

Pharmacy education & training in

SPAIN

2011

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 or 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](#))

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Summary.

The pharmacy student population of Spain is over 20000 people and has a large foreign element (44%) with 16% of students coming from EU member states and 28% from other countries.

Pharmacy is a 5 year seamless degree course with a minimum of 6 months traineeship. There is the opportunity to start traineeship in the 3rd year but the main traineeship period is in the 5th and final year.

Courses for hospital and industrial pharmacy are available.

Teaching is mainly by lectures and traineeship. The 3 main subject areas are medical sciences (750 hours), chemical sciences (640 hours) and biological sciences (540 hours). There is a total of 300 hours devoted to pharmaceutical sciences.

A HEI diploma is the only requirement for registration as a qualified pharmacist.

Introduction.

Statistics for Spain.

Total population: 43,887,000

Gross national income per capita (PPP international \$): 28,200

Life expectancy at birth m/f (years): 78/84

Healthy life expectancy at birth m/f (years, 2003): 70/75

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): 105/44

Total expenditure on health per capita (Intl \$, 2006): 2,388

Total expenditure on health as % of GDP (2006): 8.1

Detailed information is available at: World Health Statistics 2009:

<http://www.who.int/countries/esp/en/>

Highlights on health in Spain.

The public sector in Spain is mostly involved in regulation and funding, whereas the manufacture and distribution (i.e. by manufacturers, importers, wholesalers and pharmacies) of pharmaceuticals are in the hands of private bodies.

Health authorities: at both national and autonomous community level, health authorities take on a range of regulatory responsibilities. A series of strict regulations govern the licensing of pharmaceuticals and market access. Governmental authority over pharmaceuticals can be divided into three levels (central state, autonomous community and regional health services) with the relevant health authority taking charge at the appropriate level.

The state: as a central actor, the state regulates and authorizes clinical trials; issues marketing authorizations for pharmaceuticals; controls the advertising of drugs and health care products directed towards the general population; licenses pharmaceutical laboratories; regulates the quality and manufacture of pharmaceutical products; fixes the price of drugs; sets co-payments; and decides on the inclusion or exclusion of pharmaceuticals on the list of publicly financed medicines. The Pharmaceuticals Act of 1990 forms the basis of pharmaceutical policy in Spain and most legislation regulating the pharmaceutical market has been updated since then in line with the act's requirements. The creation of the National Medicines Agency in 1997 and its effective implementation in 1999 have promoted the diffusion and implementation of guidelines and protocols. Whereas safety, efficacy and effectiveness are well established as criteria, the use of cost-effectiveness criteria is much more restricted. There has also been some discussion on the potential decentralization of budget management to primary health care centres, with any savings made reverting back to the centres, thus creating incentives to reduce costs. However, these policy proposals are still in initial pilot stages. In addition, programmes on the rational use of medicines have been introduced,

including drug therapy guides, treatment protocols and prescription profile analyses. The autonomous communities are in charge of implementing such policies at regional level through regional laws and decrees, thus creating the practical regulatory framework. The regional health services pay the balance of drug costs by reimbursing pharmacies through their professional colleges on a monthly basis (professional colleges are also in charge of computerizing prescriptions).

Patients : only over-the-counter drugs are not covered as part of the public system. Pensioners, people with permanent disabilities and special groups (e.g. AIDS patients) have full access to the subsidized pharmaceuticals of the public system and are fully exempted from pharmaceutical co-payments, whereas the rest of the public has a 40% co-payment for drugs.

Full text available at:

<http://www.euro.who.int/Document/E89491.pdf>

For further information, see:

Pharmaceutical Pricing and Reimbursement Information (PPRI) – New PPRI analysis including Spain, Pharmaceuticals Policy and Law 11 (2009) 213–234 213

http://ppri.oebig.at/Downloads/Publications/Article_PPRI_Spain_PharmaceuticalPolicyAndLaw_2009.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 – Spain, at :

http://eacea.ec.europa.eu/education/eurydice/documents/eurybase/national_summary_sheets/047_ES_EN.pdf

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

	Number or %	Comments.
Community Pharmacy		
Community pharmacists	48,000	www.portalfarma.com The statistical data corresponds to 2008
Community pharmacies	21,057	www.portalfarma.com The statistical data corresponds to 2008 900 inhabitants / pharmacy 2.3 pharmacists / pharmacy
Competences and role of the community pharmacist		<p>According to:</p> <ul style="list-style-type: none"> • EC directive EC 2005/36/EC acknowledging professional qualifications. • Law on Governing of Health Care Professions: <i>“the activities aimed at the production, preservation and dispensing of medicines, as well as the cooperation in the analytical and pharmaco-therapeutic processes and surveillance of public health correspond to Graduates in Pharmacy”.</i> • Law 16/97 on the regulation of the community pharmacies services. Article 1. Definition and functions of the community pharmacies: <i>“Under the terms shown in the General Health Care Law 14/1986, of the 25th of April and the Law 25/1990, of the 20th of December on Medicines, the community pharmacies are private health care establishments of public interest, subject to the health care planning set forth by the Autonomous Communities, in which the graduate-owner pharmacist of them, aided, if such is the case, by assistants or auxiliary workers, must provide the following basic services to the population:</i> <ol style="list-style-type: none"> 1. <i>The acquisition, custody, preservation and dispensing of medicines and health care products.</i> 2. <i>The monitoring, control and custody of the prescriptions for the dispensed medicines.</i> 3. <i>The guarantee of pharmacist attention, in the pharmacist’s area, to the villages where there are no community pharmacies.</i> 4. <i>The preparation of magistral formulae and special preparations, in the cases and according to the procedures and controls established.</i> 5. <i>The information and monitoring of the pharmacological treatments to patients.</i> 6. <i>The cooperation in the control of the individualised use of the medicines, in order to detect the adverse reactions that could occur and notify the organisms in charge of pharmacovigilance of these reactions.</i> 7. <i>Cooperation on the programmes promoted by the Health Care Administrations on quality guarantee of pharmacist assistance and health care attention in general, promotion and protection of health, disease prevention and health care education.</i> 8. <i>The cooperation with the Health Care Administration in the training and information aimed at other health care professionals and users about the rational use of medicines and health care products.</i> 9. <i>The coordinated action with the care structures from the Health Services in the Autonomous Communities.</i> 10. <i>The cooperation in the education to obtain the qualification of Degree</i>

in Pharmacy, in accordance with that set forth in the Community Directives and in the State Regulations and University rules which establish the corresponding study plans in each of them.”

