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

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 UMONS

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 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. (sic services of control of quality, ...)
- Person in charge of monitoring analyses in the fields of biodiversity, bioremediation, biosafety, ...

Contacts
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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 Bellfroid, Mélanie Boeckstans, Sabrina Boussbata, 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 Boeckstans, Abel Garcia-Pino, Dukas Jurénas, Anna Maria Marini and Laurence Van Melderen  
5 credits [lecture: 40h]  
second term  
French
BMOL-F418 (optional)

**Immunologie et biologie du cancer**  |  Etienne MEYLAN (Coordinator), Fabienne ANDRIS and Stanislas GORIELY

- 5 credits [lecture: 40h]
- Second term
- French

BMOL-F419 (optional)

**Neuroscience et biologie cardiovasculaire**  |  Maud MARTIN (Coordinator), Eric BELLEFROID, Alban DE KERCHOVE D’EXAERDE, Serge SCHIFFMANN and Benoît VANHOLLEBEKE

- 5 credits [lecture: 52h]
- Second term
- French

BMOL-F420 (optional)

**Relations hôtes-vecteurs-parasites: notions approfondies**  |  Sabrina BOUSBATA (Coordinator) and Luc VANHAMME

- 5 credits [lecture: 36h, practical work: 24h]
- Second term
- French

BMOL-F421 (optional)

**Questions d’actualités en Biologie moléculaire et Physiologie cellulaire**  |  Véronique KRUYS (Coordinator), Bruno ANDRE and Cyril GUEYDAN

- 5 credits [lecture: 12h, tutorial classes: 12h]
- Second term
- French
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Bloc 2 | M-BMOLC | MA-BMOL

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