

BBMC2M -

7. understand ethical questions in life sciences

7.1 critically put into perspective the impact of science and technology on the evolution of societies

7.2 evaluate the ethical and societal issues of new biotechnologies and experimental practices in biology, involving, among other things, animal experimentation

7.3 recognize scientific fraud and plagiarism as unacceptable behavior in science

8. if he chooses the In-depth goal, enrich his knowledge, perfect his training in the experimental approach, technologies and written and oral scientific communication with a view to a career in research

8.1 demonstrate experience acquired through practical training on targeted scientific questions within host laboratories in different universities in the Wallonia-Brussels federation

8.2 use the skills acquired during the Master's degree in a new and supportive environment within a national or international research institution

9. if he chooses the Specialized purpose, enrich his knowledge in the field of biotechnologies and confront the reality of the company

9.1 demonstrate the acquisition of cutting-edge methodological and technological approaches in relation to entrepreneurial practices

9.2 use the skills acquired during the Master's degree in a new and promising environment within a company in the broad sense, whether it is a laboratory in an industry in the pharmaceutical sector, the biotechnology sector, or a consultancy organization, a management or research programming office

10. if he chooses the Didactic aim, mobilize the necessary skills to effectively begin the profession of upper secondary teaching, in biology, and be able to progress positively there.

10.1 intervene in a school context, in partnership with different stakeholders.

10.2 teach in authentic and varied situations.

10.3 exercise a reflective outlook and project oneself into a logic of continuous development.

--> For more details, consult the Aggregation of upper secondary education (biological sciences).

Programme structure

The program includes common subjects of at least 54 credits, a finality (30 credits) and elective courses.

The student chooses one of the following focuses : research, professional (biotechnology) or teaching.

Students who enrol in the specialized "biotechnology" program have the opportunity to follow the [interdisciplinary training in business creation \(INEO\)](#) as part of their master's program. However, this training is only accessible following a selection procedure based on an application file and an interview. At the end of this training, the student will have acquired and developed analytical and reflective tools that will help him/her to understand entrepreneurial processes, create or take over a business or develop entrepreneurial projects within existing organizations.

BBMC2M Programme

Detailed programme by subject

CORE COURSES

The core study is taught in English with the exception of some social studies courses, English-speaking students are invited to take LSC2220.

- Mandatory
- ⊗ Optional
- △ Not offered in 2024-2025
- ⊕ Not offered in 2024-2025 but offered the following year
- ⊖ Offered in 2024-2025 but not the following year
- △ ⊕ Not offered in 2024-2025 or the following year
- Activity with requisites
- 🌐 Open to incoming exchange students
- 🚫 Not open to incoming exchange students
- (FR) Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

				Year	
				1	2
● LBBMC2101	Structural and functional biochemistry	Pierre Morsomme Patrice Soumillion	EN [q1] [36h+6h] [4 Credits] 🌐	x	
● LBRMC2201	Bioinformatics : DNA and protein sequence analysis	Michel Ghislain	EN [q1] [30h+15h] [4 Credits] 🌐 > French-friendly	x	
● LBBMC2102	Integrated molecular and cellular biology	Henri Batoko Bernard Hallet Pierre Morsomme Melissa Page	EN [q1] [30h] [3 Credits] 🌐	x	
● LBBMC2103	Rotation	Françoise Gofflot Bernard Hallet Pierre Morsomme Melissa Page Patrice Soumillion	EN [q1] [12h+36h] [8 Credits] 🌐	x	
● LBBMC2997	Master's thesis - Part 1	Henri Batoko (coord.) Pierre Morsomme (coord.)	EN [] [] [10 Credits] 🌐	x	
● LBBMC2998	Master's thesis - Part 2	Henri Batoko (coord.) Pierre Morsomme (coord.)	EN [] [] [17 Credits] 🌐		x
● LBBMC2201	Thesis tutorial	Patrick Dumont Anne-Julie Toubeau	EN [q1] [15h] [3 Credits] 🌐		x

● Biochemistry and molecular biology techniques

at least one of the following three courses:

Minimum 3 credit(s)

⊗ LBIRC2101	Biochemical analysis	François Chaumont Pierre Morsomme (coord.)	FR [q1] [22.5h+30h] [4 Credits] 🌐 > English-friendly	x	
⊗ LBRMC2101	Genetic engineering	François Chaumont (coord.) Charles Hachez	FR [q1] [37.5h+15h] [5 Credits] 🌐 > English-friendly	x	

LIST OF FOCUSES

The research focus is fully taught in English.

The professional focus is accessible to English-speaking students but they will have to choose their courses carefully because some are taught in French.

