Pharmacy education & training in

PORTUGAL

2010

Education and Culture DG
Lifelong Learning Programme

PHARMINE
Pharmacy Education in Europe

PHARMINE (PHARMacy education IN Europe) is a project funded by the European Commission (LLL programme, Erasmus). Its aims and objectives are to survey the present state of pharmacy education and training in Europe, and on the basis of this survey, formulate recommendations for new competence curricula for pharmacy education and training in the EU. A model for pharmacy education and training for candidate member states and other countries will be proposed. The opportunities for a quality assurance and accreditation scheme for EU pharmacy courses will be investigated.

PHARMINE will take into account two important issues, (i) the EU directive 2005/36/EC on the recognition of professional qualifications and, (ii) the Bologna declaration. PHARMINE will focus both on recommendations for core education and training and for activities such as industrial and hospital pharmacy.

The PHARMINE consortium consists of universities which are members of the European Association of Faculties of Pharmacy (EAFP) and EU partner associations representing community, hospital of industrial pharmacy, together with the European Pharmacy Students' Association and other interested bodies.

In order to reach the objectives of the PHARMINE project, a work-plan was set up and divided into 7 work-packages (WP).

The aims and objectives of PHARMINE WP7 are to:

1. Survey European higher education institutions (HEIs)
2. Produce a databank of pharmacy education and training courses in Europe leading to core pharmacist qualifications and to qualifications required for industrial and hospital pharmacy
3. Survey to what extent the "Bologna" (based on the principles enumerated in the Bologna declaration) and the "Sectoral profession" (based on 2005/36/EC) models for pharmacy education and training are compatible.

PHARMINE WP7 will produce several documents including a WP7 survey by country. **Such surveys are intended for the use of students and staff interested in mobility and/or contacts with the country in questions as well as educationalists working on pharmacy education and training in Europe.**

(see: The PHARMINE paradigm.pdf)

The "PHARMINE survey of European higher education institutions delivering pharmacy education & training – PORTUGAL" was produced by:

Jeffrey ATKINSON
PHARMINE Executive director
Pharmacolor Consultants Nancy
12 rue de Versigny
54600 Villers
France.
jeffrey.atkinson@pharma.uhp-nancy.fr
www.pharmine.org

José Augusto Guimarães Morais
Dean of the School of Pharmacy
Faculdade de Farmácia – Universidade de Lisboa
Av Prof. Gama Pinto
1649 -003 Lisboa
Portugal
jagmorais@ff.ul.pt
www.ff.ul.pt

Afonso Miguel Cavaco
Faculdade de Farmácia – Universidade de Lisboa
Av Prof. Gama Pinto
1649 -003 Lisboa
Portugal
acavaco@ff.ul.pt
www.ff.ul.pt

with the help of:

Lea NOEL
PHARMINE project assistant
Dept.MICH
Vrije Universiteit Brussel
Laarbeeklaan 103
B 1090 Brussel
Belgium
lea.noel@vub.ac.be
www.vub.ac.be/MICH

Contacts in Portugal.

	First contact	Second contact
Name	José Augusto Guimarães Morais	Afonso Miguel Cavaco
HEI	Faculdade de Farmácia – Universidade de Lisboa	
Street	Av Prof. Gama Pinto	
City, zip	1649 -003 Lisboa	
Country	Portugal	
Telephone	351 1217946400	
Fax	351 1217946470	
e-mail	jagmorais@ff.ul.pt	acavaco@ff.ul.pt
Website	www.ff.ul.pt	

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Summary.

Pharmacy education and training in Portugal address several main professional areas: community, hospital, clinical biology, industry and regulatory affairs. Nearly 65% of the pharmacy graduates work at the community level, followed by clinical biology (11%) and hospital pharmacy (7.7%).

The integrated degree of Master in Pharmacy (4.5 years + 6 months traineeship) allows graduates to work in all sectors. Public and some private pharmacy HEIs provide additional education in the form of a degree of Master in Science (Bologna 2nd cycle), which in the case of clinical biology allows post-graduate students to register with the Order of Pharmacists (Pharmaceutical Society) as specialists. It is up to the Order to confer the title of specialist, after a minimum number of years of practice and a specialist examination for hospital and industry pharmacists.

