

Pharmacy education & training in

# ROMANIA

2012 – version 2



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: [http://enzu.pharmine.org/media/filebook/files/PHARMINE WP7 survey of European HEIs 0309.pdf](http://enzu.pharmine.org/media/filebook/files/PHARMINE_WP7_survey_of_European_HEIs_0309.pdf))

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*/digitally prescribed/*

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## Index

	Page
<b>Summary</b>	<b>7</b>
<b>Introduction</b>	<b>8</b>
<b>Chapter 1. Organization of the activities of pharmacists, professional bodies</b>	<b>10</b>
<b>Chapter 2. Pharmacy HEIs, students and courses</b>	<b>15</b>
<b>Chapter 3. Teaching and learning methods</b>	<b>20</b>
<b>Chapter 4. Subject areas</b>	<b>22</b>
<b>Chapter 5. Impact of the Bologna principles</b>	<b>24</b>
<b>Chapter 6. Impact of EC directive 2005/36/EC</b>	<b>28</b>
<b>The Romanian scheme for pharmacy education and training.</b>	<b>31</b>

## Summary.

Pharmacies have a monopoly on the dispensation of the Rx medicines. They can also provide diagnostic services (e.g. measuring blood pressure, glycaemia, calculating the body mass index). In Romania ownership of community pharmacies is not restricted to pharmacists only and many pharmacies are now part of different pharmacy chains.

In order to become registered pharmacists, the students must follow a 5-year (M.Sc. Pharm. “license” in Romanian) degree course with a 6 months' traineeship (in the fifth year) in community or hospital pharmacy.

The so-called “pharmaceutical assistants” are, in fact, “medical assistants” (because the Romanian Law no. 95/2006 regarding The Reform of the Health System, specifies only “medical assistants”). Following a 3 years' study course at a medical faculty (B.Sc. Pharm.), a technological or high school college for health personnel, “medical assistants” dispense medicines and counsel patients under the supervision of a registered pharmacist. They can also work in other drug shops (called “drogherie”) where they can dispense OTC medicines, parapharmaceuticals, dietary supplements, herbal and cosmetic preparations. In these drug shops the pharmacy assistant is working without the guidance of a registered pharmacist.

Pharmacy training is organized as a 5 years integrated study programme. The first two years are devoted mainly to chemical, biological, physics and mathematics and generic sciences while in the next 3 years, disciplines such as pharmaceutical technology, medical sciences and law prevail. In the academic year 2009-2010 the number of study hours has been reduced in accordance with the European directives.

The university study period ends with specific subject courses, 6 month training and the final exam. The graduates can specialize further either in Clinical Pharmacy or Clinical Laboratory through the internship program (“rezidentiat”), or with a master in Biostatistics or in Public Health Management and/or with a PhD.

The specialization through the internship program (“rezidentiat”) is similar to the physicians' specialization and is followed by another exam of specialist pharmacist and then primary pharmacist (“farmacist primar”) through an exam of “primariat”. The existing Law 95/2006 of health reform doesn't have specific requests for primary or specialist pharmacists.

The master/PhD specialization is not yet equivalent to that of specialist/primary pharmacist. Certain competency can be achieved through a program of Ministry of Health (e.g. Homeopathy structured in 2 modules for pharmacists and 3 Modules for physicians). In this way a pharmacist can dispense/prepare homeopathic product or work as production responsible in such unit.

## Introduction.

### Statistics for Romania.

Total population: 21,438,000

Gross national income per capita (PPP international \$): 10,980

Life expectancy at birth m/f (years): 70/77

Healthy life expectancy at birth m/f (years, 2003):63/68

Probability of dying under five (per 1 000 live births): 14

Probability of dying between 15 and 60 years m/f (per 1 000 population): 215/92

Total expenditure on health per capita (Intl \$, 2006): 472

Total expenditure on health as % of GDP (2006): 5,4

Detailed information is available at: World Health Statistics 2009:

<http://www.who.int/whosis/whostat/2009/en/index.html>

### Highlights on health in Romania.

The Romanian health care system has been changed, after 1989, from an integrated model, in which health care providers were directly employed by the Ministry of Health, to a *contract model* in which health care providers in the curative health system are independent and are contracted by the health insurance funds. These contracts are based on the so-called framework contract.