The teaching focus aims to teach in secondary education in the French Community of Belgium, therefore it is accessible only to students who have a good knowledge of French.

- > [Research Focus](#) [en-prog-2024-bbmc2m-lbbmc200a]
- > [Teaching Focus](#) [en-prog-2024-bbmc2m-lbbmc200d]
- > [Professional Focus : Biotechnology](#) [en-prog-2024-bbmc2m-lbbmc200s]

RESEARCH FOCUS [30.0]

- Mandatory
 - ✘ Optional
 - △ Not offered in 2024-2025
 - ⊙ Not offered in 2024-2025 but offered the following year
 - ⊕ Offered in 2024-2025 but not the following year
 - △ ⊕ Not offered in 2024-2025 or the following year
 - Activity with requisites
 - 🌐 Open to incoming exchange students
 - 🚫 Not open to incoming exchange students
 - [FR] Teaching language (FR, EN, ES, NL, DE, ...)
-

- Mandatory
- ⊗ Optional
- △ Not offered in 2024-2025
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- △ ⊕ Not offered in 2024-2025 or the following year
- Activity with requisites
- ⊕ Open to incoming exchange students
- ⊗ Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

Year

1 2

o **Content:**

o **Module concevoir, planifier et évaluer des pratiques d'enseignement et d'apprentissage**

○ LBIO2310	Stages d'enseignement en biologie (en ce compris le séminaire d'intégration des stages)	Myriam De Kesel	FR [q1+q2] [15h+40h] [7 Credits]	x	x
○ LSCI2320	Didactics and epistemology of science	Myriam De Kesel (coord.) Marc de Wergifosse Gabriel Dias de Carvalho Junior	FR [q1] [22.5h] [2 Credits]		

PROFESSIONAL FOCUS : BIOTECHNOLOGY [30.0]


- Mandatory
 - ✘ Optional
 - △ Not offered in 2024-2025
 - ⊖ Not offered in 2024-2025 but offered the following year
 - ⊕ Offered in 2024-2025 but not the following year
 - △ ⊕ Not offered in 2024-2025 or the following year
 - Activity with requisites
 - 🌐 Open to incoming exchange students
 - 🌐 Not open to incoming exchange students
 - [FR] Teaching language (FR, EN, ES, NL, DE, ...)
-

Year

LBRAI2208

Firms and Markets : Strategic Analysis

Frédéric Gaspart

EN [q1] [30h] [4 Credits] 
> French-friendly

1	2
x	x

OPTIONS

- > [Elective courses](#) [en-prog-2024-bbmc2m-lbbmc300o]
- > [INEO, Interdisciplinary training in entrepreneurship](#) [en-prog-2024-bbmc2m-lboe955o]

ELECTIVE COURSES [36.0]

- Mandatory
 - ⊗ Optional
 - △ Not offered in 2024-2025
 - ⊖ Not offered in 2024-2025 but offered the following year
 - ⊕ Offered in 2024-2025 but not the following year
 - △ ⊕ Not offered in 2024-2025 or the following year
 - Activity with requisites
 - 🌐 Open to incoming exchange students
 - 🚫 Not open to incoming exchange students
 - [FR]dents
-

				Year	
				1	2
✘ LBBMC2206	Internship - Part 2	Bernard Hallet René Rezsöházy	EN [q2] [10h+10h] [10 Credits] 🌐	X	X
✘ LB RTE2201	Human and environmental toxicology	Cathy Debier	EN [q1] [30h+7.5h] [4 Credits] 🌐 > French-friendly	X	X
✘ LBBMC2204	Cellular and molecular pharmacology - basic concepts	Melissa Page	EN [q1] [30h] [3 Credits] 🌐	X	X
✘ LBBMC2214	Molecular and cellular pharmacology seminar	Laure Bridoux (compensates René Rezsöházy) Patrick Dumont	EN [q2] [24h] [2 Credits] 🌐	X	X
✘ LDATS2360	Seminar in data management: basic	Céline Bugli	EN [q1] [15h+10h] [5 Credits] 🌐	X	X

✘ One of the other technical courses

✘ LBIRC2101	Biochemical analysis	François Chaumont Pierre Morsomme (coord.)	FR [q1] [22.5h+30h] [4 Credits] 🌐 > English-friendly	X	X
✘ LBRMC2101	Genetic engineering	François Chaumont (coord.) Charles Hachez	FR [q1] [37.5h+15h] [5 Credits] 🌐 > English-friendly	X	X
✘ LBRMC2202	Cell culture technology	David Alsteens Charles Hachez (coord.) Pascal Hols	EN [q1] [30h] [3 Credits] 🌐 > French-friendly	X	X