In Portugal the Directive 2005/36/EC is in place, thus pharmacists recognised by the pharmaceutical authority of another member state are recognized as pharmacists by the Portuguese Order.

Introduction.

Statistics for Portugal.

Total population: 10,579,000

Gross national income per capita (PPP international $): 19,960

Life expectancy at birth m/f (years): 74/81

Healthy life expectancy at birth m/f (years, 2003): 67/72

Probability of dying under five (per 1 000 live births): 4

Probability of dying between 15 and 60 years m/f (per 1 000 population): 133/53

Total expenditure on health per capita (Intl $, 2006): 2,080

Total expenditure on health as % of GDP (2006): 10.0

Figures are for 2006 unless indicated. Source: World Health Statistics 2008
http://www.who.int/whosis/whostat/2009/en/index.html

Highlights on health in Portugal.

Despite a gain of 4.5 years over the past 20 years, Portuguese people have one of the lowest levels of life expectancy in Europe. Girls born in 2002 can expect to live almost 81 years and boys slightly less than 74 years. Portuguese babies now reach their first birthday as often as in Europe, with a major improvement especially in survival during the first month of life. However, the majority of people in Portugal rate their health as being poor or very poor.

Similar to other European countries, most Portuguese die from non-communicable diseases. Mortality from cardiovascular diseases is higher than in Europe, but its two main components, ischaemic heart disease and cerebrovascular disease, display inverse trends compared with Europe, with cerebrovascular disease being the single biggest killer in Portugal (17%). Portuguese people die 12% less often from cancer than in Europe, but mortality is not declining as rapidly. Cancer is more frequent among children as well as among women younger than 44 years. Although lung cancer (slowly increasing among women) and breast cancer (decreasing rapidly) are scarcer, cancer of the cervix and the prostate are more frequent. Portugal has the highest mortality rate for diabetes in Europe, with a sharp increase since the late 1980s.

Infectious diseases take more lives in Portugal than in Europe, mainly through HIV, tuberculosis and hepatitis B and C infections. They put a higher-than-average burden on the Portuguese: 6% of the total burden of disease for men and 3% for women. Both mortality and incidence rates of HIV/AIDS are amongst the highest in Europe. The main vector for transmission in Portugal is drug injection (half of the cases). TB is in the highest range for European countries. It remains a threat to public health in Portugal, especially among men aged 60 years and older, but also killing people 15–29 years old three to five times more often than in Europe.

Alcohol consumption has been 15% higher in Portugal than in Europe for the last two decades, inducing adverse effects, measured in particular by the mortality from liver cirrhosis and other digestive diseases (both in the highest range of European countries, especially among men). Tobacco consumption in Portugal was once one of the lowest in Europe but has now caught up with the average

Portuguese people consume more fruits and vegetables than Europe average. Although Portugal is part of the Mediterranean belt of healthy diet, obesity and CVD are as frequent or more frequent than in Europe.

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Source: http://www.euro.who.int/document/chh/por_highlights.pdf

For further information, see:

Pharmaceutical Pricing and Reimbursement Information (PPRI) – Portugal
http://ppri.oebig.at/Downloads/Results/Portugal_PPRI_2008.pdf

ECORYS - Study of regulatory restrictions in the field of pharmacies, at :
http://ec.europa.eu/internal_market/services/docs/pharmacy/appendices_en.pdf

Eurybase - National summary sheets on education system in Europe and ongoing reforms, 2009 Edition – Portugal, at :
http://eacea.ec.europa.eu/education/eurydice/documents/eurybase/national_summary_sheets/047_PT_EN.pdf

