Job opportunities

If you choose to go on to do a Master in this subject, after 5 years of study, you will obtain a Master in pharmaceutical sciences and be officially recognised as a qualified pharmacist, which will give you access to employment in the following areas.

- in a high-street pharmacist or in a hospital
- in an analytical laboratory (biological, toxicological, food) or a research laboratory
- in the pharmaceutical industry
- in teaching, public administration, buying and selling pharmaceuticals...

NB: additional qualifications are required in some of these fields (lasting from between 1 to 5 years).

You could also go into research in any field relating to sciences: chemistry, biology, pharmacology, medicine, food and nutrition, etc.

The purpose of the Bachelor program is not to give access to a job but rather to give access to the subsequent 2-part Master program in pharmaceutical sciences.

However, graduated students can:

- Either register in other Master programs (directly or with additional courses)
- Either work in the pharmaceutical industry or in other laboratories

Programme objectives

At the end of the program, the students:

- will have acquired basic expertise for the analysis of drugs, their components and their metabolites;
- will be able to recognize the major targets of drugs and to explain the biomedical basis for their use in therapeutics
- will be able to work in various laboratories (medical, toxicological, food analysis) and various research departments.
- profil d’enseignement [http://sam-docs.ulb.ac.be/referentiels/201718/1/B-PHAR.pdf]

Curriculum

Teaching units (TU) of the first part of the cursus aim to acquire basic scientific knowledge with a pharmaceutical specificity in mind. The TU « General Biology » deals with aspects relative to cytology, histology, parasitology. The TU « Plant Biology » is concerned with the evolution of plant kingdom, and the classification of plants with medicinal properties. The TU « Fundamentals of Anatomy » gives the future pharmacists basic knowledge on the structure and topology of human body and includes elements of embryology. The TU « General Chemistry » deals with substances at a molecular level which is a requirement to better explain the progress of a chemical reaction. The TU « Organic Chemistry » explains the mechanisms of the reactions involved in the synthesis of active ingredients of drugs. To improve the rate of success of first-year student, learning seminars are organized (test guidance, language skills, literature search, computer science). The TU « Pharmacy and Society » deals with themes such as the history of pharmacy, the journey of drugs, the access of patients to care and medications, economical problems of health care and a few major ethical and social problems in relation to medical drugs.

The aim of the TU of the second and third parts of the program is to provide the students the fundamentals of biochemistry, biology and physiology. These elements are required to the comprehension of pathological processes in man (infection, metabolic disorders, tumors,...) studied in the last part of the program. Other TU introduce the students to the methods and techniques routinely used to analyze drugs. Some TU are devoted to the study and the quality control of drugs and of their components. These TU give the students the theoretical and practical basis required for their future study of the mode of action and of the analysis of therapeutic agents. At the end of the program, transdisciplinary practicals are organized in order to help the students to integrate their recent biological and chemical assets through problem-based learning.

Benefits of the training

The program is organized by the Faculty of Pharmacy which has extensive collaboration (teaching and research) with the Faculty of Sciences and the Faculty of Medicine.
Many members of our teaching staff (full professors, assistant professors) are pharmacists. Some of them are even involved in a program of permanent training organized by a Belgian group of pharmacists. Our teaching staff is thus well aware of the most important academic aspects not only to train a good pharmacist but also to give this pharmacist a solid background which will help him to progress in his profession.

Research internship in the Faculty laboratories is a possibility for students who plan to join a PhD program or the complementary Master program in Industrial Pharmacist.

Many TU are devoted to the basic formation in biological and chemical sciences which will help the students, once they graduated as pharmacists:

- To access and complete the different complementary Masters in pharmaceutical sciences
- To attend to a program of continuing education, a program required by the law and which has become mandatory considering the new molecules constantly developed and which have narrower therapeutic targets.

Our teaching assistants will provide supervision during your seminars, practicals and guidance sessions.

Equipment available to the students:

- Teaching and research laboratories and a microscopy room
- A library dedicated to pharmaceutical journals and textbooks
- A computer room
- A study room
- An educational pharmacy with a software to manage pharmacies in order to simulate practical situations
- A museum on medicinal plants and phytochemistry

Involvement in the teaching of the Master program in pharmaceutical sciences of numerous professors of the Bachelor program.

