UCLouvain

SBIM2M

2024 - 2025

Master [120] in Biomedicine

At Bruxelles Woluwe - 120 credits - 2 years - Day schedule - In French
Dissertation/Graduation Project : **YES** - Internship : **YES**
Activities in English: **optional**

SBIM2M - Introduction

Introduction

SBIM2M - Teaching profile

Learning outcomes

Master in Biomedicine students must endeavour to become health sector professionals capable of conducting and interpreting scientific projects aimed at improving, diagnosing and treating human diseases. To this end, students will apply themselves to developing the necessary skills and knowledge for the acquisition and robust analysis of biomedical observations and the planning of original research projects in the field of human health.

Through their choice of focus and option, students pursuing the Master in Biomedicine programme will study in depth a specific area of expertise, such as: molecular and cellular psychopathology, cancerology, neuroscience, nutrition, toxicology or clinical research. In the Master's programme, the emphasis is placed on practical training, through the completion of a research project in a health science laboratory and by means of a work placement in a professional environment, possibly abroad.

The objective of the School of Biomedical Sciences is to produce not only experts in the major areas of biomedical knowledge, but also medical research professionals who will help shape the diagnostic and therapeutic developments of the future.

On successful completion of this programme, each student is able to :

1. Use their integrated and evolving knowledge in biomedicine

1.a Use the general methodologies and knowledge in experimental biomedicine: normal and pathological biochemistry and molecular

i.e.:

- recognise their errors and correct them;
- quote their sources and avoid plagiarism;
- understand and apply the rules relating to experimentation.

5.c Develop their learning by cultivating scientific curiosity and participate in the dissemination of knowledge based on robust scientific thinking.
5.d Understand the rules of scientific publication.

6. If they choose the Research focus: display command of the specific knowledge base and conduct an original research project in a specialist field of biomedicine

6.a Have a comprehensive understanding of the fundamental principles and concepts of one of the following areas of biomedicine: molecular and cellular pathophysiology, cancerology or neuroscience; understand the diagnostic and therapeutic developments associated with the chosen field.
6.b Understand the constraints on the development of a scientific project, whether it concerns basic or applied research; structure and substantiate a funding application; identify the subject of a patent and be familiar with the submission procedure.
6.c Use the skills acquired during the Master's programme in a new professional environment, whether it is an institution or a company involved in biomedical research.

7. If they choose the Professional focus in nutrition, conduct themselves as experts in forging a link between nutrition and health, able to adopt a solid scientific and critical approach in the various professional environments concerned

7.a Have an in-depth understanding of the fundamental principles and concepts of basic and clinical nutrition and be able to use them to identify and test research hypotheses concerning mechanisms, prevention, diagnosis and treatment in the field of nutrition.
7.b Understand the constraints on the development of a scientific project, whether it concerns basic or applied research; structure and substantiate a funding application.
7.c Use the skills acquired during the Master's programme in a new professional environment, whether it is an institution or a company involved in nutrition in the broadest sense.

8. If they choose the Professional focus in toxicology: incorporate the multidisciplinary skills required to evaluate and prevent risks to human health caused by chemical

8.a Understand and use the fundamental principles and concepts of modern toxicology.
8.b Plan, conduct and interpret an experimental toxicological study.
8.c Critically analyse and summarise the available toxicological data for a chemical substance and incorporate this information in a regulatory context (in particular the European regulation REACh).

9. If they choose the Professional focus in clinical biomedicine: incorporate the knowledge and skills required to participate in large-scale clinical studies

9.a Incorporate the knowledge and skills enabling them to understand the purpose and pertinence of a new diagnostic or therapeutic tool in relation to a human pathology.
9.b Plan, conduct and interpret a large-scale clinical study, applying the appropriate IT and statistical analyses.

Programme structure

The programme is made up as follows :

1.) core subjects of 70 credits.

2.) a research focus or one of three professional focuses of 30 credits.

3.) an optional subject of 20 credits.

Wathever the focus or the options chosen, the programme of this master shall totalise 120 credits, spread over two years of studies each of 60 credits.

To access this master, the student must master certain subjects. If this is not the case, he must add additional lessons at the start of his master's program aimed at acquiring the prerequisite subjects for the studies concerned.