Chapter 1. Organization of the activities of pharmacists, professional bodies

	Y/N, number or %	Comments.
Community pharmacy		
Number of community pharmacists	6108 (2007)	Source: 1 – Ordem dos Farmacêuticos (Pharmaceutical Society) www.ordemfarmaceuticos.pt
Number of community pharmacies	2667 (2007)	Source: 2 – INFARMED – Medicines Statistics 2007 www.Infarmed.pt ~ 4000 patients / pharmacy 2.3 pharmacists per pharmacy
Competences and roles of community pharmacists		Preparation, control, selection, purchase, storage and dispensing of human and veterinarian medicines as well as medical devices in public and private pharmacies. Information sourcing on prescription-only medicines and other products, contributing to their rational use, including evaluation of medical prescriptions. Diagnostic services: measurement of blood pressure, sampling and determination of biochemical parameters.
Ownership of a pharmacy limited to pharmacists?	No	Only since 2007 Barriers to non-Portuguese, EU-qualified pharmacists exist in the form of Portuguese language requirements. A pharmacist may not form a partnership with other pharmacists, druggists, wholesalers, insurance companies or medical GPs. Internet pharmacies are not allowed.
Rules governing the distribution of pharmacies?	Yes	One community pharmacy per 3,500 habitants in each neighbourhood / county. > 500 metres between pharmacies.
Healthcare products through other channels?	Yes	Since 2007, specialized high-street shops or in dedicated areas in supermarkets.
Other persons involved in community practice?	4596 (2007)	Technical Assistants – 3800 ; Counter Assistants – 582 ; Practitioners – 214 Source: 2 – INFARMED – Medicines Statistics 2007 www.Infarmed.pt
Organisation providing and validating the E&T		Polytechnic colleges under the authority of the Ministry for Higher Education and Sciences.
Duration (years)	4	For non-pharmacist practitioners or technical assistants
Subject areas		Similar to the ones for pharmacists but at a more elementary level.
Competences and roles		The same as those of a pharmacist but under the supervision of a pharmacist. The presence of a qualified pharmacist is required at all times by law.
Hospital pharmacy		
Hospital pharmacists	738	Source: 1 – Ordem dos Farmacêuticos www.ordemfarmaceuticos.pt
Hospital pharmacies	115	NHS Hospital pharmacies – 80 ; Private Hospital Pharmacies - 25
Competences and roles of hospital pharmacists		The same as for community pharmacists but more clinically oriented, e.g. PK monitoring, parenteral nutrition, drug information, preparations for treatment in oncology. Hospital pharmacies can dispense medicines to patients with specific illnesses such as HIV and cancer that are treated in the same hospital.
Pharmaceutical and related industries		
Companies: production, R&D and distribution	480 (2007)	Source: 3 – APIFARMA – The pharmaceutical Industry in Pictures 2008. www.apifarma.pt
Companies: production only	137	Source: 3 – APIFARMA – The pharmaceutical Industry in Pictures 2008. www.apifarma.pt

Companies: distribution only	343	
Companies: producing generic drugs only	Number: ?	This is a difficult number to come up with. There are only a few companies dedicated exclusively to producing generic drugs. Most of them manufacture generics as well as brand products under license.
Industrial pharmacy		
Number of pharmacists working in industry	674	Source: 1 – Ordem dos Farmacêuticos www.ordemfarmaceuticos.pt
Competences and roles		Quality control, manufacture, GMP, regulatory affairs, clinical trials and monitoring.
Other sectors		
Pharmacists working in other sectors	3313	Source: 1 – Ordem dos Farmacêuticos www.ordemfarmaceuticos.pt
Sectors		Food industry and control, education, R&D, clinical chemistry and biology, armed forces, wholesale and distribution.
Competences		Mostly laboratory activities including chemical, biochemical, microbiological, immunological, haematological determinations, as well as food and water chemistry.
Roles of professional associations		
Registration	Yes	Ordem dos Farmacêuticos (Pharmaceutical Society)
Creation of pharmacies, control of distribution	No	The Community Pharmacies Association (ANF) advises the national regulatory agency (INFARMED) on this matter.
Ethics, professional conduct	Yes	Ordem dos Farmacêuticos
QA and validation of HEI courses	Yes	Ordem dos Farmacêuticos
Other roles		Continuing education, professional advancement programs through specialized groups: industry, hospital, regulatory affairs and community pharmacy. The National Association of Pharmacies (Associação Nacional das Farmacias) has the following remit: • Create better working conditions • Improve the quality of the service • Cooperate with state government on implementation of projects and campaigns

References	
Texts and articles of national law	Law 2125 1965 Decree-Law 48537 1968 Decree-Law 48547 of 27/8/1968 Decree-Law 320/99 of 11/8/1999 Decree-Law 288/2001 of 10.11.2001 Decree-Law 307/2007 of 31/8/2007 Decree-Law 134/2005 of 16/8/2005 Governmental decree 367/72 of 3/7/1972 Governmental decree 827/2005 of 14/9/2005 Governmental decree 474/2004 of 29/6/2004
Ordem dos Farmacêuticos – (Pharmaceutical Society)	www.ordemfarmaceuticos.pt
INFARMED Autoridade Nacional do Medicamento e Produtos de Saúde – Medicines Statistics 2007	www.Infarmed.pt
APIFARMA – The Pharmaceutical Industry in Pictures 2008	www.apifarma.pt English: http://www.apifarma.pt/Default_en.aspx

