FARM1BA Baccalauréat en sciences pharmaceutiques (Bachelor of Pharmaceutical Sciences)

Study objectives

Pharmaceutical Sciences revolve around medication and the people who use it - the sick. From its conception to its production, from the stages of pharmaceutical research to commercialisation and information to dispensation, pharmacists are involved in multiple professional worlds, at each step of the process. Consequently, if dealing with medication is what interests you, Pharmaceutical Sciences will give you the opportunity to devote yourself to that kind of profession within milieux as diversified as those of public dispensaries, universities, hospitals or industry. This diversity relates to scientific, chemical and biological bases, always with the same final goal of improving the patient's health.
The bachelor's of Pharmaceutical Sciences enables the student to acquire the skills needed for the practice of the various orientations of pharmaceutics (research, industry, hospitals, dispensaries, administration and information relating to medication). The course content rotates around two main axes : "Basic Life Sciences" and "Knowledge of Medication". The studies aim to develop the skills needed for the integration of the basic sciences in pharmaceutical contexts.
The skills to be acquired can be summed up in four points, as follows:

1. Integration of the basic sciences (Chemistry, Biology, Physiology, etc.) within the specific domains of pharmaceutical sciences (Pharmacology/Pharmacokinetics, Analytical and Pharmaceutical Chemistry, Galenics, etc.).
2. Rigourous administration and control procedures related to the protocol for carrying out experiments (from handling information to dealing with production and the interpretation and presentation of results).
3. Development of a critical mind vis-à-vis the sources of information available.
4. Faculty of adaptation and adequation of comportment within the various branches of pharmaceutical sciences (public dispensaries, hospitals, industry and/or research) thanks to the acquisition of knowledge and capacities common to all the sectors.

General presentation of the programme

The bachelor's of Pharmaceutical Sciences represents 180 credits.
A credit refers to " the volume of work that the student needs to produce to attain the study objectives".
The " major " of the programme consists of basic foundation studies for 60 credits (1st year) and specific studies (2nd and 3rd year) for 90 credits.
The major is completed by a course of 30 credits - an option, such as those offered on the "options menu", (advanced studies in Pharmaceutical Sciences), or in the form of a " minor " (an opening course in other disciplines). These courses of 30 credits may be followed on a parallel with the specific course.

Principal Subjects

The bachelor's studies enable the student to learn about the functioning of life, from the atom to society.

Atoms, molecules and the systems which govern them

General Chemistry, Analytical, Inorganic and Organic Life, - Biochemistry - Applied Physics - Biophysics - Processing Applied Data - Instrumental Analysis.

From plant cells to animal cells, from organic tissue to the human being

General, Cellular, Special and Molecular Biology - Cytology and Histology - Elements of Functional Anatomy - Immunology - Physiology - Microbiology - General Pathology - Botanical Introduction to Pharmacognosy - Medical Biochemistry

Medication

Organic Chemistry applied to Medication - Conception of Medication - Pharmacology - Introduction to Pharmacotherapy - Pharmacokinetics and Xeno-biotic Metabolism - Pharmacognosy - Pharmaceutical Chemistry

Man and Society, the individual in the professional world

Philosophy - English
Immersion internship in a pharmaceutical milieu and the corresponding introduction courses

Minors or other options available

During the bachelor's of Pharmaceutical Sciences, the student has the opportunity to further his knowledge in the various pharmaceutical domains, by selecting **in-depth** study options.
Instead of these options, the bachelor's programme may likewise include an option of a " **minor** ", which will enable the

student to open up new horizons. Minors in the following subjects : Biology, Chemistry, Law, Economics, Human Nutrition, Clinical Biomedical Sciences, Statistics, etc., may be envisaged, subject to the approval of the Teaching Committee of the School of Pharmacy.

Evaluation

The course content is evaluated in accordance with the prevailing rules and regulations of the University (c.f. exam reglementation). The exams are organised at the end of the course session periods (January, June) as well as in September. The practical work and work experience, if any, take the form of ongoing evaluation.

Admission to the programme

The conditions and regular admission requirements are specified on the web pages "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 Pharmaceutical Sciences. Complementary masters with a professional vocation are organised in the practice of industrial pharmacy, clinical biology, hospital pharmacy, clinical hospital pharmacy, pharmaceutical technology.

In addition, there is sufficient homogeneity within the programmes offered by the various schools of the Faculty of Medecine (MED, FARM, DENT, SBIM, IEPR) to make programme re-orientation possible during the course of the bachelor's studies, subject to additional complementary courses.

Other studies accessible upon completion of the programme

Other masters within the Faculty of Medecine, as well as some programmes from other faculties, may be accessible subject to certain prerequisites.

Useful contacts

Programme management

FARM Ecole de pharmacie

President of the School of Pharmacy : Didier Lambert Tel. 027647362

President of the Training Committee : Joëlle Leclercq Tel. 027647254

Secretaries: Annie Célis and Josiane Toremans (Tel. 027647360, Sfar.toremans@sfar.ucl.ac.be, celis@sfar.ucl.ac.be

The secretary's office is open to the students every morning from 10 00 a.m. to 12 00 noon and on Mondays and Thursdays from 1 00 p.m. to 2 00 p.m. There is a special timetable during the holidays.

