Bachelor in Biology
Option Bruxelles

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

Campus
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 (including dissections).
 › 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.

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
Choose
The information and guidance counsellors at the InfOR-études [https://www.ulb.be/en/studies-info-desk-1] service will help you choose your studies throughout the year.

Succeed

Get help
Apply for financial aid, look for accommodation or a student job, get support [https://www.ulb.be/fr/aides-services-
et-accompagnement/aid-services-and-support-1] for your specific needs.

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
Cyril GUEYDAN (Bruxelles / bloc 1) and Jacob SOUOPGUI (Bruxelles / bloc 2 & 3)

Jury Secretaries
Christian HERMANS (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 (including dissections), 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**

**BIOL-F103**

**Bases de la biologie des organismes** | Martine VERCAUTEREN (Coordinator) and Karine VAN DONINCK

- 10 credits [lecture: 60h, tutorial classes: 24h, practical work: 24h, field trips: 12h]
- academic year
- French

**BIOL-F104**

**Bases moléculaires du vivant** | Cyril GUEYDAN (Coordinator), Mélanie BOECKSTAENS and Véronique KRUYS

- 10 credits [lecture: 64h, tutorial classes: 20h, practical work: 12h]
- academic year
- French

**CHIM-F101**

**Chimie générale** | Laurence RONGY (Coordinator), François RENIERS and Thierry VISART DE BOCARME

- 15 credits [lecture: 84h, tutorial classes: 48h, practical work: 48h, project: 40h]
- first and second terms
- French

**CHIM-F102**

**Chimie organique 1** | Cécile MOUCHERON (Coordinator)

- 5 credits [lecture: 30h, tutorial classes: 18h]
- second term
- French

**ENVI-F1001**

**Sciences de la Terre, Environnement et Société** | Pierre REGNIER (Coordinator), Jean-Michel DECROLY and Frank PATTYN

- 5 credits [lecture: 48h, field trips: 12h]
- first and second terms
- French

**MATH-F112**

**Mathématiques 1** | Dimitri LEEMANS (Coordinator), Michele D'ADDERIO and Bruno PREMOSELLI

- 10 credits [lecture: 60h, tutorial classes: 60h]
- first and second terms
- French

**PHYS-F104**

**Physique 1** | Barbara CLERBAUX (Coordinator), Sébastien CLESSE and Michele SFERRAZZA

- 5 credits [lecture: 40h, tutorial classes: 20h]
- first term
- French
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-Christophe DE BISEAU D’HAUTEVILLE (Coordinator) and Jean-François FLOT
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: 36h]  second term  French

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

BIOL-F209 Travaux pratiques de botanique et zoologie | Jean-Christophe DE BISEAU D’HAUTEVILLE (Coordinator), Jean-François FLOT, Pierre Jacques MEERTS and Jason VLEMINCKX
5 credits [practical work: 60h]  second term  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-F211 Travaux pratiques de biochimie | Guillaume OLDENHOVE (Coordinator) and David PEREZ-MORGA
5 credits [practical work: 48h]  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 1 | Alexander CORNFORD (Coordinator), David Albert BEST and Hugh MURPHY
5 credits [tutorial classes: 24h]  first term  English

MATH-F116 Mathématiques 2 | Michele D’ADDERIO (Coordinator), Jennifer ALONSO GARCIA, Joel FINE and Laurent LA FUENTE-GRAVY
5 credits [lecture: 30h, tutorial classes: 30h]  academic year  French

PHYS-F205 Physique 2 | Michel TYTGAT (Coordinator) and Michele SFERRAZZA
5 credits [lecture: 24h, tutorial classes: 14h, practical work: 22h]  first term  French