✘ Other courses of the deepening modules

✘ Activities of the Master's degree in Biomedical Sciences at UCLouvain

✘ Activities of the Master's degree in chemistry



✘ Activities of the BBMC master's degree at UNamur

✘ Upgrading activities

✘ LBIO1237	Immunology : basis and applications in biology	Jean-Paul Dehoux	FR [q1] [25h+15h] [3 Credits] 🌐	X	X
✘ LBIO1322	Integrated tutorials in biochemistry and molecular biology	Bernard Hallet Patrice Soumillon	FR [q2] [5h+45h] [5 Credits] 🌐	X	X
✘ LBIO1333	Integrated animal biology: circulation, respiration, digestion and excretion	Patrick Dumont Françoise Gofflot René Rezsöházy	FR [q2] [30h+10h] [3 Credits] 🌐	X	X
✘ LBIO1342	Plant morphogenesis	François Chaumont	FR [q2] [20h+15h] [3 Credits] 🌐	X	X
✘ LBIO1240	Plant physiology	Xavier Draye Stanley Lutts	FR [q1] [40h+15h] [4 Credits] 🌐	X	X
✘ LBIO1332	Molecular Biology of Development	Françoise Gofflot René Rezsöházy	FR [q1] [30h+10h] [3 Credits] 🌐	X	X
✘ LBIO1236	Integrated animal biology : coordination, perception and locomotion	Frédéric Clotman (compensates Bernard Knoops) Patrick Dumont Patrick Dumont (compensates Bernard Knoops) Françoise Gofflot	FR [q2] [40h+10h] [4 Credits] 🌐	X	X
✘ LCHM1111B	General chemistry	Benjamin Elias Alexandru Vlad	FR [q1] [45h+45h] [8 Credits] 🌐	X	X
✘ LCHM1331	Inorganic chemistry I	Sophie Hermans	FR [q1] [37.5h+7.5h] [4 Credits] 🌐	X	X
✘ LCHM1321A	Analytical chemistry	Christine Dupont Yann Garcia	FR [q1] [30h] [3 Credits] 🌐	X	X
✘ LCHM1361	Introduction to polymer chemistry	Jean-François Gohy	FR [q2] [22.5h] [2 Credits] 🌐	X	X



LAGRE2310

o **Additional courses**

Course prerequisites

BBMC2M - Information

Access Requirements

Master course admission requirements are defined by the French Community of Belgium Decree of 7 November 2013 defining the higher education landscape and the academic organisation of courses.

General and specific admission requirements for this programme must be satisfied at the time of enrolling at the university.

Unless explicitly mentioned, the bachelor's, master's and licentiate degrees listed in this table or on this page are to be understood as those issued by an institution of the French, Flemish or German-speaking Community, or by the Royal Military Academy.

In the event of the divergence between the different linguistic versions of the present conditions, the French version shall prevail.

SUMMARY

- > [General access requirements](#)
- > [Specific access requirements](#)
- > [University Bachelors](#)
- > [Non university Bachelors](#)
- > [Holders of a 2nd cycle University degree](#)
- > [Holders of a non-University 2nd cycle degree](#)
- > [Access based on validation of professional experience](#)
- > [Access based on application](#)
- > [Admission and Enrolment Procedures for general registration](#)

Specific access requirements

Since this program is taught in English, no prior proof of French language proficiency is required, except for students wishing to access the didactic program who must provide proof of a CEFR level C1 proficiency.

If the candidate lacks any prerequisites, additional refresher courses may be required. These will be taught in French. If there is no proof of sufficient knowledge of French, the application will not be considered.

Students who wish to be admitted on the basis of a dossier (see tables below) are invited to consult the [criteria for the evaluation of application](#).

être adapté en fonction de la formation antérieure.

Bachelors of the Dutch speaking Community of Belgium

Bachelor in biologie	Access based on application
Bachelors in de biochemie en de biotechnologie	Access based on application
Bachelor in biologie	

Foreign Bachelors

[Access based on application](#)