Since 1999, the main actors involved in the health care system are: the Ministry of Health and the district public health directorates, the National and the district health insurance funds, the Romanian and the district colleges of physicians and of pharmacists, the health care providers.

Until 1997, the main source of funding for the centralized health care system in Romania was general revenues, mainly through the state budget. In 1997, the Health Insurance Law transformed the Romanian health care system into an insurance-based system.

Until 1997, tax revenues were the main source of financing of the Romanian health sector. Since 1998, these sources have been replaced to a large extent by contributions to social health insurance. Health expenditure from public sources varied between 2.8% and 3.9% of GDP, or US \$30–60 per capita.

WHO estimates that a person born in Romania in 2002 can expect to live 71 years on average: 75 years if female and 67 years if male? WHO also estimates that Romanians spend on average 12% (8 years) of their lives with illness and disability.

In Romania, post neonatal mortality is higher than neonatal mortality. Romania' s maternal rate varied between 1989-1990-1996 and then decreased.

In 2002, the main non-communicable diseases accounted for about 90% of all deaths in Romania (of all deaths, 61% were caused by diseases of the circulatory system and 16% by cancer).



Pharmaceuticals are dispensed to the public through privately-owned community pharmacies in Romania. Over 80% of the community pharmacies are part of different pharmacy chains. Hospital pharmacies only provide pharmaceuticals for hospital use (in-patient care).

See also:

Health care systems in transition: Romania, European Observatory on Health Care Systems, WHO Regional Office for Europe, 2000

[http://ec.europa.eu/health/ph\\_information/dissemination/hsis/hsis\\_13\\_nhs\\_en.htm](http://ec.europa.eu/health/ph_information/dissemination/hsis/hsis_13_nhs_en.htm)

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

	Y/N, number or %	Comments.
<b>Community pharmacy</b>		
Community pharmacists	around 13,600	3,533 pharmacists in Bucharest and 10,067 outside Bucharest. Around 1,600 inhabitants/pharmacist.
Community pharmacies	5,938	3,600 inhabitants/pharmacy 2.3 pharmacists/pharmacy
Competences and roles of community pharmacists		Supplying prescription medicines Managing medicines for some ailments Giving advice on medicines Screening, diagnostic services
Ownership of a pharmacy limited?	No	The community pharmacies are private institutions. Their owners can practice any profession as long as they hire a pharmacist as the manager
Rules governing the distribution of pharmacies?	No	Demographic criteria only (until the end of 2012, according to the Law of pharmacy 266 / 2008): <ul style="list-style-type: none"> <li>• Bucharest – 1 pharmacy per 3000 inhabitants</li> <li>• cities that are capital of the district 1 per 3500 inhabitants</li> <li>• other cities 1 per 4000 inhabitants.</li> </ul>
Are drugs and healthcare products available by channels other than pharmacies?	Yes	Through stores that sell plants or medicines from plants and OTC ( <i>Plafar</i> ) only. The herbal products are available outside of community pharmacies as well. In the last years e-pharmacies appeared but their statute is not yet clearly established by law.
Are persons other than pharmacists involved in community practice?	Yes	
Their titles and number(s)	> 120 000	The title “Pharmacy assistants” is assimilated, by Romanian law, with that of “medical assistants”. Some medical assistants, like nurses, work under the supervision of a physician in a hospital or a clinic. Albeit, they can also work with community and hospital pharmacists. In a pharmacy, the so-called “medical assistants” help the pharmacist in dispensing and counselling only for OTC medicines and plant products.  The education of medical assistants can be offered in a Faculty of Pharmacy or in a Medical School. Medical assistants and Pharmacy assistants have completely different curricula, but the confusion arises from the lack of “pharmacy assistant” profession in official documents.
Their qualifications		
Organisation providing and validating the E&T		“Medical assistants for pharmacy” may study for 3 years at a university, or at a post-secondary medical school. For example, the Faculty of Medical Assistants and Midwives ( <i>Facultatea de Asistenti Medicali si Moase</i> of the University of Medicine and Pharmacy Carol Davila Bucharest ( <a href="http://www.univermed-cdgm.ro">www.univermed-cdgm.ro</a> , <a href="http://www.umf.ro">www.umf.ro</a> ) offers courses for Medical Assistants, Midwives, Pharmacy Assistants, Physiotherapy, Clinical Laboratory, Radiology and Imaging and Dental Technicians. The admission requires an exam. The graduating medical assistants are given a “graduate” diploma. Once again, the titles and curricula are heritage from communist period

