Master in Biochemistry and Molecular and Cell Biology
Focus Research

The 2022-2023 programme is subject to change. It is provided for information purposes only.

Programme mnemonic
MA-BMOL
Focus Research: M-BMOLA

Exists also in
Focus Teaching: M-BMOLD
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
Charleroi Gosselies, Plaine, Solbosch and U Mons

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 or optional course from the entire University catalog. In addition to the master thesis, this cursus also offers 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 student 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. (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
FABIENNE ANDRIS

Jury Secretary
Laurence VAN MELDEREN
Master in Biochemistry and Molecular and Cell Biology
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Bloc 1 | M-BMOLA | MA-BMOL

Tronc commun

BMOL-F001 Physiologie Cellulaire | Bruno ANDRE (Coordinator) and Bernard ROBAYE
○ 5 credits [lecture: 48h] ○ first term ○ French

BMOL-F002 Biotechnologie et Biologie moléculaire du gène | Benoît VANHOLLEBEKE (Coordinator), Cyril GUEYDAN and Véronique KRUYS
○ 5 credits [lecture: 48h] ○ first term ○ French

BMOL-F003 Biologie Structurale, Enzymologie et Protéomie | Louis DROOGMANS (Coordinator), Sabrina BOUSBATA and Abel GARCIA-PINO
○ 5 credits [lecture: 44h, tutorial classes: 8h] ○ first term ○ French

BMOL-F004 Génétique du Développement et Neurobiologie | Serge SCHIFFMANN (Coordinator), Eric BELLEFROID, Alban DE KERCHOVE D'EXAERDE and Benoît VANHOLLEBEKE
○ 5 credits [lecture: 48h] ○ second term ○ French

BMOL-F005 Immunologie - Parasitologie | Fabienne ANDRIS (Coordinator), Mélanie BOECKSTAENS, Stanislas GORIELY and Luc VANHAMME
○ 5 credits [lecture: 48h] ○ second term ○ French

BMOL-F006 Microbiologie moléculaire | Carine VAN LINT (Coordinator) and Abel GARCIA-PINO
○ 5 credits [lecture: 48h] ○ second term ○ French

BMOL-F007 Lectures d'articles en biologie moléculaire | Fabienne ANDRIS (Coordinator)
○ 5 credits [personal assignments: 48h] ○ second term ○ French

BMOL-F4008 Travaux pratiques de biologie moléculaire 2 | Fabienne ANDRIS (Coordinator), Eric BELLEFROID, Sabrina BOUSBATA, Maud MARTIN, Jacob SOUOPGUI, Laurence VAN MELDEREN and Benoît VANHOLLEBEKE
○ 5 credits [practical work: 48h] ○ second term ○ French

BMOL-F414 Scientific writing | Abel GARCIA-PINO (Coordinator) and Etienne MEYLAN
○ 5 credits [practical work: 48h] ○ first term ○ English

Cours spécifiques

BMOL-F4005 Travaux pratiques de biologie moléculaire 1 | Fabienne ANDRIS (Coordinator), Bruno ANDRE, Mélanie BOECKSTAENS, Louis DROOGMANS, Cyril GUEYDAN, Véronique KRUYS, Denis LAFONTAINE, Anna Maria MARINI, Maud MARTIN, David PEREZ-MORGA, Bernard ROBAYE, Carine VAN LINT, Laurence VAN MELDEREN and René WINTJENS
○ 5 credits [practical work: 48h] ○ first term ○ French

BMOL-F413 Bioinformatics | Matthieu DEFRANCE (Coordinator) and Jean-François FLOT
○ 5 credits [lecture: 36h, tutorial classes: 12h] ○ second term ○ French

Cours optionnels

One course chosen from the following

BMOL-F008 Travaux pratiques de biologie moléculaire - 3 | Fabienne ANDRIS (Coordinator), Bruno ANDRE, Sabrina BOUSBATA, Louis DROOGMANS, Cyril GUEYDAN, Véronique KRUYS, Denis LAFONTAINE, Anna Maria MARINI, David PEREZ-MORGA, Bernard ROBAYE, Carine VAN LINT, Laurence VAN MELDEREN and René WINTJENS
○ 5 credits [practical work: 48h] ○ first term ○ French
BMOL-F009  CIVIS- Mobility Blend Immuno-oncology

5 credits [lecture: 28h]  first term  French
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Bloc 2 | M-BMOLA | MA-BMOL

Tronc commun

MEMO-F510  Séminaires de recherche | Fabienne ANDRIS (Coordinator)
5 credits [mfe/tfe: 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-F516  Mémoire | Fabienne ANDRIS (Coordinator)
30 credits [mfe/tfe: 360h]  first and second terms

Cours spécifiques

STAG-F022  Stage de recherche en biologie moléculaire | Sabrina BOUSBATA (Coordinator)
15 credits [work placement: 180h]  academic year  French