- Law 29/2006 on guarantees and rational use of medicines chapter IV On rational use of medicines in community pharmacies Article 84. Community pharmacies.
1. *“In the community pharmacies, the pharmacists, as the people responsible for dispensing medicines to citizens, will ensure the fulfilment of guidelines established by the doctor in charge of the patient on the prescription and cooperate with him in the monitoring of the treatment through the pharmaceutical care procedures, contributing to ensure their efficiency and safety. Likewise, they will take part in the performance of all the activities aimed at the rational use of the medicines, particularly through the informed dispensing to the patient.*
 2. *The Health Care Administrations will perform the arrangement of the community pharmacies, taking the following criteria into account:*
 - a. *General planning of the community pharmacies in order to guarantee correct pharmaceutical care.*
 - b. *The presence and professional action of the pharmacist as an unavoidable requirement and condition for the dispensing of medicines to the public, taking into account the number of pharmacists necessary in terms of the pharmacy’s activity.*
 - c. *The minimum material, technical and resources requirements, including accessibility for disabled people, established by the Government as basic to ensure the providing of a correct health care assistance, without detriment to the competences that the Autonomous Communities have attributed to them on this subject.*
 3. *The community pharmacies are obliged to dispense the medicines that are demanded of them, both by private individuals and by the National Health System under the established regulation conditions.*
 4. *Due to reasons for emergency and distance of the community pharmacy or other special circumstances that occur, in certain establishments, exceptionally, the creation of first aid posts may be authorised under the conditions that are determined by the regulations with a basic nature, without detriment to the competences that the Autonomous Communities have attributed to them on this subject.*
 5. *The Public Administrations will watch over the continuous training of the pharmacists and the appropriate qualification and training of the auxiliaries and technical pharmacy assistants.*
 6. *The community pharmacies have the consideration of private health care establishments of public interest.”*
- Order CIN/2137/2008 by which the requirements for the verification of the official university diplomas that qualify people for practicing the pharmacist profession are established.

Ownership of the	Yes	• The General Law on Health Care Art. 103 point 4. Only pharmacists may be
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community pharmacies limited to pharmacists		<p>owners and deed-holders of community pharmacies open to the public.</p> <ul style="list-style-type: none"> • Law 16/97 on Regulation of the community pharmacy services Art.4. - The community pharmacies may only be transferred to other pharmacists.
Rules regulating the geographical distribution of the pharmacies	Yes	<ul style="list-style-type: none"> • Law 16/97 on Regulation of the community pharmacy services Art.2. <i>“The planning of community pharmacies will be established taking into account the demographic density, geographical characteristics and dispersion of the population, with a view to guaranteeing the accessibility and quality in the service and the sufficiency in the supply of medicines, according to health care requirements in each territory. The territorial arrangement of these establishments will be performed by modules of population and distances between community pharmacies, which will be determined by the Autonomous Communities, in accordance with the abovementioned general criteria. In all cases, the territorial arrangement regulations must guarantee the appropriate pharmaceutical assistance to the entire population.”</i> • Law 29/2006 on guarantees and rational use of medicines Art. 84 point 2 <i>“The Health Care Administrations will perform the arrangement of the community pharmacies, taking into account the following criteria:</i> <ul style="list-style-type: none"> - <i>General planning of the community pharmacies in order to guarantee the correct pharmaceutical assistance.</i> - <i>The presence and professional action of the pharmacist as action of the pharmacist as an unavoidable requirement and condition for the dispensing of medicines to the public, taking into account the number of pharmacists necessary in terms of the pharmacy’s activity.</i> - <i>The minimum material, technical and resources requirements, including accessibility for disabled people, established by the Government as basic to ensure the providing of a correct health care assistance, without detriment to the competences that the Autonomous Communities have attributed to them on this subject.</i> 3. <i>The community pharmacies are obliged to dispense the medicines that are demanded of them, both by private individuals and by the National Health System under the established regulation conditions.</i> 4. <i>Due to reasons for emergency and distance of the community pharmacy or other special circumstances that occur, in certain establishments, exceptionally, the creation of first aid posts may be authorised under the conditions that are determined by the regulations with a basic nature, without detriment to the competences that the Autonomous Communities have attributed to them on this subject.</i> 5. <i>The Public Administrations will watch over the continuous training of the pharmacists and the appropriate qualification and training of the auxiliaries and technical pharmacy assistants.</i> 6. <i>The community pharmacies have the consideration of private health care establishments of public interest.”</i> • Laws on Pharmacy Arrangement in the different Autonomous Communities (17) that configure the territory of the Spanish State. The modules of population and the distances between the community pharmacies vary in each Autonomous Community.
Medicines and health care	No	<ul style="list-style-type: none"> • Law 29/2006 on guarantees and rational use of medicines. Stated purpose: <i>“Amongst the most important modifications some new ones are incorporated</i>