Organization of the complete cursus in pharmaceutical sciences which allows collaboration and tutorship among students in the Bachelor and in the Master programs.

Teaching methods

Theoretical and practical classes as well as seminars and transdisciplinary projects

International/Openness

We have had exchange programs with foreign universities for a number of years now. Most exchanges take place in the last part of the Master program.

Progression per curriculum unit

The concept of a year of studies gives way to a system of accumulation of credits based on the student's individual programme. The cycle programme is offered in units of 60 credits. The units of 60 credits are proposed as an "ideal" course of study for students enrolled in this programme. The first 60 credits are a compulsory requirement for each curriculum programme of the bachelor's degree. Students are required to obtained the first 45 credits in order to continue the curriculum. Beyond this, students must register each year for a minimum of 60 credits (except for shortened programme or final year).

Learning supports

Individual trainings and personalized seminars are organized as support for students
## Bachelor in Pharmacy

### Bloc 1

### Cours obligatoires

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Coordinator(s)</th>
<th>Credits</th>
<th>Lecture</th>
<th>Tutorial classes</th>
<th>Practical Work</th>
<th>Field Trips</th>
<th>Language</th>
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<td>BIOL-J101</td>
<td>Biologie animale</td>
<td>Hassan JIJAKLI (Coordinator)</td>
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<td>Biologie végétale</td>
<td>Nausicaa NORET (Coordinator)</td>
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<td>36h</td>
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<td>Chimie générale</td>
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<td>48h</td>
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<tr>
<td>CHIM-J102</td>
<td>Chimie organique</td>
<td>Franck MEYER (Coordinator)</td>
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<td>24h</td>
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<td>MATH-F113</td>
<td>Mathématiques</td>
<td>Selim Rexhep (Coordinator)</td>
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<td>24h</td>
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<td>MEDI-J100</td>
<td>Eléments d'anatomie et d'embryologie humaine</td>
<td>Véronique FEIPEL (Coordinator) and Hassan JIJAKLI</td>
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<td>PHYS-F104</td>
<td>Physique 1</td>
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<td>Pharmacie et société, projets transdisciplinaires</td>
<td>Paule BOUSSARD (Coordinator), Hassan JIJAKLI, Franck MEYER, Nausicaa NORET, Mustapha TLIDI and Pierre VAN ANTWERPEN</td>
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<td>personal assignments: 20h</td>
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<td>TRAN-J111</td>
<td>Séminaires d'apprentissage</td>
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<td>5</td>
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<td>30h</td>
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</table>
Cours obligatoires

**BIOL-J201**  
Introduction à l’étude des plantes médicinales  
Caroline STEVIGNY (Coordinator)  
- 5 credits [lecture: 18h, practical work: 30h, field trips: 12h]  
- French

**BMOL-J201**  
Biologie moléculaire  
David VERMIJLEN (Coordinator)  
- 5 credits [lecture: 42h]  
- French

**BMOL-J202**  
Biochimie générale et humaine  
Jean-Paul DEHAYE (Coordinator)  
- 5 credits [lecture: 60h]  
- French

**CHIM-J201**  
Chimie organique pharmaceutique  
François DUFRASNE (Coordinator)  
- 5 credits [lecture: 36h, tutorial classes: 12h]  
- French

**CHIM-J202**  
Spectroscopies moléculaires et spectrométrie de masse  
Pierre VAN ANTWERPEN (Coordinator), Cédric Delporte and Michel LUHMER  
- 5 credits [lecture: 12h, tutorial classes: 18h, workshop: 6h, personal assignments: 24h]  
- French

**MEDI-J201**  
Physiologie humaine  
Stéphanie POCHET (Coordinator)  
- 5 credits [lecture: 60h]  
- French

**PHAR-J201**  
Analyse pharmaceutique partie 1  
Jacques DUBOIS (Coordinator)  
- 5 credits [lecture: 60h]  
- French

**PHAR-J203**  
Analyse pharmaceutique partie 2  
Jacques DUBOIS (Coordinator)  
- 5 credits [tutorial classes: 10h, practical work: 65h]  
- French

**STAT-J201**  
Statistiques appliquées aux sciences pharmaceutiques  
Kris De Braekeleer (Coordinator)  
- 5 credits [lecture: 22h, tutorial classes: 26h]  
- French

