Master in Biochemistry and Molecular and Cell Biology
Focus Teaching

Programme mnemonic
MA-BMOL
Focus Teaching: M-BMOLD

Exists also in
Focus Research: M-BMOLA
Focus Research (Charleroi): M-BMOLC

Studies level
Master 120 credits

Learning language
french

Schedule
office hours

Studies category / subcategory
Sciences and technics / Agronomy and bioengineering

Campus
Plaine and Solbosch

Programme objectives

The Master programme provides fundamental courses in biochemistry and molecular and cellular biology (90 credits) in the following disciplines:

- Molecular biology of the cell (cell growth and signaling, internal organisation and physiology, molecular biology of the gene)
- Molecular biology of multicellular organisms (immunology, developmental biology, neurobiology)
- Molecular microbiology (bacteriology, virology, parasitology)

In addition, students must choose one of two focuses (30 credits):

- The research focus provides additional courses in bioinformatics and structural biology, as well as additional practical training in the department’s research laboratories. In addition to the master thesis, this cursus also offer the possibility to perform a 10 week-traineeship in a distinct laboratory.
- The teaching focus is intended for future teachers, with active and passive courses as well as work placements.

Both focuses allow students to pursue a PhD programme.

Programme's added value

Starting in the first year of the Master programme, students have access to a wide range of experimental approaches in the department’s various research laboratories (5–10 credits). In addition, they are encouraged to analyse original scientific articles and are trained for scientific writing and communication tools.

In the second year, students are expected to attend many seminars and take part in journal clubs. Each students must also give a seminar on their Master’s dissertation.

During the second year, students have an opportunity to take part in an exchange programme, by completing a research work placement (in a foreign country or in Belgium, in a university or a private company).

While they complete their dissertation, students may attend professional training sessions related to their research topic, offered by the ‘Biopark training unit’.

The research programme on molecular biology was developed at ULB in the 1960s, and has since earned an international reputation.

Classes are given by several researchers from the Biopark, located in Gosselies, near Charleroi. The Biopark is a centre of excellence in molecular biology, hosting 700 researchers with expertise on a wide array of topics. The Biopark includes academic departments, spin offs, and pharmaceutical companies, on a campus that offers attractive possibilities for research-intensive programmes.

The department of molecular biology has concluded several partnerships with research institutes (IMI) and centres (CMMI).

Teaching methods

- Regular classes (35–40%, depending on electives)
- Practical training activities in research laboratories (15–20%, depending on electives)
- Computer-aided training in bioinformatics and structural biology (2% in the research focus)
- Personal assignments (15%, including writing laboratory reports and journal club presentations)
- Master's dissertation: students are required to conduct original research projects in faculty laboratories, and to attend and host research seminars
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

1st year: Erasmus exchange programme (for 1 or 2 terms)
2nd year: opportunity to complete the work placement and/or dissertation in a foreign country.
Active participation of teachers from the Centre of Microscopy and Molecular Imaging (CMMI)

Job opportunities

Scientific research (in companies, universities, hospitals, etc.)
Training (teaching biology or chemistry in school) or continuing education
Management and/or communication in the fields of health, biotechnologies, food processing, clinical research, quality control, etc.
Graduates in BBMC can pursue the following careers:

- Research in private companies (pharmacology, biotechnologies, food processing, etc.)
- Academic research (universities, high schools)
- Teaching in secondary schools or higher education institutions
- Continuing education
- Communication and/or scientific publishing
- Forensic science analysis
- Organising science outreach or awareness activities
- Scientific counselling for products within a company
- Quality control (hospitals, private companies, public QC services, etc.)
- Monitoring analyses in the fields of biodiversity, bioremediation, biosafety, etc.
- Person in charge of monitoring analyses in the fields of biodiversity, bioremediation, biosafety, ...