products available to the general public through other channels		<i>such as selling medicines subject to medical prescription over the Internet, leaving the door open for the acquisition of publicity medicines over the Internet, but always with a real pharmacy behind the operation. This is pending legislation development.” Art. 111. - 11. “Selling medicines or health care products with home delivery or over the Internet or using other teleprocessing or indirect means, against that set forth in this Law.”</i>
People other than pharmacists involved in the practice	Yes	In addition to the pharmacist owners of the community pharmacy, deputies, substitutes or managers, there will be other staff who are not pharmacy graduates. Pharmacy technicians and auxiliary workers.
Qualification and number		Medium Grade vocational training cycle Cualificación profesional: FARMACIA, Nivel:2 (of 5), Code: SAN123_2 (https://www.educacion.es/iceextranet/bdqCualificacionesAction.do)
Organisation providing and validating the education and training		<ul style="list-style-type: none"> • Royal Decree 1689/2007, of the 14th of December, by which the qualification of Technician in Pharmacy and Parapharmacy is established and the minimum education level for this are fixed. • Order EDU/2184/2009, of the 3rd of July, by which the curriculum of the Medium Grade vocational training cycle corresponding to the qualification of Technician in Pharmacy and Parapharmacy is established. <p>Ministry of Education. www.educacion.es</p>
Length of the courses (years)		2 years (2,000 hours) www.educacion.es
Thematic areas		<p>ROYAL DECREE 1689/2007, of the 14th of December, by which the qualification of Technician in Pharmacy and Parapharmacy is established and the minimum education level for this are fixed (Chapter III – Art. 10):</p> <ul style="list-style-type: none"> • The professional modules for this vocational training cycle are: <ul style="list-style-type: none"> ○ Layout and sale of products. ○ Community pharmacy. ○ Dispensing of pharmaceutical products. ○ Dispensing of parapharmaceutical products. ○ Basic laboratory operations. ○ Magistral formulae. ○ Health promotion. ○ First Aid. ○ Basic anatomy, physiology and pathology. ○ Work training and orientation. ○ Enterprise and enterprising initiative. ○ Training in work centres. <p>www.educacion.es</p>
Competences and role		<p>ROYAL DECREE 1689/2007, of the 14th of December, by which the qualification of Technician in Pharmacy and Parapharmacy is established and the minimum education level for this are fixed (Chapter II):</p> <p>This professional will be able to:</p> <ul style="list-style-type: none"> ○ Assist in the dispensing of pharmaceutical products, informing of their characteristics to the users. ○ Assist in the preparation of pharmaceutical and parapharmaceutical products.

		<ul style="list-style-type: none"> ○ Prepare the pharmaceutical products for their distribution to the different hospital units, under medical supervision. ○ Obtain values from somatometric parameters for the user's vital signs. ○ Perform analytical controls. ○ Maintain the material, instruments, equipment and the work area in optimum conditions for their use. ○ Promote healthy living habits in the users to maintain or improve their health and prevent illness. ○ Process the invoicing of prescriptions handling computing applications. <p>www.educacion.es</p>
Hospital Pharmacy		
Hospital pharmacists	1612	www.portalfarma.com
Hospital pharmacies	288	5.59 pharmacists/hospital
Competences and roles of the hospital pharmacists		<ul style="list-style-type: none"> • Article 82. Support structures for the rational use of medicines in hospitals. <ul style="list-style-type: none"> 1. <i>Without detriment to the responsibility that all the health care professionals have in the rational use of medicines, hospitals must have available hospital pharmacy services or units in accordance with the minimum conditions established by this Law. The highest level hospitals and those others that are determined must have Clinical Pharmacology services or units.</i> 2. <i>To contribute to the rational use of medicines, the hospital pharmacy units or services will perform the following functions:</i> <ul style="list-style-type: none"> a. <i>Guarantee and assume the technical responsibility for the acquisition, quality, correct preservation, cover of requirements, custody, preparation of magistral formulae or special pharmacy preparations and dispensing of the medicines necessary for the intra-hospital activities and the other activities, for outpatient treatments that require a particular surveillance, supervision and control.</i> b. <i>Establish an efficient and safe medicine distribution system, taking steps to guarantee the correct administration, taking care of and dispensing the products in clinical research phases and ensuring the fulfilment of the legislation on medicines containing psychoactive substances or any other medicine that requires special control.</i> c. <i>Form part of the hospital committees in which their knowledge might be useful for the selection and scientific evaluation of the medicines and their use.</i> d. <i>Establish a medicine information service for all the hospital staff, an intra-hospital pharmacovigilance system, systematic studies of medicine use and clinical pharmacokinetic activities.</i> e. <i>Perform educational activities on questions within their competence aimed at health care personnel from the hospital and at patients.</i> f. <i>Carry out their own research work or cooperate with other units or services and participate in clinical trials with medicines.</i>

- g. Cooperate with the primary and specialised attention structures in the area in the development of the functions stated in article 81.
- h. Perform as many functions as may lead to a better use and control of the medicines.
- i. Participate and coordinate the management of the purchases of medicines and health care products for the hospital in order to ensure its efficiency.

3. The functions defined in the paragraphs from c) to h) of the previous section will be developed in coordination with clinical pharmacology and other clinical units and services in the hospital.”-

Article 83. Hospital pharmacy.

1. The hospital pharmacy services will be under the ownership and responsibility of a pharmacist who is a specialist in hospital pharmacy.
2. The Health Care Administrations with competences in pharmaceutical arrangement will perform this function in the hospital pharmacy maintaining the following criteria:
 - a. Fix requirements for its smooth running, in accordance with the established functions.
 - b. Whereby the actions are provided with the presence and professional action of the pharmacist or pharmacists necessary for correct assistance.
 - c. The pharmacists from the hospital pharmacies must have studied the courses in the corresponding speciality.
3. The hospitals that do not have pharmacy services, must request the Autonomous Communities for authorisation, if applicable, to maintain a store of medicines under the supervision and control of a pharmacist. The conditions, requirements and regulations for the operation of these stores will be determined by the competent health care authority.”

