BBMC2M - Introduction

Introduction

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From the academic year 2020-2021, this master's degree will be taught mainly in English. Nevertheless, access to the teaching focus requires good mastery of French.

The Master's degree develops the knowledge necessary for an experimental approach to any question relating to the structure, functioning and exploitation for biotechnological purposes of living cells and their molecular components.

It forms

- biochemists, capable of understanding the structure, functioning and evolution of macromolecules that form the basis of the structure, functioning and programming of living organisms;
- Molecular and cellular biologists who understand how cells interact with each other, how they grow, adapt, differentiate and die.

Your profile

You

- wish to develop know-how and technical and experimental skills in biochemistry and molecular and cellular biology;
- are interested in living cells, their molecular components and the field of biotechnology;
- wish to contribute to research in biochemistry, molecular and cellular biology;
- wish to join a company active in the field of biotechnology, whether in the agri-food, pharmaceutical or biomedical sector.

Your future job

By touching the very essence of life, biology is the cornerstone of many scientific disciplines: analysis of genetic information, genome sequencing, biotechnology, etc.

Along with chemistry, it contributes to the design of new products. In interaction with physics, it generates new methods for the detection of diseased cells, for example cancer cells.

Our graduates exercise their skills in scientific, fundamental or applied research in research institutes or private laboratories, in expertise and resource management in the private or public sector, in education, training and communication.

Your programme

The master offers you

- original pedagogical tools: workshop, tutorial thesis;
- the possibility of discovering, during three fifteen-day periods, specialized laboratories of Louvain Institute of Biomolecular Science and Technology (LIBST) ;
- advanced training in experimental research, through a one-year thesis in a laboratory of your choice;
- a professional immersion internship in a laboratory or a company, in Belgium or abroad;
- the possibility of carrying out the internship or part of the master's degree abroad.

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		EN [] [] [10 Credits]	x	
LBBMC2998	Master's thesis - Part 2		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	
LBRMC2202	Cell culture technology	David Alsteens Charles Hachez (coord.) Pascal Hols	EN [q1] [30h] [3 Credits] *> French-friendly*	x	

Social Sciences and Humanities (2 credits)

at least one of the following three courses:

LSC2001	Introduction to contemporary philosophy	Peter Verdée Peter Verdée (compensates Charles Pence)	FR [q2] [30h] [2 Credits]	x	
LSC2220	Philosophy of science	Alexandre Guay	EN [q2] [30h] [2 Credits]	x	
LFILO2003E	Ethics in the Sciences and technics (sem)	Alexandre Guay (compensates Charles Pence) Hervé Jeanmart René Rezsohazy	FR [q2] [15h+15h] [2 Credits]	x	x
LTHEO2840	Science and Christian faith	Benoît Bourgine Paulo Jorge Dos Santos Rodrigues			

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.

- Mandatory
- Optional
- Not offered in 2024-2025
- Not offered in 2024-2025 but offered the following year

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

Content:

				Year 1	Year 2
LBBMC2215	Internship in a company	René Rezsohazy	[FR] [q2] [25h+40h] [20 Credits]		x

					Year 1	2
⊠ LAGRE2221	Learning and teaching with new technologies	Sandrine Decamps	FR [q1] [15h+15h] [2 Credits]		x	x
⊠ LMAT2330	Seminar on the teaching of mathematics	Enrico Vitale	FR [q1+q2] [15h+30h] [4 Credits]		x	x

x

INEO, INTERDISCIPLINARY TRAINING IN ENTREPRENEURSHIP

- 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]

Additional courses

Course prerequisites

There are no prerequisites between course units (CUs) for this programme, i.e. the programme activity (course unit, CU) whose learning outcomes are to be certified and the corresponding credits awarded by the jury before registration in another CU.

The programme's courses and learning outcomes

For each UCLouvain training programme, a reference framework of learning outcomes specifies the the skills expected of every graduate on completion of the programme. Course unit descriptions specify targeted learning outcomes, as well as the unit's contribution to reference framework of learning outcomes.

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

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.

University Bachelors

Diploma	Special Requirements	Access	Remarks
UCLouvain Bachelors			
BIOL1BA - Bachelier en sciences biologiques		Direct access	
CHIM1BA - Bachelier en sciences chimiques		Access based on application	
		Direct access	
		Access with additional training	
SBIM1BA		Direct access	
Titre inconnu:lmed1ba		Direct access	Le choix des cours de 1ère année de master pourrait être adapté en fonction de la formation antérieure.
Titre inconnu:lvete1ba		Direct access	Le choix des cours de 1ère année de master pourrait être adapté en fonction de la formation antérieure.
Others Bachelors of the French speaking Community of Belgium			
Bachelier en sciences chimiques		Access based on application	
		Direct access	
Bachelier en sciences de l'ingénieur - orientation bioingénieur		Access with additional training	
Bachelier en sciences biomédicales		Direct access	Le choix des cours de 1ère année de master pourrait

	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 Bachelor in biologie	Access based on application
Foreign Bachelors	

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