**TRAN-J201**  
Scientific English  
Stéphanie POCHET (Coordinator), Jean-Paul DEHAYE and David VERMIJLEN  
- 5 credits [lecture: 12h, tutorial classes: 24h, personal assignments: 24h]  
- French

**TRAN-J211**  
Approche pratique des sciences du vivant  
Stéphanie POCHET (Coordinator), Cédric Delporte and David VERMIJLEN  
- 10 credits [practical work: 100h, personal assignments: 15h]  
- French
Bachelor in Pharmacy
Bloc 3

Cours obligatoires

<table>
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<tr>
<th>Code</th>
<th>Course</th>
<th>Coordinator(s)</th>
<th>Credits</th>
<th>Lectures</th>
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<th>Tutorial Classes</th>
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<tr>
<td>BIOL-J301</td>
<td>Microbiologie générale, Hygiène, Immunologie</td>
<td>Véronique FONTAINE (Coordinator) and David VERMIJLEN</td>
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<td>MEDI-J301</td>
<td>Physiopathologie, éléments de pathologie humaine et épidémiologie</td>
<td>Marc LEEMAN (Coordinator) and Kris De Braekeleer</td>
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<td>Stéphanie POCHET (Coordinator)</td>
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<td>24h</td>
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<td>PHAR-J302</td>
<td>Analyse pharmaceutique : méthodes instrumentales et contrôle de qualité</td>
<td>Jean-Michel KAUFFMANN (Coordinator), Kris De Braekeleer and Cédric Delporte</td>
<td>5</td>
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<td>24h</td>
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<td>PHAR-J303</td>
<td>Etude des médicaments : Pharmacognosie et médicaments d'origine naturelle</td>
<td>Caroline STEVIGNY (Coordinator)</td>
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<td>PHAR-J304</td>
<td>Etude des médicaments : médicaments inorganiques et radiopharmacie</td>
<td>Jacques DUBOIS (Coordinator) and Jean-Michel KAUFFMANN</td>
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<td>PHAR-J305</td>
<td>Etude des médicaments : médicaments organiques 1 et biologiques</td>
<td>François DUFRAISNE (Coordinator) and Cédric Delporte</td>
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<tr>
<td>TRAN-J311</td>
<td>Projet transdisciplinaire en analyse des médicaments</td>
<td>Jean-Michel KAUFFMANN (Coordinator), Jacques DUBOIS, François DUFRAISNE, Kris De Braekeleer and Caroline STEVIGNY</td>
<td>10</td>
<td>62h</td>
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<td>TRAN-J312</td>
<td>Pratique officinale</td>
<td>François DUFRAISNE (Coordinator), Jean-Michel KAUFFMANN and Caroline STEVIGNY</td>
<td>10</td>
<td>80h</td>
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# Bachelor in Pharmacy

