term  
  - French

- **BIOL-F305** Botanique, phytogéographie et ethnoécologie | Farid DAHDOUH-GUEBAS (Coordinator)
  - 5 credits [lecture: 24h, practical work: 15h, field trips: 12h]  
  - second term  
  - English/French
<table>
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<tr>
<th>Code</th>
<th>Course Title</th>
<th>Coordinator(s)</th>
<th>Credits</th>
<th>Week(s)</th>
<th>Language</th>
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<tbody>
<tr>
<td>BIOL-F314</td>
<td>Projet de recherche et communication scientifique</td>
<td>Denis FOURNIER (Coordinator) and Louis DROOGMANS</td>
<td>5</td>
<td>academic year</td>
<td>French</td>
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<tr>
<td>BIOL-F320</td>
<td>Travaux pratiques de développement et histophysiologie animale</td>
<td>Eric BELLEFROID (Coordinator), Anna Maria MARINI and Jacob SOUOPGUI</td>
<td>5</td>
<td>second term</td>
<td>French</td>
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<tr>
<td>BIOL-F321</td>
<td>Spécificités du développement végétal</td>
<td>Mondher EL JAZIRI (Coordinator) and Marie BAUCHER</td>
<td>5</td>
<td>first term</td>
<td>French</td>
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<tr>
<td>BIOL-F412</td>
<td>Biotechnologies animales et végétales</td>
<td>Nathalie VERBRUGGEN (Coordinator) and Jacob SOUOPGUI</td>
<td>5</td>
<td>second term</td>
<td>French</td>
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<tr>
<td>ETHI-F201</td>
<td>Sciences, éthique, histoire et société</td>
<td>Grégoire Wallenborn (Coordinator) and Eric MURAILLE</td>
<td>5</td>
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<td>French</td>
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<tr>
<td>ETHI-F301</td>
<td>Compléments de sciences, éthique histoire et société</td>
<td>Patrick MARDULYN (Coordinator) and Grégoire Wallenborn</td>
<td>5</td>
<td>first term</td>
<td>French</td>
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<tr>
<td>INFO-F206</td>
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<td>Jean CARDINAL (Coordinator)</td>
<td>5</td>
<td>first term</td>
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<td>PHYS-F517</td>
<td>How To Make (almost) Any Experiment Using Digital Fabrication</td>
<td>Denis TERWAGNE (Coordinator)</td>
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<td>second term</td>
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<tr>
<td>TRAN-F201</td>
<td>Introduction aux enjeux de la durabilité</td>
<td>Chiara ARMENI (Coordinator) and Wouter ACHTEN</td>
<td>5</td>
<td>second term</td>
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<th>Practical Work</th>
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<tr>
<td>BIOL-F301</td>
<td>Physiologie et développement des plantes</td>
<td>Nathalie VERBRUGGEN (Coordinator)</td>
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<td>BIOL-F302</td>
<td>Génétique</td>
<td>Bruno ANDRE (Coordinator)</td>
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<td>BIOL-F308</td>
<td>Mécanismes de l'évolution biologique</td>
<td>Patrick MARDULYN (Coordinator) and Karine VAN DONINCK</td>
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<td>BIOL-F309</td>
<td>Ecologie</td>
<td>Pierre Jacques MEERTS (Coordinator), Isabelle GEORGE and Jason VLEMINCKX</td>
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<td>BIOL-F310</td>
<td>Biodiversité et conservation</td>
<td>Bruno DANIS (Coordinator), Isabelle GEORGE, Pierre Jacques MEERTS and Sonia VAN DER HOFSTEVEN</td>
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<td>BIOL-F318</td>
<td>Développement et histophysiologie animale</td>
<td>Jacob SOUOPGUI (Coordinator), Eric BELLEFROID and Anna MARINI</td>
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<td>LANG-F301</td>
<td>Anglais scientifique II</td>
<td>Alexander CORNFORD (Coordinator)</td>
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<td>MATH-F003</td>
<td>Biostatistiques</td>
<td>Thomas VERDEBOUT (Coordinator)</td>
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## Cours optionnels

**Four courses chosen from the following**

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<tr>
<th>Code</th>
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<tr>
<td>BIOL-F303</td>
<td>Laboratoires de biologie moléculaire</td>
<td>David PEREZ-MORGA (Coordinator) and Guillaume OLDENHOVE</td>
<td>5</td>
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<td>BIOL-F304</td>
<td>Evolution et diversité des arthropodes et des vertébrés</td>
<td>Yves ROISIN (Coordinator)</td>
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<td>Botanique, phytogéographie et ethnoécologie</td>
<td>Farid DAHDOUH-GUEBAS (Coordinator)</td>
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