Master in Biochemistry and Molecular and Cell Biology
Focus Research (Charleroi)

The 2023-2024 programme is subject to change. It is provided for information purposes only.

Programme mnemonic
MA-BMOL
➤ Focus Research (Charleroi): M-BMOLC
Exists also in
➤ Focus Research: M-BMOLA
➤ Focus Teaching: M-BMOLD

Studies level
Master 120 credits

Learning language
English and French

Schedule
Office hours

Studies category / subcategory
Sciences and technics / Agronomy and bioengineering

Campus
Campus Biopark Gosselies and U Mons

Programme objectives
The ULB-UMONS Master in Biochemistry and Molecular and Cell Biology is organized in Charleroi. The lectures will be followed remotely, and the practical courses will take place in the laboratories of ULB in Gosselies or of UMONS. This Master focuses on the molecular and cellular understanding of organisms, both unicellular and multicellular. This programme covers many areas of life sciences such as biochemistry, cell biology, genetics, microbiology and molecular biology. In addition, this Master specifically addresses techniques related to molecular imaging.

Programme's added value
The ULB-UMONS Master in Biochemistry and Molecular and Cell Biology will allow:
➤ To build, develop and maintain knowledge in this field and its related disciplines;
➤ To act as a scientific actor for the resolution of complex problems;
➤ To design and implement scientific research projects;
➤ To communicate in a language adapted to the context and to the public nature;
➤ To develop in compliance with the ethical rules related to the field of expertise;
➤ To have legal training in the use of laboratory animals.

Please note that the learner will acquire their skills through:
- Lectures followed remotely. Either from the student's home, or from a classroom in Charleroi;
- Practical courses and exercises at UMONS or at the Biopark (IBMM, CMMI), located in Gosselies, near Charleroi (https://biopark.be/en). 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. This campus therefore offers many possibilities in terms of training and employment
  - A laboratory internship
  - A Master thesis: students are required to conduct original research projects in faculty laboratories, and to attend and host research seminars.

Teaching methods
➤ Regular classes, lectures (28%)
➤ Practical training activities in research laboratories (8%)
➤ Face-to-face exercises (5%)
Personal assignments (8%, including writing laboratory reports and journal club presentations)
Laboratory internship (14%)
Master's dissertation and personal assignments (37%)

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

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. ic services of control of quality, ...
Person in charge of monitoring analyses in the fields of biodiversity, bioremediation, biosafety, ...

Contacts

master.bbmc.charleroi@ulb.be
+32 65 37 38 15

Jury President
Mélanie BOECKSTAENS

Jury Secretary
Lionel TAFFOREAU
**Cours obligatoires**

**BINF-Y401**  |  Bioinformatique  
Olivier Delgrange (Coordinator)  
2 credits [lecture: 15h]  
first term  
French

**BINF-Y402**  |  Sciences des données – 3 : exploration et prédiction  
Philippe GROSJEAN  
3 credits [tutorial classes: 36h]  
first term  
French

**BIOL-Y240**  |  Compléments de biologie cellulaire  
Lionel TAFFOREAU (Coordinator)  
3 credits [lecture: 20h]  
first term  
French

**BMOL-F007**  |  Lectures d'articles en biologie moléculaire  
Fabienne ANDRIS (Coordinator)  
5 credits [project: 80h]  
second term  
French

**BMOL-F4009**  |  Imagerie moléculaire préclinique sur le vivant  
Gaëtan VAN SIMAEYS (Coordinator)  
3 credits [lecture: 16h, practical work: 8h]  
first term  
French

**BMOL-F4010**  |  TP de biologie moléculaire ou imagerie  
Fabienne ANDRIS (Coordinator), Eric BELLEFROID, Mélanie BOECKSTAENS, Sabrina BOUSBATA, Abel GARCIA-PINO, Anna Maria MARINI, Jacob SOUOPGUI, Laurence VAN MELDEREN and Benoît VANHOLLEBEKE  
5 credits [practical work: 48h]  
second term  
French