Cours optionnels

Choisir exactement 3 cours (un au bloc 2 et deux 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 DAHDUH-GUEBAS (Coordinator)
5 credits [lecture: 24h, practical work: 15h, field trips: 12h]  second term  English/French
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Coordinator(s)</th>
<th>Credits</th>
<th>Type(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>Project: 60h</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>Lecture: 24h, Practical Work: 24h</td>
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<td>ETHI-F201</td>
<td>Sciences, éthique, histoire et société</td>
<td>Grégoire Wallenborn (Coordinator) and Eric Muraille</td>
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<td>Lecture: 48h</td>
<td>French</td>
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<td>ETHI-F301</td>
<td>Science et Société : analyse de controverses scientifiques</td>
<td>Patrick Mardulyn (Coordinator) and Grégoire Wallenborn</td>
<td>5</td>
<td>Lecture: 24h, Project: 70h</td>
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<td>INFO-F206</td>
<td>Informatique</td>
<td>Olivier Markowitch (Coordinator)</td>
<td>5</td>
<td>Lecture: 24h, Tutorial Classes: 12h, Project: 24h</td>
<td>French</td>
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<tr>
<td>PHYS-F105</td>
<td>La structure de l’univers</td>
<td>Alain JorisSEN (Coordinator) and Rodrigo Alvarez</td>
<td>5</td>
<td>Lecture: 48h</td>
<td>French</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>
<td>5</td>
<td>Lecture: 24h, Practical Work: 24h</td>
<td>French</td>
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<td>TRAN-F201</td>
<td>Introduction aux enjeux de la durabilité</td>
<td>Wouter Achten (Coordinator) and Chiara Armeni</td>
<td>5</td>
<td>Lecture: 24h</td>
<td>French</td>
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Bachelor in Biology
Option Bruxelles

Bloc 3 | BA-BIOLB | BA-BIOL | 2023-2024

Cours obligatoires

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<tr>
<th>Code</th>
<th>Course Title (French)</th>
<th>Coordinator (Coordinators)</th>
<th>Credits</th>
<th>Lecture Time</th>
<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>36h [lecture]</td>
<td>24h [practical work]</td>
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<tr>
<td>BIOL-F302</td>
<td>Génétique</td>
<td>Bruno ANDRE (Coordinator)</td>
<td>5</td>
<td>30h [lecture]</td>
<td>24h [practical work]</td>
<td>first term</td>
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<tr>
<td>BIOL-F308</td>
<td>Mécanismes de l'évolution biologique</td>
<td>Patrick MARDULYN (Coordinator) and Karine VAN DONINCK</td>
<td>5</td>
<td>24h [lecture]</td>
<td>12h [tutorial classes]</td>
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<td>BIOL-F309</td>
<td>Ecologie</td>
<td>Pierre Jacques MEERTS (Coordinator) and Jason VLEMINCKX</td>
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<td>24h [lecture]</td>
<td>12h [tutorial classes]</td>
<td>first term</td>
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<td>BIOL-F310</td>
<td>Biodiversité et conservation</td>
<td>Pierre Jacques MEERTS and Sonia VANDERHOEVEN</td>
<td>5</td>
<td>18h [lecture]</td>
<td>18h [field trips]</td>
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<td>BIOL-F318</td>
<td>Histolophysiologie et développement animal</td>
<td>Jacob SOUOPGUI (Coordinator), Eric BELLEFROID and Anna Maria MARINI</td>
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<td>30h [lecture]</td>
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<td>BIOL-F322</td>
<td>Biotechnologies</td>
<td>Benoit VANHOLLEBEKE (Coordinator) and Nathalie VERBRUGGEN</td>
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<td>BIOL-F324</td>
<td>Physique bioinspirée</td>
<td>Denis TERWAGNE (Coordinator)</td>
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<td>30h [lecture]</td>
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<td>LANG-F301</td>
<td>Anglais scientifique II</td>
<td>Hugh MURPHY (Coordinator), David Albert BEST and Alexander CORNFORD</td>
<td>5</td>
<td>48h [tutorial classes]</td>
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<td>MATH-F316</td>
<td>Biogéostatistiques</td>
<td>Thomas VERDEBOUT (Coordinator)</td>
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<td>30h [lecture]</td>
<td>24h [tutorial classes]</td>
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Cours optionnels

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<tr>
<td>BIOL-F303</td>
<td>Laboratoires de biologie moléculaire</td>
<td>David PEREZ-MORGÁ (Coordinator) and Guillaume OLDENHOVE</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>BIOL-F305</td>
<td>Botanique, phytogéographie et ethnoécologie</td>
<td>Farid DAHDOUH-GUEBAS (Coordinator)</td>
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<td>BIOL-F320</td>
<td>Travaux pratiques d'histophysiologie et développement animal</td>
<td>Eric BELLEFROID (Coordinator), Anna Maria MARINI and Jacob SOUOPGUI</td>
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