SBIM2M Programme

Detailed programme by subject

CORE COURSES

- 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	Year 2
Mémoire					
WSBIM2198	Pre-thesis in biomedical sciences	Charles De Smet (coord.)	FR [q2] [] [9 Credits] > English-friendly	x	
WSBIM2298	Experimental dissertation in biomedical sciences	Charles De Smet (coord.)	EN [q1] [] [20 Credits] > English-friendly		x
Apprentissage de l'approche expérimentale					
WSBIM2197	Laboratory internship (part 1)	Charles De Smet (coord.)	EN [q2] [] [19 Credits] > English-friendly	x	
WSBIM2297	Laboratory internship (Part 2)	Charles De Smet (coord.)	EN [q1] [] [20 Credits] > English-friendly		x
Sciences religieuses (2 credits)					
L'étudiant choisit un cours parmi les suivants :					
LTECO2101	Health, spirituality and religion : A. Biblical and clinical readings	Claude Lichtert	FR [q1] [15h] [2 Credits]	x	
LTECO2102	Health, spirituality and religion : B. Spiritual care in medicine	Serena Buchter Marcela Lobo Bustamante	FR [q1] [15h] [2 Credits]	x	
LTECO2103	Health, spirituality and religion : C. Science, ethics and religion	Eric Gaziaux	FR [q1] [15h] [2 Credits]	x	

LIST OF FOCUSES

RESEARCH FOCUS [30.0]

O 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
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[FR] Teaching language (FR, EN, ES, NL, DE, ...)

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

				Year 1	2
⊠ WSBIM1220	Neurobiology	Emmanuel Hermans (coord.) Aleksandar Jankovski Pascal Kienlen-Campard Marcus Missal	FR [q2] [30h] [3 Credits] *> English-friendly*	x	
⊠ WSBIM2152	Nervous and psychiatric diseases, theoretical and translational approaches *Ce cours est recommandé à l'étudiant qui a choisi l'option neurosciences.*	Philippe de Timary Hélène Quoidbach (coord.)			

Emmanuel Hermans (coord.) 0.000000 0.000000 0 0 Tm [81.205002 1 .6970005 19.1060

PROFESSIONAL FOCUS : TOXICOLOGY [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
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Click on the course title to see detailed informations (objectives, methods, evaluation...)

Year

PROFESSIONAL FOCUS : CLINICAL BIOMEDICAL SCIENCES [30.0]

- O 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

Year

Year
1 2

WMDS2223	Secteur oncologie	Martine Berlière

Year
1 2

Démarche diagnostique (6 credits)

WMED2331	Stratégie d'utilisation de l'imagerie médicale et de la biologie clinique	Emmanuel Coche

OPTIONS [20.0]

> Option cancérologie *[en-prog-2024-sbim2m-wsbim908o]*
> Option neurosciences *[en-prog-2024-sbim2m-wsbim907o]*
> Option pathophysiologie cellulaire et moléculaire *[en-prog-2024-sbim2m-wsbim904o]*

				Year 1	2
⊠ WFARM1375	Drugs and sustainable development *Ce cours ne peut être choisi que par les étudiants inscrits en master 60.*	Nathalie Delzenne (coord.) Raphaël Frédérick Pauline Modrie Anne Spinewine Sandy Tubeuf Françoise Van Bambeke	EN [q2] [10h+20h] [3 Credits]	x	
⊠ LBIR2050A	Challenges of sustainable development and transition *Ce cours ne peut être choisi que par les étudiants inscrits en master 60.*	Valentin Couvreur Nathalie Delzenne Valérie Swaen	FR [q1 or q2] [22.5h] [3 Credits]		

OPTION NEUROSCIENCES [20.0]

- Mandatory

Year
1 2

OPTION NUTRITION HUMAINE [20.0]

- Mandatory
- Optional
- Not offered in 2024-2025
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Click on the course title to see detailed informations (objectives, methods, evaluation...)

Content:

Si une option comprend une UE déjà présente dans la finalité choisie par l'étudiant, il devra, avec l'accord de la faculté, prendre un autre cours afin que l'option totalise 20 crédits au minimum.

Cours au choix

Pour compléter l'option, l'étudiant choisit des cours pour un nombre de crédits permettant d'atteindre les minimum 20 crédits d'option. Pour les étudiants du master 120, si certains cours que choisit l'étudiant sont offerts dans une finalité spécialisée, le recouvrement, entre les cours de cette option et les cours d'une finalité spécialisée, ne peut excéder 6 crédits.