**BMOL-Y403**  |  Formation exp. Animale  
Alexandre LEGRAND (Coordinator)  
5 credits [lecture: 68h, tutorial classes: 12h]  
first term  
French

**BMOL-Y404**  |  Phylogénie moléculaire des organismes  
Igor Eeckhaut (Coordinator) and Jérôme Delroisse  
2 credits [lecture: 15h]  
first term  
French

**BMOL-Y405**  |  Propriété intellectuelle et intelligence stratégique  
Marlène Genlain (Coordinator)  
2 credits [lecture: 13h, tutorial classes: 4h]  
first term  
French

**BMOL-Y406**  |  Protéomie structurale et fonctionnelle  
Ruddy WATTIEZ (Coordinator)  
4 credits [lecture: 30h]  
first term  
French

**BMOL-Y407**  |  Techniques modernes en biochimie, biologie et imagerie moléculaire  
Lionel TAFFOREAU (Coordinator)  
3 credits [lecture: 20h]  
first term  
French

**BMOL-Y409**  |  Techniques d'imagerie médicale: principe et applications  
Sophie LAURENT (Coordinator) and Sébastien BOUTRY  
3 credits [lecture: 23h]  
first term  
French

**BMOL-Y410**  |  Traineeship in cell imaging  
Sébastien BOUTRY (Coordinator)  
5 credits [practical work: 48h]  
second term  
English

**Cours optionnels**

**Three courses chosen from the following**

**BMOL-F006** (optional)  |  Microbiologie moléculaire  
Carine VAN LINT (Coordinator), Mélanie BOECKSTAENS, Abel GARCIA-PINO, Dukas Jurénas, Anna Maria MARINI and Laurence VAN MELDEREN  
5 credits [lecture: 40h]  
second term  
French
<table>
<thead>
<tr>
<th>BMOL-F418 (optional)</th>
<th>Immunologie et biologie du cancer</th>
<th>Etienne MEYLAN (Coordinator), Fabienne ANDRIS and Stanislas GORIELY</th>
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<td>5 credits [lecture: 40h]</td>
<td>second term French</td>
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<td>BMOL-F419 (optional)</td>
<td>Neuroscience et biologie cardiovasculaire</td>
<td>Maud MARTIN (Coordinator), Eric BELLEFROID, Alban DE KERCHOVE D'EXAERDE, Serge SCHIFFMANN and Benoît VANHOLLEBEKE</td>
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<td>5 credits [lecture: 52h]</td>
<td>second term French</td>
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<td>BMOL-F420 (optional)</td>
<td>Relations hôtes-vecteurs-parasites: notions approfondies</td>
<td>Sabrina BOUSBATA (Coordinator) and Luc VANHAMME</td>
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<td>5 credits [lecture: 36h, practical work: 24h]</td>
<td>second term French</td>
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<td>BMOL-F421 (optional)</td>
<td>Questions d'actualités en Biologie moléculaire et Physiologie cellulaire</td>
<td>Véronique KRUYS (Coordinator), Bruno ANDRE and Cyril GUEYDAN</td>
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<td>5 credits [lecture: 12h, tutorial classes: 12h]</td>
<td>second term French</td>
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Cours obligatoires

**MEMO-F510**  
**Séminaires de recherche** | Laurence VAN MELDEREN (Coordinator)  
2 credits [seminars: 20h]  
first and second terms  
French

**MEMO-F542**  
**Mémoire** | Mélanie BOECKSTAENS (Coordinator)  
30 credits [mfe/tfe: 900h]  
academic year  
French

**MEMO-Y003**  
**Travail bibliographique** | Jean TAFFOREAU  
10 credits [project: 48h]  
academic year  
French

**STAG-Y001**  
**Stage en entreprise ou labo** | Ruddy WATTIEZ (Coordinator)  
18 credits [work placement: 400h]  
academic year  
French