The laws of the autonomous communities also have their own regulation over the service that the pharmacists provide in each Autonomous Community.

Pharmaceutical Industries and related areas		
Production, R+D and distribution	298	35,812 employes (2002) 2,4% European Union
Number of companies that only produce	259	Farmaindustria http://www.farmaindustria.es In English: http://www.farmaindustria.es/Farma_Public_ING/index.htm
Number of companies that only distribute	39	The association for pharmaceutical distribution, FEDIFAR, has no Web site. Other web sites for distributors: <ul style="list-style-type: none"> • SOCIEDAD COOPERATIVA FARMACÉUTICA ESPAÑOLA D.S.: C/ Santa Engracia, nº 31 28010 MADRID. www.cofares.es • Asociación de cooperativas farmacéuticas. www.acofarma.com. In English: http://www.acofarma.com/portal/component?option=com_frontpage/Itemid,101/
Number of companies	177	Asociación Española de Medicamentos Genéricos Paseo de la Castellana, 173 4º izda. 28046 - Madrid

manufacturing generic products		AESEG www.aeseg.es
Industrial Pharmacy		
Pharmacists working in industry	11996	Of the 11996 pharmacists working in industry 1505 are registered with the chamber. - www.portalfarma.com -Asociación española de farmaceuticos de la industria http://www.aefi.org/ -Sociedad española de Farmacia Industrial y Galénica http://www.sefig.org/
Other sectors		
Sectors		The distribution of pharmacists by sector/activity is: <ul style="list-style-type: none"> • Community pharmacy (69%) • Dermopharmacy (15%) • Nutrition (12%) • Orthopedics (11%) • Clinical Analysis (5%) • Hospital Pharmacy (3%) • Industry (2%) • Administration and Public Health (2%) • Optics and Acoustics (1%) • Distribution (1%) • Education and Research (1%) • Other activities (6%).
Role of the professional associations		
Registration of pharmacists	Yes	To be able to practice their pharmacist activities, all the community pharmacists must be registered with their appropriate provincial professional association in each of the 17 autonomous communities. This is part of the national body, the General Council of Official Colleges of Pharmacists. The associations are also grouped in Regional Councils. www.portalfarma.com The <u>only</u> requirement for registration is the holding of a <u>qualification in pharmacy from an HEI</u> (there are no requirements as to preliminary time in practice, good conduct statement, language, nationality or obligation of residence). There are no obstacles for pharmacists from the EU.
Creation of community pharmacies and control of the territorial distribution	Yes	Each of the 17 Autonomous Communities and the 2 Autonomous Cities holds the competency. Territorial arrangement and modules of population criteria are applied.
Ethical aspects of professional conduct	Yes	The Pharmaceutical Corporation is in charge of ensuring the ethical and professional conduct of the practicing pharmacists.
Guarantee of quality and validation of the HEI courses for pharmacists	Yes	The National Agency for Evaluation of Quality and Accreditation (ANECA) is a state foundation that is aimed at contributing to the improvement in the further education system by way of the evaluation, certification and accreditation of teaching, teachers and institutions. There are recognized agencies in many autonomic communities with work in collaboration with the national ANECA. Both national and autonomic agencies

	are recognized by the European agency ENQA Agencia nacional de evaluación de la calidad y acreditación ANECA http://www.aneca.es/ In English: http://www.aneca.es/en.aspx
Other roles	The 3 specific activities for pharmacists are <ol style="list-style-type: none"> 1. the community pharmacy 2. the hospital pharmacy and 3. the management of distribution warehouses, as well as positions in certain public administration organisations (national body of pharmacists, national health system inspectors, primary assistance pharmacists or military pharmacists) and clinical chemists and biochemists. Other openings for pharmacists are technical management, quality control and manufacturing techniques, technical information on medicines, pharmacology, business management, scientific documentation and specialists in dermo-pharmacy and alimentation.

Websites and legislation	
General Spanish Council of Pharmacists Pharmaceutical Associations <i>Portalfarma</i>	Consejo General de Colegios Oficiales de Farmacéuticos C/ Villanueva, 11. Madrid 28001 Tel: +34 91 431 25 60 Fax: +34 91 432 81 00 e mail: congral@redfarma.org www.portalfarma.com http://www.portalfarma.com/Home.nsf/Home?OpenForm English: http://www.portalfarma.com/home.nsf/cmPortallngles?OpenFrameset
RD 109/2010, of the 5th of February 2010	It modifies different Royal Decrees on the subject of health care for their adaptation to the Law 17/2009, of the 23rd of November, on free access to the service activities and their practice and the Law 25/2009, of the 22nd of December, of modification of several laws for their adaptation to the Law on free access to the service activities their practice; and it also modifies the first section of the Third Transitory Provision of the RD 183/2008.
Order CIN/2137/2008, of the 3rd of July 2008	It establishes the requirements for verifying the official certificates that qualify people to practice the pharmacist profession.
RD 183/2008, of the 8th of February 2008	By which the Health Science specialities are determined and classified and certain aspects of the specialised health care training system are developed. (State Gazette No. 45, of 21-2-08).
Law 29/2006, of the 2nd of July 2006 Modified by: <ul style="list-style-type: none"> • Law 51/2007, of the 26th of December • Law 25/2009, of the 22nd of December • Law 28/2009, of the 30th of December and • the Royal Decree-Law 4/2010, of the 26th of March 	on guarantees and rational use of medicines and health care products.
<i>Ley 44/2003 (21 nov 2003) de ordenación de las</i>	http://noticias.juridicas.com/base_datos/Admin/l44-