Associaçao Nacional das Farmácias – ANF	http://www.anf.pt/
ECORYS / EU	http://ec.europa.eu/internal_market/services/docs/pharmacy/appendices_en.pdf

Chapter 2. Pharmacy HEIs, students and courses

	Y/N, number or %	If you wish to expand your answer, please add your comments below.
HEIs in Portugal	9	Only university-level faculties or institutes
Public	5	1. Faculdade de Farmácia da Universidade de Lisboa 2. Faculdade de Farmácia da Universidade de Coimbra 3. Faculdade de Farmácia da Universidade do Porto 4. Universidade da Beira Interior 5. Faculdade de Ciências e Tecnologia da Universidade do Algarve
Private	4	1. Instituto Superior de Ciências da Saúde Egas Moniz 2. Universidade Fernando Pessoa 3. Universidade Lusófona de Humanidades e Tecnologias 4. Instituto Superior de Ciências da Saúde – Norte
Organisation of HEIs		
Independent faculty	3	
Attached to a science faculty	6	
Portugal		
Teaching staff		
Teaching staff (nationals)	903	Excluding Faculdade de Ciências e Tecnologia da Universidade do Algarve and Instituto Superior de Ciências da Saúde – Norte.
International teaching staff (from EU MSs)	39	Excluding Faculdade de Ciências e Tecnologia da Universidade do Algarve and Instituto Superior de Ciências da Saúde – Norte.
International teaching staff (non EU)	10	Excluding Faculdade de Ciências e Tecnologia da Universidade do Algarve and Instituto Superior de Ciências da Saúde – Norte.
Professionals from outside the HEIs, involved in E&T	35	Excluding Universidade da Beira Interior, Faculdade de Ciências e Tecnologia da Universidade do Algarve, Instituto Superior de Ciências da Saúde – Norte, Universidade Fernando Pessoa and Universidade Lusófona de Humanidades e Tecnologias.
Students		
Places at entry following secondary school)	1021	*Numerus causus* 2008: FFUL – 223; FFUC – 175; FFUP – 203; UBI – 61; FCT/UALG – 44; ICS Egas Moniz – 110; U.F.Pessoa – 65; ULHT – 75; ISCSN - 65
Number of applicants for entry	4806	2008 Excluding Faculdade de Ciências e Tecnologia da Universidade do Algarve and Instituto Superior de Ciências da Saúde – Norte. 5 applicants / place
Number graduating as pharmacists.	702	2008 - Source: Ordem dos Farmacêuticos www.ordemfarmaceuticos.pt
Number of international students (from EU member states)	68	Excluding Universidade da Beira Interior, Faculdade de Ciências e Tecnologia da Universidade do Algarve, Instituto Superior de Ciências da Saúde – Norte and Universidade Fernando Pessoa
Number of international students (non EU)	58	Excluding Faculdade de Ciências e Tecnologia da Universidade do Algarve, Instituto Superior de Ciências da Saúde – Norte and Universidade Fernando Pessoa

Entry requirements (beginning of S1 of B1, following secondary school)		
Specific examination for pharmacy	Yes	
Advanced entry		
At which level?		Any level