		<p>and have no correspondence in European laws. On the other hand, it must be remarked that the pharmacy assistants are a necessary and useful link in the pharmacy profession.</p> <p>Three-year courses are also offered by the The Carol Davila Post-secondary Medical School (<i>Scoala postliceală Carol Davila</i>) offers courses for graduates from the secondary education with or without a Diploma of Baccalaureate .(<a href="http://www.scoalacdavila.ro">http://www.scoalacdavila.ro</a> ) Admission is made by interview. The graduates receive also a B.Sc. Pharm. diploma.</p>
Duration of studies (years)	3	3 years at a university, or at a post-secondary medical school.
Subject areas		Assistant pharmacists study the following subjects: General, organic and inorganic chemistry, Analytical chemistry, Pharmaceutical chemistry, Physics, mathematics, Botany, Galenic formulation, Cosmetics, Elements of Human anatomy and physiology, Medical terminology, Pharmacology, Pharmacognosy, Non-pharmacological treatment, Generic drugs, OTC medicines, Phytotherapy, Legislation, law relating to pharmacy, Professional Ethics, Foreign languages
Competences and roles		Supplying OTC medicines and herbal products Part of multidisciplinary patient-care team at hospital pharmacy.
<b>Hospital pharmacy</b>		
Does such a function exist?	Yes	
Number of hospital pharmacists	Around 692	120 in Bucharest and 572 in the rest of the country. The hospital pharmacies are small with 1-2 pharmacists and 2-3 medical assistants. The number of specialists is insufficient to be able to cope with the demand of the patients hospitalized who are far too numerous. Therefore it will be absolutely necessary for the good development of the patients care to increase the staff. The lack of specialist staff is also due to the small salary.
Number of hospital pharmacies	Around 564	120 in Bucharest and 444 in the rest of the country.
Competences and roles of hospital pharmacists		<p>The pharmacist is permanent active member of the auction commission for pharmaceutical products;</p> <p>The order for medicines is made by the pharmacist;</p> <p>The pharmacist is responsible for checking the medicines ordered as well as of their depositing in the best conditions and preservation;</p> <p>Has to verify drug dispensation in good conditions and time in conformation with medical shifts;</p> <p>The pharmacist is member of the nosocomial infection committee and also reports any infection which appears in the hospital;</p> <p>The pharmacist has responsibility of distributing the drugs under strict legal control;</p> <p>The pharmacist is member of the team which is responsible with the standard operation procedures in the hospital pharmacy</p> <p>There are few medicines being still manufactured by pharmacists in the hospital pharmacy that are designed for internal or external use.</p> <p>Responsibility for clinical pharmacist Emergency Clinical Hospital Bucharest:</p> <ul style="list-style-type: none"> <li>• establishing and verify therapy in surgery ward;</li> <li>• implementation of the prophylaxis in antibiotics scheme;</li> </ul>