<i>profesiones sanitarias</i> on Arrangement of the Health Care Professions	2003.html
Royal Decree 1464/1990, of 26th October, 1990	establishes the official university title of Licenciado en Farmacia (Master of Pharmacy) and the general guidelines relating to the study programmes leading to it.
Royal Decree 2708/1982, of 15th October, 1982	governs the studies for specialisations and the awarding of the title of pharmacy specialist
Royal Decree 1667/89, of 22nd December 1989	governs the acknowledgement of diplomas, certificates and other pharmacy qualifications from the other European Union member states

Chapter 2. Pharmacy HEIs, students and courses

	Y/N, number	If you wish to expand your answer, please add your comments below.
HEIs in Spain	19	
Public	13	<ol style="list-style-type: none"> 1. University of the Basque Country http://www.vc.ehu.es/ 2. University of Alcalá http://www.uah.es/ 3. University of Barcelona http://www.ub.es/ 4. University of Santiago de Compostela http://www.usc.es 5. University of Granada http://www.ugr.es/~genfarma 6. Madrid Complutense University http://www.ucm.es/info/farmacia/ 7. University of Salamanca http://w3.usal.es/ 8. University of la Laguna http://www.ull.es/ 9. University of Valencia http://www.uv.es/~uvalen/cat/ 10. University of Seville http://www.us.es 11. Miguel Hernández University (http://www.umh.es/) 12. University of Murcia (http://www.um.es/) 13. University of Casitlla La Mancha (http://www.uclm.es/)
Private	6	<ol style="list-style-type: none"> 1. University of Navarra (Pamplona) http://unav.es/farmacia/ 2. University San Pablo CEU (Madrid) http://www.ceu.es 3. University Alfonso X El Sabio (Madrid) http://www.uax.es/uax/que-estudiar/licenciaturas-ingenierias/ccs0/far0 4. University Cardenal Herrera CEU (Valencia) http://www.uch.ceu.es/principal/titulaciones/tablon.asp?cod_carrera=farmacia&menusuperior= 5. University San Jorge (Zaragoza) http://www.usj.es/sitio/programas/grados/farmacia/ 6. European University of Madrid (http://www.uem.es/)
Organisation of HEIs		
Independent faculties	Yes	
Do HEIs offer B + M degrees?	Yes	Pharmacy degrees (<i>licenciatura en farmacia</i>) are <u>seamless, fully integrated B+M degrees over 5 years</u> , equivalent to, but no official master's degree is given. Currently all Faculties are in the process of recognition of the master's degree. leading to the equivalent of a Master degree.
Spain		
Teaching staff		
Teaching staff (nationals)	1,835	
International teaching staff (from EU)	23	
Number of international teaching staff (non EU)	7	
Professionals from outside the HEIs	1,700	
Students		
Places at entry following secondary school	3,168	There is no <i>numerus clausus</i> and almost as many places as there are candidates.
Number of applicants	4,000	1.3 applicants / place

for entry				
Graduates that become registered pharmacists.	2,600	82%		
International students (from EU)	500	16%		
International students (non EU)	900	28% Total foreign: 44%		
Entry requirements following secondary school				
Specific pharmacy-related, national entrance examination	No			
Other form of entry requirement at a national level	Yes			
Is there a national <i>numerus clausus</i> ?	No			
Fees per year (€)				
Public Universities	700-1000			
Private Universities	7000-9000			
Length of course	5 years			
Specialization				
Do HEIs provide specialized courses?	Yes	<p><i>FIR or farmacéutico interno-residente, pharmacist intern-resident</i>) following an examination like medical specialties.</p> <p>These specialties are:</p> <ul style="list-style-type: none"> • Those requiring hospital internship <ul style="list-style-type: none"> ○ Hospital pharmacist ○ Clinical microbiology and parasitology ○ Clinical biochemistry ○ Clinical immunology ○ Clinical analysis • Those not requiring hospital internship <ul style="list-style-type: none"> ○ Radio-pharmacy ○ Drug and medicines' control and analysis ○ Industrial and Galenic PharmacyExperimental Pharmacology ○ Industrial Microbiology ○ Nutrition and Dietetics ○ Public Health ○ Food and HigyenictTechnology ○ Analytical and Experimental Toxicology) <p>Courses for <u>industrial pharmacy specialisation</u>:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 5px;"> Summer Course: FARMACOVIGILANCIA, aspectos teóricos y prácticos FARMACOVIGILANCE, practical and theoretical aspects Curso de Orientación Profesional en la Industria Professional Orientation Course in Pharmaceutical and other related Industries for the Faculties of Pharmacy </td> <td style="width: 30%; text-align: center; vertical-align: middle; padding: 5px;"> Universidad de Alcalá </td> </tr> </table>	Summer Course: FARMACOVIGILANCIA, aspectos teóricos y prácticos FARMACOVIGILANCE, practical and theoretical aspects Curso de Orientación Profesional en la Industria Professional Orientation Course in Pharmaceutical and other related Industries for the Faculties of Pharmacy	Universidad de Alcalá
Summer Course: FARMACOVIGILANCIA, aspectos teóricos y prácticos FARMACOVIGILANCE, practical and theoretical aspects Curso de Orientación Profesional en la Industria Professional Orientation Course in Pharmaceutical and other related Industries for the Faculties of Pharmacy	Universidad de Alcalá			