What are the requirements?	[redacted]	There is a limited number of vacancies and criteria for candidates admission, including previous qualifications.
Fees per year		
For home students		FFUL – € 996,85; FFUC –€ 996,85; FFUP – € 996,00; UBI – € 996,85; FCT/UALG – €900; ICS Egas Moniz – n.a U.F.Pessoa – €5100; ULHT – €5687; ISCSN - €5700
For EU MS students		Erasmus students – no fee
For non EU students		Same as home students
Length of course	5 years	
Specialization		
Do HEIs provide specialized courses?	No	There is no specialization before the master's degree – only at the postgraduate / post-registration level.
Past and present changes in E&T		
Major changes since 1999?	Yes	Implementation of Bologna principles through a national decree in 2006.
Major changes envisaged before 2019?	Yes	Specialization in post-graduate education
Lisbon		
Teaching staff		
Teaching staff (nationals)	128	FTE: 106. Permanent: 110. Post-docs (20) and doctoral students (90) also participate in teaching.
International teaching staff (from EU MSs)	1	
Professionals from outside the HEIs	18	
Students		
Places at entry following secondary school	210/year	
Number of applicants for entry	1253/year	6 applicants / place
Number graduating as pharmacists.	190/year	10% drop-out rate
International students (EU member states)	45	Mostly Erasmus students in 2008.
International students (non EU)	16	Mostly from Portuguese speaking countries:
Entry requirements (beginning of S1 of B1, following secondary school)		
Specific pharmacy-entrance examination	Yes	Biology, Physics, Chemistry.
Advanced entry		
At which level?	[redacted]	Any level
What are the requirements?		There is a limited number of vacancies and criteria for candidates admission, including previous qualifications.
Fees per year		
For home students	996,85€	
For EU MS students	996,85€	Erasmus students - no fee
For non EU students	996,85€	
Length of course	5 years	It was reduced from 5.5 years to 5 years from 2006 onwards.
Specialization		
Do HEIs provide specialized courses?	No	There is no specialization before the master's degree – only at the postgraduate / post-registration level.

Past and present changes in E&T		
Major changes since 1999?	Yes	Implementation of Bologna principles through a national decree in 2006.
Major changes envisaged before 2019?	Yes	Specialization in post-graduate education
Is Lisbon typical of all HEIs in Portugal?	Yes	

References	
Texts and articles of national law	D.L. 42/2005 of 22.02.2005 D.L. 74/2006 of 24.03.2006 corrected by D.L. 107/2008 of 25.06.2008 and by D.L. 230/2009 14.09.2009 D.L. 230/2009 of 14.09.2009

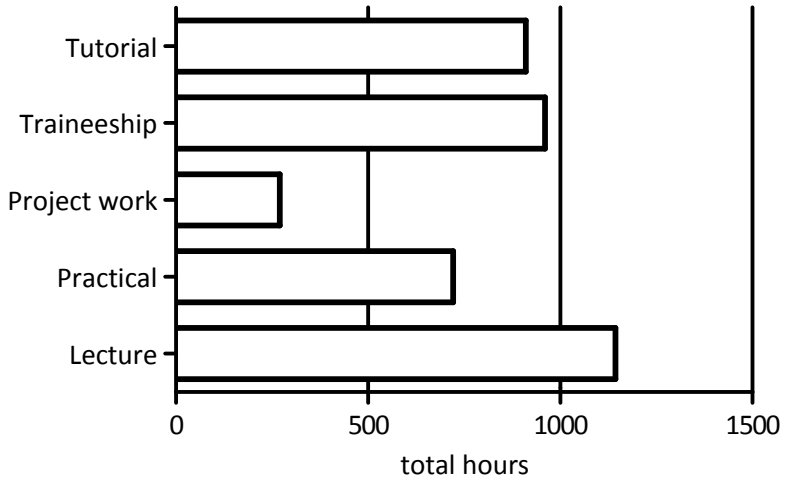
Chapter 3. Teaching and learning methods

Student hours

Method	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Lecture	260	273	247	260	104	**1144**
Tutorial	234	175.5	156	260	84.5	**910**
Practical	136.5	195	195	136.5	58.5	**721.5**
Project work	0	0	0	180	90	**270**
Traineeship*					960	**960**
Hospital	0	0	0	0	320	
Community	0	0	0	0	640	
Choice	0	0	0	39	39	**78**
Total	**630.5**	**643.5**	**598**	**875.5**	**1336**	**4083.5**

A successful traineeship is evaluated and validated at a final oral examination in a presence of a Faculty jury. Trainees are followed by Faculty teaching staff (once a month).
The Portuguese Pharmaceutical Order has accredited the degree, thus graduates are automatically admitted.

Student hours by teaching method.



