

## Faculty of Medicine



### SBIM1BA Baccalauréat en sciences biomédicales (Bachelor of Biomedical Sciences)



#### Study objectives

Biomedical Sciences focus on the study of the fundamental mechanisms of life, on the physiopathology of human diseases and on the research of new diagnostic and therapeutic strategies.

Biomedical Sciences prepare the student for fundamental, applied or clinical research in multi-disciplinary teams and milieux as diverse as the university, the hospital or the industry.

The bachelor's of Biomedical Sciences prepares for the development of experimental approaches in domains such as cellular and molecular biology, nutrition, toxicology and applied or clinical Biomedical Sciences. The bachelor's programme aims at the acquisition of knowledge necessary in a profession where intellectual rigour is needed : a keen sense of observation, the capacity to understand and process data, a critical analysis of the collected data. All of these skills will be acquired thanks to the practical part of the course-work.

#### General presentation of the programme

The bachelor's of Biomedical Sciences totals 180 credits.

The " major " of the programme consists of a basic course of 60 credits (1st year) and a specialised training course (2nd and 3rd year) of at least 90 credits.

The major is completed by a course equivalent to 30 credits, which may be an option selected from "the options menu" (more advanced studies in Biomedical Sciences) or a " minor " (an opening course in other disciplines). The course of 30 credits may be followed together with the specialised course.

#### Principal Subjects

The bachelor's studies enable the student to apprehend **the world of the living, from a single atom to the whole of society** .

#### A toms, molecules and the systems which govern them :

General and Organic Chemistry - Biochemistry - Applied Physics - Pharmacology and Pharmacokinetics - Mathematics.

#### From a single cell to a human being

Morphological and Functional Approach : General Cellular and Molecular Biology, - Cytology and Histology- Anatomy - Embryology - Immunology - Physiology - Microbiology - General Pathology.

#### Man and society

Contextual Approach : Philosophy - Psychology.

#### Research experience

Statistics - Strategies and applied models - Genetic Engineering - Instrumental Analysis.

#### Other studies

English

#### Minors or other options available

During the bachelor's of Biomedical Sciences, personally selected options will give the student the opportunity to become more familiar with the different branches available at master's level.

Instead of the options, the bachelor's may also include a "minor" which will enable the student to open up new horizons.

#### Evaluation

Acquisition of the course content is evaluated in accordance with the prevailing University rules and regulations (c.f. exam relementation). Exams are organised at the end of the course session periods (January, June) as well as in September.

Evaluation of the practical tasks and work experience also take the form of ongoing evaluation.

#### Admission to the programme

The conditions and regular admission requirements are specified on the web page "Access to Studies":

<http://www.ucl.ac.be/etudes/libres/en/acces.html>

## Positioning of the programme

### Positioning of the programme within the University cursus

The bachelor's degree entitles access to the master's of Biomedical Sciences which comprises four sections : Applied Biomedical Sciences, Clinical Biomedical Sciences, Human Nutrition and Toxicology.

Furthermore, there is sufficient homogeneity within the programmes offered by the different schools of the Faculty of Medicine (MED, FARM, DENT, SBIM, IEPR) to make re-orientation possible during the bachelor's studies by means of additional complementary courses.

### Other studies accessible upon completion of the programme

Other masters offered by the Faculty of Medicine, as well as certain programmes in the Faculty of Sciences, may be accessible, subject to certain prerequisites.

## Useful contacts

### Programme management

SBIM Ecole des sciences biomédicales

President: Jean-Noël Octave, tel. 32-2-27645020

Administration Manager: Marie-France Zabrus, tel. 32-2-27645031

Secretary: Laurence Bertrand et Nadine Bussy, tel. 32-2-27645020

secretaire@smed.ucl.ac.be

### Presidents of the Exam Juries : 2004-2005

#### 1st year of the Bachelor's 1 :

President of the jury : M.C. Many

Secretary of the jury : P. Depovere

#### 2nd year of the Bachelor 2 :

President of the jury : P. Courtoy

Secretary of the jury : Th. Michiels

### Teaching Committee

J.-P. Buts, P. Courtoy, M. Francaux, Ph. Hantson, E. Hermans, Y. Larondelle, Ph. Lefèvre, G. Leloup, D. Maiter, J.-N. Octave (président), J.-Chr. Renauld, A. Robert, J.-P. Thissen, R.Tonglet, Ph. Van Den Bosch Sanchez De Aguilar, Cl. Veraart, P. Wallemacq, M.-Fr. Zabrus and 3 representatives of the students.

### Study Advisor

The study advisor assists the student in the elaboration of his training programme in accordance with his previous studies and his personal ambitions.