## Bloc P

### Cours obligatoires

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<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Coordinator(s)</th>
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<tr>
<td>BIOL-J101</td>
<td>Biologie animale 🟢 Hassan Jijakli (Coordinator)</td>
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<td>BIOL-J102</td>
<td>Biologie végétale 🟢 Nausicaa Noret (Coordinator)</td>
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<td>CHIM-J101</td>
<td>Chimie générale 🟢 Paule Boussard (Coordinator)</td>
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<tr>
<td>CHIM-J102</td>
<td>Chimie organique 🟢 Franck Meyer (Coordinator)</td>
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<tr>
<td>CHIM-J103</td>
<td>Chimie expérimentale 🟢 Paule Boussard (Coordinator) and Franck Meyer</td>
<td>5</td>
<td>60h practical work</td>
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<tr>
<td>MATH-F113</td>
<td>Mathématiques 🟢 Selim Rexhep (Coordinator)</td>
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<tr>
<td>MEDI-J100</td>
<td>Eléments d’anatomie et d’embryologie humaine 🟢 Véronique Feipel (Coordinator) and Hassan Jijakli</td>
<td>5</td>
<td>6h practical work, 4h field trips</td>
<td>French</td>
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<tr>
<td>PHYS-F104</td>
<td>Physique 🟢 Glenn Barnich (Coordinator), Barbara Clerbaux and Mustapha Tlidi</td>
<td>10</td>
<td>72h tutorial classes, 36h, field trips</td>
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<tr>
<td>TRAN-J103</td>
<td>Pharmacie et société, projets transdisciplinaires 🟢 Paule Boussard (Coordinator), Hassan Jijakli, Franck Meyer, Nausicaa Noret, Mustapha Tlidi and Pierre Van Antwerpen</td>
<td>5</td>
<td>20h personal assignments</td>
<td>French</td>
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<td>TRAN-J111</td>
<td>Séminaires d’apprentissage 🟢 Paule Boussard (Coordinator)</td>
<td>5</td>
<td>30h tutorial classes</td>
<td>French</td>
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<td>BIOL-J201</td>
<td>Introduction à l’étude des plantes médicinales 🟢 Caroline Stevigny (Coordinator)</td>
<td>5</td>
<td>18h practical work, 12h field trips</td>
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<td>BMOL-J201</td>
<td>Biologie moléculaire 🟢 David Vermijlen (Coordinator)</td>
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<td>BMOL-J202</td>
<td>Biochimie générale et humaine 🟢 Jean-Paul Dehaye (Coordinator)</td>
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<td>36h practical classes</td>
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<td>CHIM-J202</td>
<td>Spectroscopies moléculaires et spectrométrie de masse 🟢 Pierre Van Antwerpen (Coordinator), Cédric Delporte and Michel Lühmer</td>
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<td>PHAR-J201</td>
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**STAT-J201** Statistiques appliquées aux sciences pharmaceutiques  
Kris De Braekeleer (Coordinator)  
5 credits [lecture: 22h, tutorial classes: 26h]  
French

**TRAN-J201** Scientific English  
Stéphanie Pochet (Coordinator), Jean-Paul DEHAYE and David VERMIJLEN  
5 credits [lecture: 12h, tutorial classes: 24h, personal assignments: 15h]  
French

**TRAN-J211** Approche pratique des sciences du vivant  
Stéphanie Pochet (Coordinator), Cédric Delporte and David VERMIJLEN  
10 credits [practical work: 100h, personal assignments: 15h]  
French

**BIOL-J301** Microbiologie générale, Hygiène, Immunologie  
Véronique Fontaine (Coordinator) and David VERMIJLEN  
5 credits [lecture: 50h, personal assignments: 5h]  
French

**BIOL-J302** Microbiologie médicale  
Véronique Fontaine (Coordinator)  
5 credits [lecture: 22h, practical work: 42h]  
French

**MEDI-J301** Physiopathologie, éléments de pathologie humaine et épidémiologie  
Marc LEEMAN (Coordinator) and Kris De Braekeleer  
5 credits [lecture: 44h, tutorial classes: 4h]  
French

**PHAR-J301** Pharmacologie générale et éléments de pharmacocinétique  
Stéphanie Pochet (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 24h, personal assignments: 12h]  
French

**PHAR-J302** Analyse pharmaceutique : méthodes instrumentales et contrôle de qualité  
Jean-Michel KAUFFMANN (Coordinator), Kris De Braekeleer and Cédric Delporte  
5 credits [lecture: 36h, practical work: 24h]  
French

**PHAR-J303** Etude des médicaments : Pharmacognosie et médicaments d’origine naturelle  
Caroline STEVIGNY (Coordinator)  
5 credits [lecture: 42h, practical work: 24h]  
French

**PHAR-J304** Etude des médicaments : médicaments inorganiques et radiopharmacie  
Jacques DUBOIS (Coordinator) and Jean-Michel KAUFFMANN  
5 credits [lecture: 36h, practical work: 24h]  
French

**PHAR-J305** Etude des médicaments : médicaments organiques 1 et biologiques  
François DUFRASNE (Coordinator) and Cédric Delporte  
5 credits [lecture: 60h]  
French

**TRAN-J311** Projet transdisciplinaire en analyse des médicaments  
Jean-Michel KAUFFMANN (Coordinator), Jacques DUBOIS, François DUFRASNE, Kris De Braekeleer and Caroline STEVIGNY  
10 credits [tutorial classes: 28h, practical work: 62h, personal assignments: 18h]  
French

**TRAN-J312** Pratique officinale  
François DUFRASNE (Coordinator), Jean-Michel KAUFFMANN and Caroline STEVIGNY  
10 credits [tutorial classes: 24h, practical work: 80h, personal assignments: 12h]  
French