References	
Website	www.ff.ul.pt

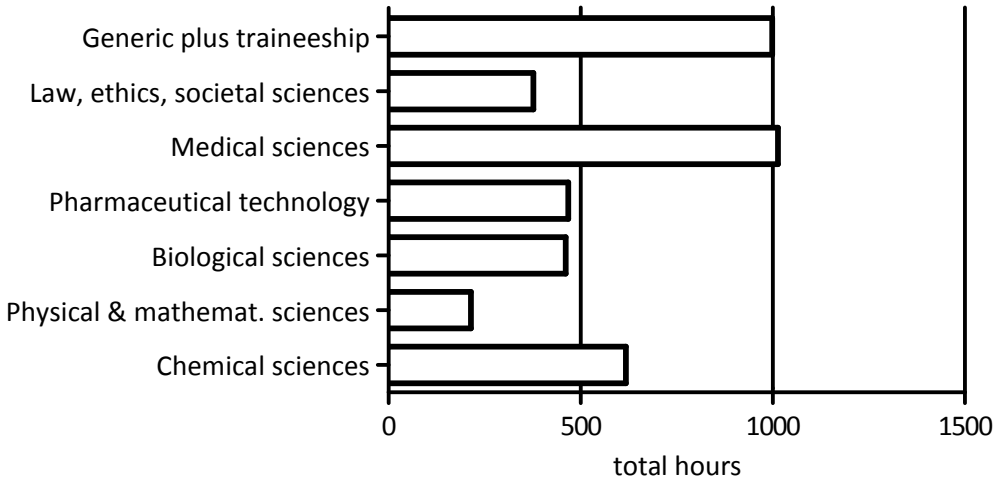
Chapter 4. Subject areas

Student hours

Subject area	Year 1	Year 2	Year 3	Year 4	Year 5	Total
CHEMSCI	234	234	65	84.5	0	**617.5**
PHYSMATH	214.5	0	0	0	0	**214.5**
BIOLSCI	130	149.5	45.5	91	45.5	**461.5**
PHARMTECH	0	0	169	299	0	**468**
MEDISCI	91	159	250	266.5	247	**1013.5**
LAWSOC	0	45.5	0	156	175.5	**377**
GENERIC	0	0	0	39*	0	**39**
GENERIC PLUS TRAINEESHIP	0	0	0	39	960	**999**
Total	**669.5**	**588**	**529.5**	**936**	**1428**	**4151**

*: Some topics included in LAWSOC course work.

Student hours by subject area.



References	
Website	www.ff.ul.pt

Chapter 5. Impact of the Bologna principles

Bologna principle	Y/N	Comments
1. Comparable degrees / Diploma Supplement	Yes	DS in English
2. Two main cycles (B and M) with entry and exit at B level	No	Integrated Master degree (B+ M), Not B and M
3. ECTS system of credits / links to LLL	Partially	CPD, conducted by the Order is compulsory and amounts to 24 hours / year. It is mandatory for license renewal (every 5 years). CPD activities are converted into CPD credits (Créditos de Desenvolvimento Profissional) but not into ECTSs.
4. Obstacles to mobility	Yes	Language
5. European QA	Yes	The Portuguese Pharmaceutical Order accredits national pharmacy degrees every 6 years. The University of Lisbon is accredited by EUA.
6. European dimension	Yes	Cooperation with other European Universities at PhD studies level.

ERASMUS staff exchange to your HEI from elsewhere	2005 to 2010 Number of staff x days: 30	6 staff x 5 days
ERASMUS staff exchange from your HEI to other HEIs	2005 to 2010 Number of staff x days: 15	3 staff*5 days
ERASMUS student exchange to your HEI from elsewhere	2005 to 2010 Number of student x months: 561	4 students x 9 consecutive months 175 students x 3months 4 students x 6 months 21 students x 9 alternate months
ERASMUS student exchange from your HEI to other HEIs	2005 to 2010 Number of student x months: 728	13 student x 3 months 2 students x 4 months 20 students x 6 months 58 students x 9 months