Study Advisor :

1st year : Véronique Godin (Tél. 32-2-7645078 - 7257, godin@pedm.ucl.ac.be, Centre faculté -1)

2nd year : Pascal Kienlen - Campard (Tél. 32-2-7649338, Pascal.Kienlen-Campard@farl.ucl.ac.be)

### List of accessible minors

- Minor in Theology
- Minor in Philosophy
- Minor in Law
- Minor in Criminology
- Minor in Information and Communication (\*)
- Minor in Political Sciences
- Minor in Sociology and Anthropology
- Minor in Human and Social Sciences
- Minor in Economics (opening)
- Minor in Business Studies
- Minor in Linguistics
- Minor in Hispanic Studies (\*)
- Minor in Italian Studies (\*)
- Minor in French Studies (\*)
- Minor in Latin Studies
- Minor in Greek Studies
- Minor in Oriental Studies
- Minor in Literature Studies
- Minor in History
- Minor in Medieval Studies
- Minor in the History of Art and Archaeology (\*)
- Minor in Musicology
- Minor in Psychology and Education (\*)
- Minor in Medication (\*)

- Minor in Physical Activity, Health and Culture of Movement (\*)
- Minor in Geography (\*)
- Minor in Statistics
- Minor in Urban Architecture
- Minor in Computer Science (\*)
- Minor in Bio-engineering
- Minor in Mathematics and Mathematical Applications
- Minor in Gender Studies
- Minor in Culture and Creation
- Minor in European Studies

(\*) *Minor with access criteria.*

## Detailed content of standard programme

### SBIM 11BA First year of studies

#### Foundation studies (60 credits)

<u>MED1111</u>	Philosophie[30h] (3 credits) (in French)	Bernard Feltz
<u>MD1001</u>	Experimental physics and mathematical introduction to experimental sciences (1st part)[60h+18.5h] (8 credits) (in French)	Bernard Piraux
<u>MD1002</u>	Experimental physics and mathematical introduction to experimental sciences (2nd part)[30h+21h] (5 credits) (in French)	Bernard Piraux
<u>MD1003</u>	Mineral and general chemistry[60h+28h] (8 credits) (in French)	Paul Depovere, Jean-Louis Habib Jiwan
<u>MD1004</u>	Organic Chemistry[60h+30h] (9 credits) (in French)	Paul Depovere, Jacques Fastrez, Jean-Philippe Soumillion (coord.)
<u>MD1005</u>	Biologie générale[65h+25h] (9 credits) (in French)	Jean Baptiste Demoulin, Marie-Christine Many, Philippe van den Bosch Sanchez de Aguilar
<u>MD1006</u>	Cytology and general histology[10h+40h] (5 credits) (in French)	Jean-François Deneff (coord.), Marie-Christine Many
<u>MD1007</u>	General, systemic and functional anatomy[45h] (5 credits) (in French)	Benoît Lengelé
<u>SBIM1001</u>	MATHEMATICAL METHODS IN BIOMEDICAL SCIENCES[22.5h+22.5h] (4 credits) (in French)	André Nauts
<u>ANGL1854</u>	Medical English[30h] (3 credits)	Sandrine Mulkers

As a complement to the lectures and practical exercises or supervised work in the Physics, Chemistry and Biology courses, the lecturers assume complementary support activities in small groups to enable the students to enhance their learning in the subject matter. The student is encouraged to actively participate in these activities, in accordance with his learning needs.

<u>MD1011</u>	Activités d'encadrement complémentaire en physique (par séries)[12h] (in French)	Bernard Mahieu, Bernard Piraux
<u>MD1013</u>	Activités d'encadrement complémentaire en chimie générale et minérale (par séries)[12h] (in French)	Paul Depovere, Jean-Louis Habib Jiwan, Daniel Peeters, Etienne Sonveaux (coord.)
<u>MD1014</u>	Activités d'encadrement complémentaire en chimie organique (par séries)[12h] (in French)	Paul Depovere, Jacques Fastrez, Jacques Poupaert, Etienne Sonveaux, Jean-Philippe Soumillion (coord.)
<u>MD1015</u>	Activités d'encadrement complémentaire en biologie (par séries)[12h] (in French)	Jean Baptiste Demoulin, Pascal Kienlen-Campard (coord.), Marie-Christine Many

### SBIM 12BA Second year of studies

#### Specific studies

##### a) Compulsory courses

<u>BCHM1210P</u>	Biochimie générale (partim 56h-30h)[67.5h+30h] (8 credits) (in French)	Frederik Opperdoes, Emile Van Schaftingen
<u>SBIM1201</u>	General physiology[40h+25h] (6 credits) (in French)	Patrick Gilon, Patrick Gilon (supplée N.), Nicole Morel (coord.)