Teaching Committee

Joëlle Leclercq (President), Didier Lambert, Marie-Paule Mingeot, Etienne Sonveaux, Anne Spinewine and four student representatives.

Study Advisor

The Study Advisor assists the student in the elaboration of his personal study programme, in accordance with his previous studies and personal ambitions.

Study Advisor : Etienne Sonveaux (Tel. 027647349, sonveaux@cmfa.ucl.ac.be, Localisation Tour 73 van Helmont)

Exam Juries 2005-2006

1st year of the bachelor's

President of the jury : still to be determined

Secretary of the jury : still to be determined

2nd year of the bachelor's

President of the jury : still to be determined

Secretary of the jury : still to be determined

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 History of Art and Archaeology (*)
- Minor in Musicology
- Minor in Psychology and Education (*)
- Minor in Human Nutrition
- Minor in General Biomedical Sciences
- Minor in Clinical Biomedical Sciences
- 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 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

FARM 11BA First year of studies

Foundation studies (60 credits)

Common pool of subjects FARM/SBIM/MED/DENT (48 credits):

FARM1160	Philosophy[30h] (3 credits) (in French)	N.
MD1001	Experimental physics and mathematical introduction to experimental sciences (1st part)[60h+18.5h] (8 credits) (in French)	Bernard Piraux
MD1002	Experimental physics and mathematical introduction to experimental sciences (2nd part)[30h+21h] (5 credits) (in French)	Bernard Piraux
MD1003	Mineral and general chemistry[60h+28h] (8 credits) (in French)	Paul Depovere, Claude Ronneau
MD1004	Organic Chemistry[60h+30h] (9 credits) (in French)	Paul Depovere, Jacques Fastrez, Jean-Philippe Soumillion (coord.)
MD1005	Biologie générale[65h+25h] (9 credits) (in French)	Jean Baptiste Demoulin, Marie-Christine Many, Philippe van den Bosch Sanchez de Aguilar
MD1006	Cytology and general histology[10h+40h] (5 credits) (in French)	Jean-François Denef, Marie-Christine Many (supplée Jean-François Denef)

Pharmaceutical specificities (12 credits) :

FARM1003	Practicals of general and inorganic chemistry[0h+30h] (2 credits) (in French)	Etienne Sonveaux
FARM1004	The molecular aspect of drugs[0h+30h] (2 credits) (in French)	Paul Depovere, Jacques Poupaert, Etienne Sonveaux (coord.)
FARM1007	Drug conception[20h] (2 credits) (in French)	Pierre Gianello
FARM1008	Design of the drug[15h+15h] (3 credits) (in French)	Véronique Préat, Paul Tulkens (coord.)
ANGL1854	Medical English[30h] (3 credits)	Sandrine Mulkers

Supplementary pedagogical activities :

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

MD1011	Activités d'encadrement complémentaire en physique (par	Bernard Mahieu, Bernard Piraux

	séries)[12h] (in French)	
MD1013	Activités d'encadrement complémentaire en chimie générale et minérale (par séries)[12h] (in French)	Paul Depovere, Daniel Peeters, Claude Ronneau, Etienne Sonveaux (coord.)
MD1014	Activités d'encadrement complémentaire en chimie organique (par séries)[12h] (in French)	Paul Depovere, Jacques Fastrez, Jacques Poupaert, Etienne Sonveaux, Jean-Philippe Soumillion (coord.)
MD1015	General Biology (Complementary activities)[12h] (in French)	Pascal Kienlen-Campard

FARM 12BA Second year of studies

Compulsory subjects (45 credits)

FARM1242	Introduction to analytical chemistry[30h+105h] (6 credits) (in French)	Bernard Tilquin
FARM1221	Biochemistry and molecular biology[75h+37.5h] (10 credits) (in French)	Nathalie Delzenne (coord.), Frédéric Lemaigre, Marie-Paule Mingeot
FARM1231	Organical chemistry Part 2[45h+120h] (10 credits) (in French)	Paul Depovere, Jacques Poupaert, Etienne Sonveaux (coord.)
FARM1232	General Pharmacology[15h+7.5h] (2 credits) (in French)	Emmanuel Hermans
FARM1201	Human physiology and basics of physiopathology[75h+7.5h] (8 credits) (in French)	Emmanuel Hermans, Jean-Christophe Jonas, Nicole Morel, Maurice Wibo
FARM1233	Botanical introduction to pharmacognosy[45h+30h] (6 credits) (in French)	Jean-Pierre Auquière, Joëlle Leclercq
FARM1282	General microbiology[18h+15h] (3 credits) (in French)	Thomas Michiels

Minors or other available options

The student who chooses a minor in the 2nd year will have to pursue it in the 3rd year and will therefore not be able to choose another option on offer.