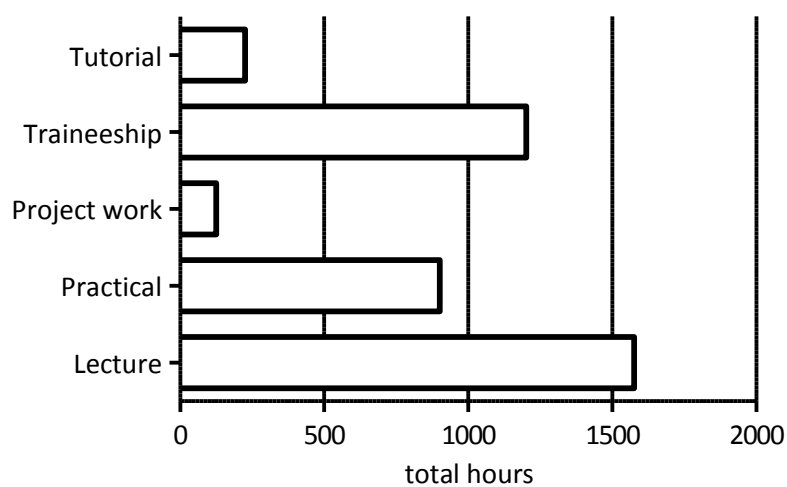
		MASTER on Gestión y Producción en la Industria Farmacéutica Master's degree in Management and Production in Pharmaceutical Industry	Universidad de Salamanca	
		Curso de Orientación Profesional en la Industria Professional Orientation Course in Pharmaceutical and other related Industries for the Faculties of Pharmacy	Universidad Complutense	
		Curso de Orientación Profesional en la Industria Professional Orientation Course in Pharmaceutical and other related Industries for the Faculties of Pharmacy Título de Farmacéutico Especialista Pharmaceutical Specialist Degree	Universidad San Pablo CEU	
		MASTER de Gestión de la Industria Farmacéutica Master's degree in Management in Pharmaceutical Industry	CESIF	
		Validaciones de Limpieza Cleaning Validation	AEFI	
		Gestión de Riesgos en relación con la cadena del frío Cold chain risk management		
		Perspectiva europea del sector de los Complementos Alimenticios European Perspective of Food Complements		
		1ª Jornada sobre Garantía de calidad en la fabricación de Productos Cosméticos 1st Conference on Manufacturing and Quality Assurance of Cosmetics		
		El control sanitario en el comercio exterior de productos farmacéuticos Medicines Foreign Trade Health Control		
		Taller de aguas Water Workshop		
		Primer Curso de casos prácticos de precios y financiación de medicamentos 1st Course on practical cases in medicines price and reimbursement		
		Curso práctico de NEES Practical Course on NEES		
		Primer curso de casos prácticos de directrices de calidad y de farmacopea 1st Practical Course on Quality and Pharmacopeia Guidelines		
		Segundo curso teórico-práctico en Farmacovigilancia 2nd Theoretical-Practical Course in Pharmacovigilance		
		<p>Centro de Estudios superiores de la industria farmacéutica Post-graduate studies in Pharmaceutical Industry Center</p> <p>CESIF: http://www.cesif.es/</p> <p>Other courses:</p> <ul style="list-style-type: none"> • MIFPMáster en Industria Farmacéutica y Parafarmacéutica Master's Degree in Pharmaceutical and Parapharmaceutical Industry • MTCAMáster en Tecnología Control y Seguridad Alimentaria Master's Degree in Control and Food Assurance Technology 		

		<ul style="list-style-type: none"> • MCDFMáster en Cosmética y Dermofarmacia Master’s Degree in Cosmetics and Dermopharmacy • MTGQMáster en Tecnología y Gestión de la Industria Química Master’s Degree in Technology and Management in Chemical Industry • MDMFMáster en Dirección Comercial y Márketing de Industrias Farmacéuticas y Afines Master’s Degree in Trade Management and Marketing of Pharmaceutical Industries and other Industries related • MDMAMáster en Dirección Comercial y Márketing de Industrias Alimentarias Master’s Degree in Trade Management and Marketing of Food Industries • MBTSMáster en Biotecnología de la Salud Master’s Degree in Health and Biotechnology <p>AEFI Asociación Española de Farmacéuticos de la Industria Spanish Association of Pharmacists in Industry. http://www.aefi.org/</p> <p>The General Council of Pharmacists also provides courses for Industrial pharmacy specialisation within their National Plan of Continuous Professional Training: <i>El medicamento y la industria farmacéutica: del diseño molecular a la farmacia</i> The medicine and the Pharmaceutical industry: from molecular design to the pharmacy (2009-2011)</p>
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Chapter 3. Teaching and learning methods

Student hours						
Method	Year 1	Year 2	Year 3	Year 4	Year 5	Total
HEIs courses						
Lecture	350	350	350	350	175	1575
Tutorial	50	50	50	50	25	225
Practical	200	200	200	200	100	900
Project work					125	125
Traineeship						
Hospital					450	450
Community					450	450
Industrial or academic			100 (optional)	100 (optional)	100 (optional)	300
Electives						
Optional				75	75	150
Total	600	600	700	775	1500	4175

Student hours by learning method.



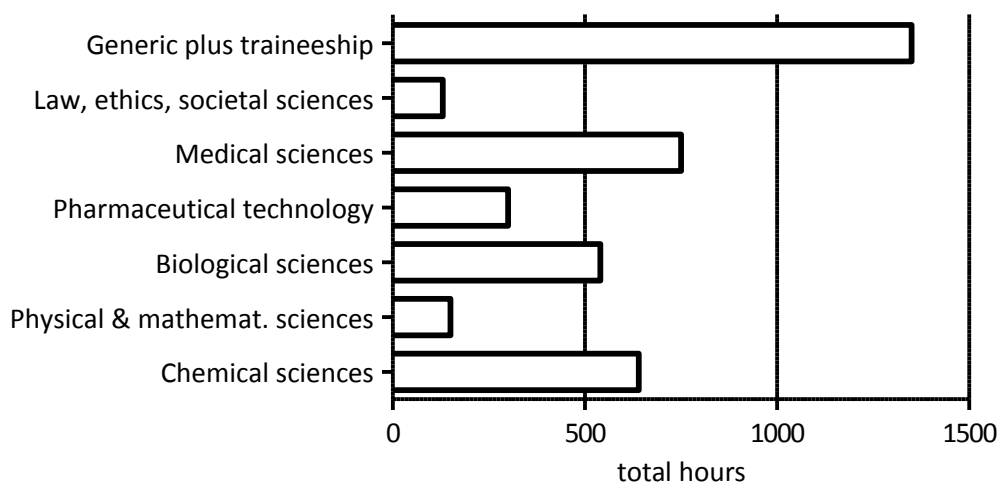
References	
Texts and articles of national law	LEY DEL MEDICAMENTO. RD 1393/2007. ORDEN CIN/2137/2008