<u>ISTO1201</u>	Normal histology of systems (part 1)[19h+30h] (4 credits) (in French)	Jean-François Deneff, Marie-Christine Many, Jean-Marie Scheiff (coord.)
<u>ISTO1301</u>	Histologie normale des systèmes (2e partie)[15h+25h] (3 credits) (in French)	Idesbald Colin (supplée Jean-François Deneff), Jean-François Deneff, Marie-Christine Many (coord.), Jean-Marie Scheiff
<u>SBIM1202</u>	Molecular Biology[36h] (3 credits) (in French)	Etienne De Plaen, Frédéric Lemaigre, Thomas Michiels, Jean-Noël Octave (coord.)
<u>BCHM1230</u>	Cell and molecular biology[22.5h+22.5h] (4 credits) (in French)	Pierre Courtoy
<u>SBIM2100</u>	Introduction à l'analyse instrumentale biomédicale[30h+30h] (4 credits) (in French)	Bernard Gallez, Jean-Luc Vaerman (coord.), Pierre Wallemacq
<u>ANAT1110</u>	Embryologie[30h] (3 credits) (in French)	André Goffinet
<u>MED2430</u>	Eléments de statistiques médicales[15h+15h] (3 credits) (in French)	William D'Hoore, Annie Robert
<u>FARM1282</u>	General microbiology[18h+15h] (3 credits) (in French)	Thomas Michiels
<u>ANGL1855</u>	Medical English[30h] (3 credits)	Françoise Stas (coord.)
<u>MED1270A</u>	Psychologie (partie psychologie générale, 15h)[30h] (2 credits) (in French)	Marc Crommelinck

**b) Option**

15 credits of "options" or a "minor" : see accompanying course list

## SBIM 13BA Third year of studies

**Specific studies****a) Compulsory courses**

<u>FARM1201S</u>	Physiologie humaine et éléments de physiopathologie (partim physiologie spéciale 60h + 0h)[75h+7.5h] (5 credits) (in French)	Emmanuel Hermans, Jean-Christophe Jonas, Maurice Wibo
<u>BCHM1310P</u>	Biochimie humaine normale et pathologique et génétique humaine (partim biochimie humaine normale et pathologique 60h-16h)[70h+16h] (7 credits) (in French)	Louis Hue, Frédéric Lemaigre
<u>SBIM1302</u>	Molecular Virology[15h] (2 credits) (in French)	Thomas Michiels
<u>FARM2182</u>	Molecular genetics of the prokaryotes and concepts of genetic engineering[30h+15h] (4 credits) (in French)	Etienne De Plaen, Jean-Noël Octave (coord.)
<u>PHAR1300</u>	Pharmacologie 1re partie[30h+7.5h] (3 credits) (in French)	Emmanuel Hermans, Marie-Paule Mingeot
<u>FARM1300P</u>	Pharmacocinétique et métabolisme des xénobiotiques (partim pharmacocinétique 20h + 0h)[30h+30h] (2 credits) (in French)	Roger-K. Verbeeck
<u>SBIM1303</u>	Workshop on experimental strategy in cellular and molecular biology[60h] (6 credits) (in French)	Luc Bertrand, Anabelle Decottignies, Pascal Kienlen-Campard (coord.)
<u>ESP3420</u>	Statistique médicale[22.5h+7.5h] (3 credits) (in French)	Annie Robert
<u>ESP3142</u>	Epidemiology[22.5h+7.5h] (3 credits) (in French)	Yves Coppieters 't Wallant
<u>SBIM1304</u>	General immunology[45h] (4 credits) (in French)	Pierre Coulie (coord.), Jean-Christophe Renauld, Benoît Van den Eynde
<u>SBIM1314</u>	Complementary training in basic immunology[0h+15h] (in French)	Pierre Coulie (coord.), Jean-Christophe Renauld, Benoît Van den Eynde
<u>MED1300</u>	Basic pathology and introduction to medical semeiology[30h] (3 credits) (in French)	Pierre Courtoy
<u>ANGL2450</u>	Interactive Communication in Medicine[30h] (3 credits)	Timothy Byrne, Jennifer Moreman, Sandrine Mulkers

**b) Option**

15 credits of "options" or of a "minor" : see accompanying course list

**Minor or other available options (30 credits)**

As a complement to the major of 150 credits, the programme is completed by course studies equivalent to 30 credits.

This gives the student the possibility to further his studies in Biomedical Sciences, or to take an opening in another subject.

He will thus choose from between a course :

- of the " options " category, further studies in Biomedical Sciences, or
- of the " minor " category, a coherent ensemble of courses providing an opening into other subjects.