In-depth pharmaceutical courses (15 credits)

FARM1219	Biophysics applied to the drugs[30h+15h] (3 credits) (in French)	Bernard Gallez, Marie-Paule Mingeot, André Nauts
FARM1229	Molecular genetics and drugs[22.5h+7.5h] (3 credits) (in French)	Etienne De Plaen, Jean-Noël Octave (coord.)
FARM1239	Computerized workshop and research on scientific information related to drugs.[0h+15h] (2 credits) (in French)	Didier Lambert
MED1200	Eléments d'épidémiologie[15h] (2 credits) (in French)	Benoît Boland
MED1270A	Psychologie (partie psychologie générale, 15h)[30h] (2 credits) (in French)	Marc Crommelinck, Jacques Van Rillaer
ANGL1855	Medical English[30h] (3 credits)	Françoise Stas (coord.)

Minor (15 credits)

FARM 13BA Third year of studies

Compulsory subjects (45 credits)

SBIM1304P	Immunologie générale (partim 30h)[45h] (3 credits) Δ (in French)	N.
FARM1301	Analyse instrumentale[30h+105h] (6 credits) Δ (in French)	N.
FARM1302	Chimie pharmaceutique[45h+30h] (6 credits) (in French)	Didier Lambert (coord.), Jacques Poupaert, Etienne Sonveaux
FARM1303	Biochimie médicale[20h] (2 credits) Δ (in French)	N.
FARM1304	Pharmacognosie (A. Pharmacognosie chimique et B. Plantes médicinales)[45h+30h] (6 credits) Δ (in French)	N.
FARM1300	Pharmacocinétique et métabolisme des xénobiotiques[30h+30h] (5 credits) Δ (in French)	N.
FARM1305	Eléments de pathologie générale[30h] (3 credits) Δ (in French)	N.
FARM1306	Microbiologie médicale[45h] (4 credits) Δ (in French)	N.
FARM1332	Pharmacologie générale, 2e partie[30h] (3 credits) Δ (in French)	N.

FARM1310	Inorganic drugs with use diagnosis and therapeutic[30h] (3 credits) (in French)	Bernard Gallez
FARM1307	Eléments de physico-chimie appliqués aux sciences pharmaceutiques[15h] (2 credits) Δ (in French)	N.
FARM1347	Traitement statistique des données[0h+30h] (2 credits) Δ (in French)	N.

Minors or other available options (more in-depth studies or studies for research students or studies abroad)

Only the students who have chosen the "in-depth pharmaceutical studies " option in the 2nd year can choose to pursue this direction or to become a research student or continue their studies abroad. The others will pursue their existing minor.

In-depth pharmaceutical studies (15 credits)

The student will choose one out of the five course topics on " introduction to the pharmaceutical world", including the work experience period " (7 credits), as well as the courses listed below, corresponding to 8 credits.

FARM1309	Introduction au monde pharmaceutique y compris stages[7.5h] (7 credits) Δ (in French)	N.

Five topics : dispensary, hospital and clinic, industry, clinical biology, research. The work experience for the "industrial topic" may either be carried out in a pharmaceutical firm or in an officially recognised analysis laboratory (university or non-university) ; complementary sessions on instrumental analysis can be organised within the School in this context.

FARM1319	Pharmacognosie-étude de cas[15h] (2 credits) Δ (in French)	N.
FARM1329	Compléments d'analyse instrumentale[0h+30h] (2 credits) Δ (in French)	N.
FARM1339	Compléments de pharmacocinétique[15h] (2 credits) Δ (in French)	N.
FARM1349	Séminaire intégré en sciences pharmaceutiques[0h+45h] (4 credits) Δ (in French)	N.
FARM1359	Drug design en chimie pharmaceutique[15h] (2 credits) Δ (in French)	N.
FARM1369	Evaluation de la biodistribution et de l'effet d'un médicament par des méthodes non invasives[15h] (2 credits) Δ (in French)	N.
FARM1379	Exercices pratiques de biochimie médicale[0h+30h] (2 credits) Δ (in French)	N.
FARM1389	Premiers secours[15h] (2 credits) Δ (in French)	N.

Any student wishing to follow an option organised by another School within the Faculty of Medecine will check out the possibility of his request with the Study Advisor.

Status of a research student (15 credits)

Any student wishing to pursue his studies in the direction of pharmaceutical research, will apply for enrolment with a host laboratory upon presentation of his dossier. Acceptance thereof will be dependent on the academic results obtained and will remain the prerogative of the Research Student Committee.

FARM1309	Introduction au monde pharmaceutique y compris stages[7.5h] (7 credits) Δ (in French)	N.

Research students will choose the "research domain".

FARM1311	Projet expérimental personnel(8 credits) (in French)	N.

Minimal studies abroad (Erasmus) (15 credits)

Besides the possible choice of spending one year or six months abroad, any student wishing to pursue a minimal part of his study programme abroad, via the European network of which UCL is a partner, may follow an ensemble of courses for 15 credits (subject to the approval of the Committee). This volume of courses may include a work experience period as indicated above.

Minors (15 credits)