Cours au choix (10 credits)

L'étudiant choisit des cours pour atteindre un minimum de 10 crédits, parmi les cours proposés dans la liste ci-dessous, complétés de cours proposés dans tout autre programme de la faculté. Ce choix sera validé par la commission d'enseignement de la finalité.

Year 1	Year 2				
WSBIM2230	Biochemistry of inborn errors of metabolism	Joseph Dewulf (coord.) Marie-Cécile Nassogne	FR [q1] [30h] [3 Credits]	x	
WSBIM2290	Introduction to laboratory animal science	Jean-Paul Dehoux	FR [q1] [37h] [3 Credits]	x	
WFARM2149	Pharmaceutical approach in nutrition	Nathalie Delzenne	FR [q2] [30h+15h] [3 Credits]		

Supplementary classes

To access this Master, students must have a good command of certain subjects. If this is not the case, in the first annual block of their Masters programme, students must take supplementary classes chosen by the faculty to satisfy course prerequisites.

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

Finalités

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L'étudiant souhaitant intégrer la finalité approfondie sera invité à suivre le module complémentaire constitué des unités d'enseignement suivantes:

Cours de base

WFARM1221S	Biochemistry and molecular biology	Nathalie Delzenne (coord.)	FR [q1] [50h+10h] [6 Credits]
WFARM1213	Human physiology and basics of physiopathology	Olivier Feron (coord.) Emmanuel Hermans Jean-Christophe Jonas (compensates Mandy Grootaert)	FR [q2] [60h] [6 Credits] *> English-friendly*
WMDS1230	Biologie cellulaire médicale et expérimentale	Stefan Constantinescu (coord.) Christophe Pierreux Donatienne Tyteca	FR [q1] [30h+20h] [4 Credits]
LANGL2454	English for biomedical students	Nicholas Gibbs Nevin Serbest (coord.)	EN [q2] [30h] [3 Credits]
WSBIM1334	general immunology	Isabelle Leclercq Sophie Lucas (coord.) Jean-Christophe Renauld Rémy Ruelle Benoit Van den Eynde Nathalie Vigneron (compensates Sophie Lucas)	FR [q1] [65h] [6 Credits] *> English-friendly*
WMD1006	Cytology and general histology	Christophe Pierreux	FR [q2] [10h+40h] [5 Credits]
WFARM1282	General microbiology	Thomas Michiels	FR [q1] [20h+15h] [3 Credits]
WSBIM1226	Molecular biology (including epigenetics) and tutorials	Charles De Smet Frédéric Lemaigre Thomas Michiels (coord.)	FR [q1] [30h+10h] [3 Credits]
WSBIM1320	Introduction to experimental approaches in cellular and molecular biology	Luc Bertrand Anne des Rieux Sandrine Horman Donatienne Tyteca (coord.)	FR [q2] [30h] [3 Credits]
WSBIM1302	Molecular Virology	Thomas Michiels	FR [q1] [25h] [3 Credits]
WSBIM1382	Genetics and applied biotechnology	Luc Bertrand (coord.) Laure Dumoutier Géraldine Laloux Nisha Limaye	FR [q1] [30h] [3 Credits] *> English-friendly*

WSBIM1211	Methodolgy of cell and molecular biology

[redacted]	Principles of clinical trials	Diego Castanares Zapatero Annie Robert (coord.) Xavier Stéphenne (compensates Françoise Smets)	[redacted]

[redacted]

Cours au choix

L'étudiant est invité à choisir 3 unités d'enseignement parmi la liste proposée ci-dessous

⊠ WSBIM1302	Molecular Virology

SBIM2M - Information

Access Requirements

		intégrés dans le programme du master
bachelier en médecine vétérinaire bachelier en sciences chimiques bachelier en sciences de l'ingénieur orientation bioingénieur bachelier en sciences physiques	Access based on application	Additional requirements for admission de max 60 crédits intégrés dans le programme du master
Foreign Bachelors		
diplôme universitaire jugé équivalent dans des domaines autres que ceux repris ci-dessus ou ayant acquis une expérience pouvant être valorisée dans le domaine des sciences biomédicales	Access based on application	Accès en bachelier. Programme établi par le jury d'admission sur base du parcours antérieur de minimum 60 crédits.

