



Master in Biochemistry and Molecular and Cell Biology

Focus Research (Charleroi)

The 2024-2025 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 UMONS

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.

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.

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

Take part in preparatory courses [<https://www.ulb.be/en/studies-info-desk-1>] or get help to succeed [<https://www.ulb.be/en/studies-info-desk-1>], before or during your studies.

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

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Jury President

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Jury Secretary

Lionel TAFFOREAU

Master in Biochemistry and Molecular and Cell Biology

Focus Research (Charleroi)

Bloc 1 | M-BMOLC | MA-BMOL

Cours obligatoires

- BINF-Y401** [Bioinformatique](#) | Jérôme Delroisse (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](#) | Laurence VAN MELDEREN (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, Sabrina BOUSBATA, Abel GARCIA-PINO, 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, tutorial classes: 12h] 📅 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: 42h, seminars: 10h] 📅 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 KRUYIS (Coordinator), Bruno ANDRE and Cyril GUEYDAN
⌚ 5 credits [lecture: 12h, tutorial classes: 30h] 📅 second term 🗨 French

Master in Biochemistry and Molecular and Cell Biology

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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](#)
🕒 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