These courses of 30 credits may be followed on parallel lines with the specific studies.

### 1) List of options

These options will give the student the opportunity to go further in certain domains or to become better acquainted with the different sections of the master of Biomedical Sciences.

*The student will choose the equivalent of around 15 credits in the 2nd year and around 15 credits in the 3rd year. With the prior agreement of the president or of the vice president of the year committee, courses delivered at UCL-Bruxelles and in Louvain-la-Neuve not featuring on the lists below, may be chosen.*

#### Courses accessible as from the 2nd year of the bachelor programme :

<u>EBIM1100</u>	Advanced questions in bioethics : Principles and methods[30h] (3 credits) (in French)	Mylene Botbol, Michel Dupuis, Luc Roegiers
<u>EBIM1120</u>	Séminaire sur des cas cliniques[15h] (2 credits) (in French)	Didier Moulin, Luc Roegiers
<u>ESP3511</u>	Epidémiologie clinique: médecine basée sur les preuves[15h] (2 credits) (in French)	Benoît Boland
<u>ESP3512</u>	Epidémiologie clinique: principes des essais cliniques[15h+15h] (2 credits) (in French)	Annie Robert
<u>ESP3540</u>	Nutrition[30h] (3 credits) (in French)	Sonia Brichard, Jean-Paul Thissen
<u>ESP3610</u>	Santé et environnement: risques physiques[15h+7.5h] (2 credits) (in French)	N.
<u>FARM2147</u>	A préciser (in French)	
<u>GEMO2110</u>	Génétique moléculaire médicale[30h] (2 credits) (in French)	Christine Dumoulin
<u>INF2111</u>	Eléments d'informatique médicale[15h+15h] (2 credits) (in French)	N.

Introductory course to Biomedical Engineering.

Supervised studies (2 credits)

*Support of students in lower years in different domains, such as Histology.*

<u>SBIM9212</u>	Stage en laboratoire[30h] (3 credits) (in French)	Pascal Kienlen-Campard
<u>SBIM9213</u>	Training course in cell biology[30h] (3 credits) (in French)	Pascal Kienlen-Campard (coord.), Jean-Christophe Renauld

*These two sessions are highly recommended for those students destined to do a masters in Biomedical Sciences.*

#### Courses accessible as from the 3rd year of the bachelor programme

<u>BCMM2130</u>	Biochemistry of Metabolic Diseases[30h] (2 credits) (in French)	Marie-Cécile Nassogne (coord.), Marie-Françoise Vincent
<u>BCMM2140</u>	Biologie cellulaire et moléculaire des régulations hormonales[30h] (3 credits) (in French)	Stefan Constantinescu, Frédéric Lemaigre
<u>ESP3620</u>	Santé et environnement: risques chimiques[15h+7.5h] (2 credits) (in French)	Perrine Hoet
<u>FARM2240</u>	Pharmacokinetic and clinical biology[30h+15h] (4 credits) (in French)	Roger-K. Verbeeck, Pierre Wallemacq (coord.)
<u>FARM2272</u>	Toxicology[30h] (3 credits) (in French)	Pedro Buc Calderon
<u>INIS2102</u>	Biomatériaux[15h] (in French)	N.
<u>INIS2360</u>	Communications in biological systems[45h] (4 credits) (in French)	Jean Delbeke, Claude Remacle, Philippe van den Bosch Sanchez de Aguilar
<u>INTR2440</u>	Séminaire de nutrition[30h] (3 credits) (in French)	Véronique BEAULOYE, Jean-Paul Buts, Nathalie Delzenne, Pierre Deprez, Etienne Sokal, Jean-Paul Thissen (coord.)
<u>MCBL13301</u>	Microbiologie médicale (partim 35h : bactériologie, mycologie, parasitologie)[50h+12.5h] (3 credits) (in French)	N.
<u>SBIM2111</u>	Methodolgy of cell and molecular biology[22.5h] (3 credits) (in French)	Pierre Courtoy (coord.), Emile Van Schaftingen
<u>SBIM2140</u>	Organes artificiels[30h] (3 credits) (in French)	Luc-Marie Jacquet
<u>SBIM2150</u>	Introduction au génie clinique[30h] (3 credits) (in French)	N.
<u>SBIM2520</u>	Workshop of molecular genetics[40h] (3 credits) (in French)	Patrick Jacquemin, Patrick Jacquemin

Monitorat (2 crédits)

*Support of students in lower years in different domains, such as Histology.*

### 2) Minor

If the student wishes to widen his study horizons in another subject, he will choose a "minor" from among those organised by the other schools of the Faculty of Medicine or by the other faculties of UCL.

*See list of the minors at the end of the heading " General Presentation ".*