Non university Bachelors

> Find out more about links to the university

Diploma	Access	Remarks
BA - sage-femme - crédits supplémentaires entre 15 et 30 BA - technologue de laboratoire médical - crédits supplémentaires entre 30 et 60 BA - technologue en imagerie médicale - crédits supplémentaires entre 30 et 60 BA de spécialisation en anesthésie - crédits supplémentaires entre 15 et 30 BA de spécialisation en soins intensifs et aide médicale urgente - crédits supplémentaires entre 15 et 30 BA en chimie, orientation biochimie - crédits supplémentaires entre 30 et 60 BA en chimie, orientation biotechnologie - crédits supplémentaires entre 30 et 60 BA en chimie, orientation chimie appliquée - crédits supplémentaires entre 30 et 60 BA en chimie, orientation environnement - crédits supplémentaires entre 30 et 60 BA en diététique - crédits supplémentaires entre 30 et 60 BA en ergothérapie - crédits supplémentaires entre 30 et 60 BA en soins infirmiers - crédits supplémentaires entre 30 et 60 BA en soins infirmiers pour titulaires d'un brevet d'infirmier hospitalier - crédits supplémentaires entre 30 et 60 BA: infirmier responsable de soins généraux - crédits supplémentaires entre 15 et 30	Les enseignements supplémentaires éventuels peuvent être consultés dans le module complémentaire.	Type court

Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
"Licenciés"			
		Direct access	
Masters			
Master [120] in Biochemistry and Molecular and Cell Biology		Access with additional training	Type long
Master [120] in Pharmacy		Access based on application	Type long

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.

Admission and Enrolment Procedures for general registration

Teaching method

Throughout the Master's programme, students encounter a variety of complementary teaching methods: classroom lectures, tutoring, laboratory work and immersion in a professional environment.

The course programme is designed to enable an excellent level of training in research through experimentation.

The theory teaching, monitoring in the laboratory and supervision of the thesis are performed by research professionals.

Professional focus in human nutrition: the programme is organised so as to leave a period of time almost exclusively devoted to the production of a laboratory experiment dissertation, which is essential to enable the learner to become an integral part of a team and to allow adequate monitoring by the supervisors.

The final stage of the programme includes an introductory work placement, intended to enable the students to face the world of employment that they will have to deal with on completion of the training; the various courses will also provide the opportunity for contact with key representatives of the world of employment during the training.

The critical mindset will be developed in the field, which is necessary in view of the amount of misleading information found on the Internet or through inadequate communication networks in the field of nutrition and health; this competence will be acquired by being faced with real-life cases to be dealt with in several courses.

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".

Each theory course will be evaluated by a written or oral exam.

A significant part of the Master's programme is devoted to experimental work that is evaluated by a work placement in a laboratory and the production of a dissertation that must be defended before a panel of experts.

To obtain a grade average, the scores obtained by the teaching units are weighted by their respective credits.

Mobility and/or Internationalisation outlook

Il y a une ouverture possible du master 120 à des étudiants étrangers sur base des pré-requis examinés par la commission d'enseignement.

L'école des Sciences biomédicales met en place un réseau d'institutions partenaires permettant des échanges d'étudiants au cours de la deuxième année du Master 120.

Lien à consulter : https://uclouvain.be/313366.html

Possible trainings at the end of the programme

Masters complémentaires accessibles : en biotechnologie et biologie appliquée.

Formations doctorales accessibles : domaine des sciences biomédicales et pharmaceutiques et domaine des sciences médicales.

Contacts

Curriculum Management

Entity

Structure entity	SSS/FASB/SBIM
Denomination	(SBIM)
Faculty	Faculty of Pharmacy and Biomedical Sciences (FASB)
Sector	Health Sciences (SSS)
Acronym	SBIM
Postal address	Avenue Mounier 73 - bte B1.73.04 1200 Woluwe-Saint-Lambert Tel: +32 (0)2 764 73 62 - Fax: +32 (0)2 764 73 63

Academic supervisor: Charles De Smet

Jury

- Président de jury: Charles De Smet
- Secrétaire du jury: Laurent Gatto

Useful Contact(s)

- Conseiller aux études: Laure Dumoutier
- Secrétaire de l'école: Guillaume Arnould
- Président de la commission d'enseignement de l'école de sciences biomédicales: Charles De Smet
- Responsable administrative de la faculté de pharmacie et de sciences biomédicales:: Johanne Garny