Non university Bachelors

> Find out more about [links](#) to the university

Diploma	Access	Remarks
BA - technologue de laboratoire médical - crédits supplémentaires entre 45 et 60	Les enseignements supplémentaires éventuels peuvent être consultés dans le module complémentaire .	Type court
BA en agronomie, orientation agro-industries et biotechnologies - crédits supplémentaires entre 45 et 60		
BA en agronomie, orientation agronomie des régions chaudes - crédits supplémentaires entre 45 et 60		
BA en agronomie, orientation environnement - crédits supplémentaires entre 45 et 60		
BA en agronomie, orientation forêt et nature - crédits supplémentaires entre 45 et 60		
BA en agronomie, orientation systèmes alimentaires durables et locaux - crédits supplémentaires entre 45 et 60		
BA en agronomie, orientation techniques et gestion agricoles - crédits supplémentaires entre 45 et 60		
BA en agronomie, orientation techniques et gestion horticoles - crédits supplémentaires entre 45 et 60		
BA en agronomie, orientation technologie animalière - crédits supplémentaires entre 45 et 60		
BA en chimie, orientation biochimie - crédits supplémentaires entre 45 et 60		
BA en chimie, orientation biotechnologie - crédits supplémentaires entre 45 et 60		
BA en chimie, orientation chimie appliquée - crédits supplémentaires entre 45 et 60		
BA en chimie, orientation environnement - crédits supplémentaires entre 45 et 60		

Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
"Licenciés"		Direct access	
Masters		Direct access	

Holders of a non-University 2nd cycle degree

Access based on validation of professional experience

> It is possible, under certain conditions, to use one's personal and professional experience to enter a university course without having the required qualifications. However, validation of prior experience does not automatically apply to all courses. Find out more about [Validation of priori experience](#).

Access based on application

Access based on application : access may be granted either directly or on the condition of completing additional courses of a maximum of 60 ECTS credits, or refused.

The first step in the procedure is to submit a file online (see <https://uclouvain.be/en/study/inscriptions/futurs-etudiants.html>).
Students who wish to be admitted on the basis of a dossier are invited to consult the [criteria for the evaluation of application](#).

Admission and Enrolment Procedures for general registration

Specific professional rules

Successful completion of the master's course with **teaching focus** leads to the award of the master's degree with teaching focus and the title of secondary school education specialist.

The [Réforme des Titres et Fonctions](#) ("Titles and Functions Reform"), in force since 1 September 2016, is intended to harmonise the titles, functions and pay scales of basic and secondary education professionals in French Community of Belgium networks.

It also aims to guarantee the priority of preferred titles over minimum titles and to establish a regime for titles in short supply.

AESS holders can learn which functions they can carry out and the pay scales from which they can benefit by [clicking here](#).

The university cannot be held responsible for any problems that students may encounter at a later date with a view to a teaching appointment in the French Community of Belgium.

Teaching method

The teaching strategy takes its inspiration from the idea of taking responsibility for one's own learning and offers a wide range of learning situations. Students must take three major decisions: the choice of an option course, a focus and final additional training.

Approximately thirty credits are reserved for activities which can be freely chosen from the overall **Biochemistry and Molecular and Cell Biology** programme or from related Masters.

Teaching is organized in small groups, most frequently in tutorial style and learning is for the most part centred on individual work (e.g. reading, consultation of databases and bibliographic references, presentation of seminars and research work). Before making a final choice for the subject of the dissertation, students do a "rotation" in four laboratories relating to each of the four available option courses. Work on the dissertation usually starts in the second semester of the first year and continues until the first semester of the second year of the Master. The training is completed by an intensive placement in a professional environment lasting several months, preferably abroad.

The five programmes organized in the French Community of Belgium share a portfolio of approximately fifteen inter-university workshops which can be taken from the first semester of the second year. Each workshop consists of a week of immersion in an intellectual issue in an area of advanced research, spent in a host department which specializes in the area. UCL provides three workshops; our students must attend at least two of them.

Students doing the teaching focus may do advanced teaching in mathematics, physical sciences or geography.

Evaluation

The evaluation methods comply with the [regulations concerning studies and exams](#). More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".

Students will mainly be assessed on the basis of individual work (e.g. reading, consultation of databases and bibliographic references, writing monographs and reports, presentation of seminars, dissertation and work placement). Where necessary, students will also be assessed on how much they have learned from lectures. As far as possible, there will be continuous assessment, including regular 'open book examinations'. Certain activities will not be given a precise mark but will be officially certified. Assessment of the dissertation is in two stages : a 'progress report' at the end of the first year of the Master and the final presentation.

Mobility and/or Internationalisation outlook

For the research and professional focuses, students are invited to spend time in a foreign country, preferably during the second semester of the second year to do a work placement and/or (possibly) during the first semester of the second year to do the second part of their dissertation whilst also taking their option course and their focus-related training

Advanced courses are given by many visiting lecturers from different foreign institutions and some Belgian ones. These are mostly in English.

Possible trainings at the end of the programme

Whatever focuses and option courses are chosen, the Master in **Biochemistry and Molecular and Cell Biology** gives direct access to a doctorate in science.