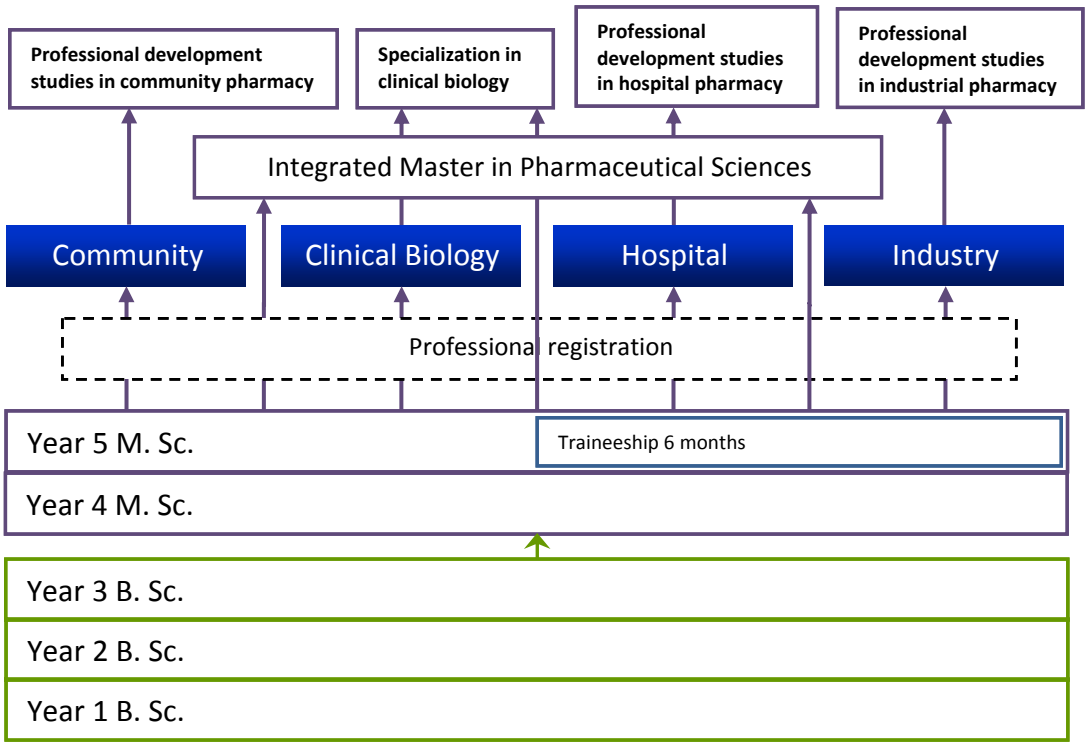
References	
University of Lisbon document	University of Lisbon Deliberation n. 1096/2008 from D.R. n. 72 of 11.04.2008

Chapter 6. Impact of EC directive 2005/36/EC

The directive states	How does this directive statement affect pharmacy E&T?
"Evidence of formal qualifications as a pharmacist shall attest to training of at least <u>five years' duration,</u>…"	Full compliance with directive Four and a half years of full time theoretical and practical training
"…<u>four years of full-time theoretical and practical training</u> at a university or at a higher institute of a level recognised as equivalent, or under the supervision of a university;"	Full compliance with directive
"…<u>six-month traineeship in a pharmacy</u> which is open to the public or in a hospital, under the supervision of that hospital's pharmaceutical department."	Full compliance with directive Six months traineeship in a pharmacy. Six months traineeship in pharmacy sites that were legally validated by the Order and INFARMED, while FFUL validates pedagogical suitability.
"The balance between theoretical and practical training shall, in respect of each subject, give <u>sufficient importance to theory to maintain the university character of the training</u>."	Full compliance with directive
Directive annex	
V.6. PHARMACIST **5.6.1. *Course of training for pharmacists*** **Plant and animal biology / Physics / General and inorganic chemistry / Organic chemistry / Analytical chemistry / Pharmaceutical chemistry, including analysis of medicinal products / General and applied biochemistry (medical) / Anatomy and physiology; medical terminology / Microbiology / Pharmacology and pharmacotherapy / Pharmaceutical technology / Toxicology / Pharmacognosy / Legislation and, where appropriate, professional ethics.**	Full compliance with directive

References	
University of Lisbon document	University of Lisbon Deliberation n. 1096/2008 from D.R. n. 72 of 11.04.2008

The Portuguese system of pharmacy education and training.



PHARMINE
Coordinator: Bart Rombaut, School of Pharmacy, Vrije Universiteit Brussel, Brussels, Belgium. brombaut@vub.ac.be
Executive Director: Jeff Atkinson, Pharmacolor Consultants Nancy, Villers, France. jeffrey.atkinson@orange.fr

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Website: www.pharmine.org