Chapter 4. Subject areas

Student hours

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
CHEMSCI	300	200	100	40		640
PHYSMATH	60	90				150
BIOLSCI	100	140	120	120	60	540
PHARMTECH			120	120	60	300
MEDISCI	40	140	240	240	90	750
LAWSOC				60	90	150
GENERIC	100	50	20	20		190
GENERIC plus TRAINEESHIP			100	160	1090	1350
Total	600	620	700	760	1390	4070

Student hours by subject area.



Chapter 5. Impact of the Bologna principles

Bologna principle	Y/N	Comments.
1. Comparable degrees / Diploma Supplement	Yes	<p>Spanish degrees are similar in all institutions. They all follow European directives 2005/36 CE (1). Spanish legislation established the duration as a minimum of 3000 of contact hours. They have a core common contents between 50-75% of the study plan (2). All studies are recognized between institutions on the basis of full recognition of equivalent disciplines (>75% subjects in common) or group of disciplines (e.g. all disciplines of the first cycle), otherwise credits are recognized (3). In the case of foreign degrees a homologation process is established (4). By 2010 all degrees change to plans based on ECTS (5a, 5b). The process of change will last until 2015, although some institutions will ended by 2011.</p> <p>DS is delivered by half of the institutions since 2004 to the students that request it (6). There is a DS fee. DS is presented in Spanish and English.</p>
2. Two main cycles (B and M) <u>with entry and exit at B level</u>	No	<p>Current study plans Students are fully integrated degrees. Students that finished the first part of Pharmacy (2,5-3 years according to institutions) can follow some degrees such as Biochemistry, Food Science and Technology, etc. No entry at the second part of Pharmacy from other studies is allowed. From 2010 Pharmacy remains as a fully integrated degree with the consideration of Bachelor. Master's degrees are now offered as postgraduate courses of 1 and 2 years.</p>
3. ECTS system of credits / links to LLL	Yes	<p>Although ECTS and grades were defined in 2003 (7) only 2010 new study plans used then. Until now credits represent contact ours (10 contact our = 1 credit). From 2010 ECTS are mandatory to all degrees.</p> <p>LLL: There are programs in collaboration with the professional associations of pharmacists in some institutions.</p>
4. Obstacles to mobility	Yes	<p>1:Financial and language. 2. Diferences in the calendar and programs, specially those not organized in semesters.</p>
5. European QA	Yes	<p>Some institutions follow evaluation under national (Plan Nacional de Calidad de las Universidades) or regional plans (E.g.. Andalusia plan for Quality Assurance) of Quality. These plans follow the ENQA directives.</p> <p>All new plans after Bologna implementation follow QA with evaluation each six years. The evaluation is under the control of the Agencia Nacional de Evaluación y Acreditación (ANECA) or autonomic agencies.</p>
6. European dimension	Yes	<p>Most institutions have agreements for staff and students' mobility (see list below). European doctorates are starting but increasing quickly (in 2008:13 and in 2009:52)</p>

Countries and Universities with agreements for staff and students' mobility with Spanish Faculties:

Austria Wien

Belgium CATHOLIQUE DE LOUVAIN

Belgium GENT

Belgium Haute Ecole Charleroi Europe

Belgium LIÈGE

Bulgaria Medical University

Czech Republic Charles V University

Czech Republic PRAHA

Czech Republic Veterinary and Pharmaceutical Sciences Brno

Finland Kuopio

France AIX-MARSEILLE

France Bordeus II Victor Segalen

France Bourgogne.

France Caen Basse Normandie

France Claude Bernard Lyon I (Lyon); .

France Franche-Comté.

France François Rabelais de Tours

France Grenoble I Joseph Fourier

France HENRI POINCARÉ - NANCY

France Institut Superior de Ciència de Saúde-Nord

France JOSEPH FOURIER, GRENOBLE

France Lille II

France Lió Claude Bernard

France Llemotges

France Méditerranée

France Montpellier II-Sciences et Techniques du Languedoc (Montpellier)

France Montpellier I (Montpellier);

France Nantes

France PARIS XI

France Reims Xampanya-Ardenes

France René Descartes-ParisV

France Rennes

France Rouen Alta Normandia

France Tolosa Paul Sabatier

France Victor Segalen Bordeaux 2

France Dijon

France Strasbourg

France Lyon

France Poitiers

France Reims

France ANGERS

Germany Aachen University of Applied Sciences

Germany ALBERT-LUDWIGS-UNIVERSITÄT FREIBURG IM BREISGAU

Germany Bonn

Germany EBERHARD KARLS UNIVERSITÄT TÜBINGEN.