Contacts

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https://sciences.ulb.be/departement-biologie-moleculaire

Jury President
FABIENNE ANDRIS

Jury Secretary
Laurence VAN MELDEREN
Master in Biochemistry and Molecular and Cell Biology
Focus Teaching

Bloc 1 | M-BMOLD | MA-BMOL

Tronc commun

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Coordinator(s)</th>
<th>Credits [lecture: hours]</th>
<th>Language</th>
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<tbody>
<tr>
<td>BMOL-F4002</td>
<td>Biologie Moléculaire de la cellule</td>
<td>Bernard ROBAYE (Coordinator), Bruno ANDRE, Cyril GUEYDAN and Véronique KRUYS</td>
<td>10 [lecture: 72h]</td>
<td>French</td>
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<td>BMOL-F4003</td>
<td>Biotechnologie, Enzymologie</td>
<td>Benoît VANHOLLEBEKE (Coordinator) and Louis DROOGMANS</td>
<td>5 [lecture: 48h]</td>
<td>French</td>
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<tr>
<td>BMOL-F4006</td>
<td>Biologie des systèmes complexes: Neurobiologie, Immunologie et Génétique du Développement</td>
<td>Fabienne ANDRIS (Coordinator), Eric BELLEFROID, Alban DE KERCHOVE D'EXAERDE, Stanislas GORIELY and Serge SCHIFFMANN</td>
<td>10 [lecture: 72h, personal assignments: 30h]</td>
<td>French</td>
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<tr>
<td>BMOL-F4007</td>
<td>Microbiologie moléculaire</td>
<td>Luc VANHAMME (Coordinator), Mélanie BOECKSTAENS, Abel GARCIA-PINO and Carine VAN LINT</td>
<td>10 [lecture: 72h, personal assignments: 30h]</td>
<td>French</td>
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<tr>
<td>BMOL-F4008</td>
<td>Travaux pratiques de biologie moléculaire 2</td>
<td>Fabienne ANDRIS (Coordinator), Eric BELLEFROID, Sabrina BOUSBATA, David PEREZ-MORGAS, Jacob SOUOPGUI, Laurence VAN MELDEREN and Benoît VANHOLLEBEKE</td>
<td>5 [practical work: 48h]</td>
<td>French</td>
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<tr>
<td>BMOL-F414</td>
<td>Scientific writing</td>
<td>Abel GARCIA-PINO (Coordinator) and Etienne MEYLAN</td>
<td>5 [practical work: 48h]</td>
<td>English</td>
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Courses spécifiques

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<th>Code</th>
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<th>Coordinator(s)</th>
<th>Credits [lecture: hours]</th>
<th>Language</th>
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<tbody>
<tr>
<td>BIOL-F4004</td>
<td>Didactique des sciences biologiques et biologie du secondaire</td>
<td>Jean-Christophe DE BISEAU D’HAUTEVILLE (Coordinator)</td>
<td>5 [lecture: 44h, tutorial classes: 16h]</td>
<td>French</td>
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<td>BIOL-F447</td>
<td>Stages et pratique réflexive I</td>
<td>Jean-Christophe DE BISEAU D’HAUTEVILLE (Coordinator)</td>
<td>5 [seminars: 12h, work placement: 48h, cours global: 60h]</td>
<td>French</td>
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<tr>
<td>PEDA-E510</td>
<td>Pédagogie et didactique, aspects généraux</td>
<td>Thomas BARRIER (Coordinator) and Nathanaël FRIANT</td>
<td>5 [lecture: 60h]</td>
<td>French</td>
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Master in Biochemistry and Molecular and Cell Biology

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**Bloc 2 | M-BMOLD | MA-BMOL**

### Tronc commun

**MEMO-F510**  
Séminaires de recherche  
5 credits [personal assignments: 60h]  
First and second terms  
French

**MEMO-F511**  
Travail bibliographique en Biologie moléculaire | Etienne MEYLAN (Coordinator)  
10 credits [personal assignments: 120h]  
First and second terms  
French

**MEMO-F517**  
Mémoire | Cyril GUEYDAN (Coordinator)  
30 credits [mfte: 360h]  
First and second terms

### Cours spécifiques

**BIOL-F513**  
Stages et pratique réflexive II | Jean-François FLOT (Coordinator)  
5 credits [work placement: 60h]  
Academic year  
French

**BIOL-F514**  
Stages et pratique réflexive III | Jean-Christophe DE BISEAU D'HAUTEVILLE (Coordinator)  
5 credits [work placement: 60h]  
Academic year  
French

**EDUC-E520**  
Aspects socio-historiques, psychologiques, culturels, éthiques et de neutralité de l'enseignement | Jose-Luis WOLFS (Coordinator), Alain COLSOUL, Philippe VENNE and Pascal VREBOS  
5 credits [lecture: 60h]  
Academic year  
French