Germany Ernst-Moritz-Arndt Universität Greifswald

Germany FREIE UNIVERSITÄT BERLIN

Germany	Friederich-schiller Universität Jena
Germany	Julius Maximilians Universität Würzburg.
Germany	LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN.
Germany	MASARYKOVA UNIVERZITA.
Germany	Philipps-Universität Marburg
Germany	PHILIPPS-UNIVERSITÄT MARBURG.
Germany	Renana Friedrich Wilhelm de Bonn
Germany	Rheinische Friedrich-Wilhelms-Universität Bonn (Bonn); .
Germany	RUPRECHT-KARLS-UNIVERSITÄT HEIDELBERG
Germany	Technische Universität Carolo Wilhemina Zu Braunschweig (Braunschweig)
Germany	TECHNISCHE UNIVERSITÄT MÜNCHEN
Germany	UNIVERSITÄT REGENSBURG
Germany	Westfalia Wilhelm de Münster
Germany	Frankfurt (2)
Greece	Nacional i Kapodistriana d'Atenes
Greece	THESSALONIKI
Hungary	Budapest
Iceland	ICELAND
Ireland	NATIONAL UNIVERSITY OF IRELAND, CORK
Italy	Palermo (4)
Italy	Roma 01
Italy	Urbino
Italy	CHIETI
Italy	COSENZA
Italy	MILANO
Italy	"MAGNA GRAECIA" DI CATANZARO
Italy	BARI
Italy	Bologna
Italy	CAGLIARI
Italy	Calabria
Italy	Càller
Italy	Camerino
Italy	Catania
Italy	CATTOLICA DEL SACRO CUORE
Italy	FERRARA
Italy	Firenze
Italy	G. D'Annunzio-Chieti Pescara (Chieti);
Italy	Gènova
Italy	Messina
Italy	Modena e Reggio Emilia
Italy	NAPOLI
Italy	Napoli Federico II
Italy	Padova
Italy	Parma
Italy	Pavia
Italy	Perugia
Italy	PISA
Italy	POTENZA 01
Italy	ROMA "LA SAPIENZA"
Italy	ROMA 3
Italy	SALERNO

	Italy SASSARI Italy Siena Italy Torino; . Italy URBINO Malta MALTA Poland Akademia Medyczna we Wroclaw Portugal Coimbra Portugal dos Açores Portugal Lisboa Portugal Porto Portugal Beira Interior-Covilha Portugal Lusofona de Lisboa Portugal BRAGANCA Romania Medicina si Farmacie "Iuliu Hatieganu" Cluj-Napoca Slovenia LJUBLJANA Suisse Ginebra Sweden Uppsala Turkey Hacettepe Universitesi Turkey HATAY UK Aberdeen UK BRADFORD UK London-School of Pharmacy (London). UK King's College London UK HATFIEL 01 UkraineKIEL
ERASMUS staff exchange to your HEI from elsewhere	Staff months: No data available.
ERASMUS staff exchange from your HEI to other HEIs	Staff months: No data available.
ERASMUS student exchange to your HEI from elsewhere	Student months: 3147 (2009/10)
ERASMUS student exchange from your HEI to other HEIs	Student months: 6042 (2009/10)

References	
References to texts and articles of national law	SENECA / SICUE (for national mobility programme) ERASMUS (EU) http://farmacia.ugr.es/conti.php?sec=12&pag=9 http://farmacia.ugr.es/conti.php?sec=12&pag=10

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

The directive states	How does / will 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> ,...”	Spain complies
“... <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;”	Spain complies
“... <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.”	Spain complies
“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> .”	Spain complies
Directive annex	How does / will this directive annex affect pharmacy E&T?
V.6. PHARMACIST 5.6.1. <i>Course of training for pharmacists</i> 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.	Spain complies

Texts and articles of national law
1 DIRECTIVA 2005/36/CE DEL PARLAMENTO EUROPEO Y DEL CONSEJO, de 7 de septiembre de 2005
2 Real Decreto 27 de noviembre 1987, núm. 1497/1987 (Mº Educ. y Ciencia). UNIVERSIDADES. Directrices generales comunes de los planes de estudio de los títulos de carácter oficial y validez en todo el territorio nacional. (Modificado y actualizado conforme al R.D. 1267/1994 de 10 de junio, BOE 11 de junio, al R.D. 2347/1996 de 8 de noviembre de, BOE de 23 de noviembre, al R.D. 614/1997 de 25 de abril, BOE de 16 de mayo y al R.D. 779/1998 de 30 de abril, BOE de 1 de mayo).
3 REAL DECRETO 55/2005, de 21 de enero, por el que se establece la estructura de las enseñanzas universitarias y se regulan los estudios universitarios oficiales de Grado. BOE núm. 21: 2842-2846
4 ORDEN ECI/1519/2006, de 11 de mayo, por la que se establecen los criterios generales para la determinación y realización de los requisitos formativos complementarios previos a la homologación de títulos extranjeros de educación superior. BOE núm. 119: 19066-19068
5a REAL DECRETO 1393/2007, de 29 de octubre, por el que se establece la ordenación de las enseñanzas universitarias oficiales. BOE núm. 260:44037-44048
5b Real Decreto 861/2010, de 2 de julio, por el que se modifica el Real Decreto 1393/2007, de 29 de octubre, por el que se establece la ordenación de las enseñanzas universitarias oficiales.
6 REAL DECRETO 1044/2003, de 1 de agosto, por el que se establece el procedimiento para la expedición por las

universidades del Suplemento Europeo al Título. BOE núm. 218:33848-33853

7 REAL DECRETO 1125/2003, de 5 de septiembre, por el que se establece el sistema europeo de créditos y el sistema de calificaciones en las titulaciones universitarias de carácter oficial y validez en todo el territorio nacional. BOE núm. 224: 34355-34356

8 LEY 44/2003, de 21 de noviembre, de ordenación de las profesiones sanitarias. BOE núm. 280: 41442-41458

9 LEY ORGÁNICA 4/2007, de 12 de abril, por la que se modifica la Ley Orgánica 6/2001, de 21 de diciembre, de universidades. BOE núm. 89:16241-16260

CIN/2137/2008

<http://www.uco.es/organizacion/ees/documentos/nuevastitulaciones/reguladas/Farmaceutico%20-%20Competencias.pdf>

The information given in this enquiry corresponds to the average of the 18 public and private faculties of pharmacy in Spain. Information for a given faculty is to be found in the web pages of the faculties in question.



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PHARMINE

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