		<ul style="list-style-type: none"> <li>• developing and implementation of the antimicrobial therapy formula</li> <li>• maximizing clinical effect;</li> <li>• minimizing risk of treatment induced adverse events;</li> <li>• minimizing cost of treatment to the insurance house of health;</li> <li>• communication with medical staff;</li> </ul> <p>Responsibility for clinical pharmacist trainer (Emergency Clinical Hospital Bucharest):</p> <ul style="list-style-type: none"> <li>• bedside teaching;</li> <li>• case discussions;</li> <li>• task based learning</li> </ul>
<b>Pharmaceutical and related industries</b>		
Number of companies with production, R&D and distribution	7	<p>7 Romanian companies remain, the others have been taken over by international companies</p> <p>Actavis – <a href="http://www.actavis.com">www.actavis.com</a></p> <p>Antibiotice – <a href="http://www.antibiotice.ro">www.antibiotice.ro</a></p> <p>Gedeon-Richter – <a href="http://www.richter.hu">www.richter.hu</a></p> <p>Ozone Laboratories – <a href="http://www.ozonelaboratories.com">www.ozonelaboratories.com</a></p> <p>Sandoz - <a href="http://www.sandoz.com/site/en">http://www.sandoz.com/site/en</a></p> <p>Terapia Ranbaxy – <a href="http://www.terapia.ro">www.terapia.ro</a></p> <p>Zentiva – <a href="http://www.zentiva.com">www.zentiva.com</a></p> <p>See also: The Romanian Association of International Medicines Producers (<i>Asociatia Romana a Producatorilor Internazionali de Medicamente</i> - <a href="http://www.arpim.ro">http://www.arpim.ro</a> )</p> <p>The Romanian Association of International Medicines Manufacturers (ARPIM), the professional organization of the major pharmaceutical companies' representatives in Romania. ARPIM is a member of the <a href="http://www.efpia.eu">European Federation of Pharmaceutical Industries and Associations (EFPIA)</a>.</p>
Production only	5	
Number of companies with distribution only	10	<p>Based on turnover the companies are: Mediplus, Relad Pharma, Fildas, Polisano, Farmexpert, Farmexim, Montero, Europharm Distribution, ADM Farm. Pharma Farm</p> <p><a href="http://www.doingbusiness.ro">http://www.doingbusiness.ro</a>, Romanian Pharmaceutical Market, march 2008</p>
Number of companies producing generic drugs only	8 Romanian and other international companies	<p>The first are Actavis, Antibiotice, Gedeon Richter, Labormed, Ozone, Sandoz, Terapia Ranbaxy si Zentiva, which produce and sell around 60% of medicines volume in Romania. All are members of the Asociation of Producers of Generic Medicines in Romania.</p> <p><a href="http://www.dsclx.ro/legislatie/2006/mai2006/mo2006_434.htm">http://www.dsclx.ro/legislatie/2006/mai2006/mo2006_434.htm</a></p> <p><a href="http://www.wall-street.ro/articol/Companii/57705/S-a-infiintat-Asociatia-Produsatorilor-de-Medicamente-Generice-din-Romania.html">http://www.wall-street.ro/articol/Companii/57705/S-a-infiintat-Asociatia-Produsatorilor-de-Medicamente-Generice-din-Romania.html</a>, 21 January 2008</p>
<b>Industrial pharmacy</b>		
Industrial pharmacists	Around 100	
Competences and roles of industrial pharmacists		<p>Synthesis and production of new chemical entities and drugs</p> <p>R&amp;D – drugs</p> <p>R&amp;D – health care products other than drugs</p> <p>Preclinical drug evaluation (safety and efficacy)</p> <p>Clinical drug evaluation (safety and efficacy)</p> <p>Marketing</p> <p>Distribution</p>

		Medical devices
<b>Other sectors</b>		
Pharmacists working in other sectors	Less than 100	
Sectors in which pharmacists are employed		Armed forces Universities National health services Agricultural and veterinary pharmacy
<b>Roles of professional associations</b>		
Registration of pharmacists	Yes	At the National College of Pharmacists based in Bucharest. <a href="http://www.colegfarm.ro">www.colegfarm.ro</a> There are Colleges in each district, including Bucharest. All the branches are active in registration of pharmacists. After graduation, in order to work as a pharmacist, the candidate must obtain the Pharmacists' Membership Certificate from the National Pharmacy College. Further traineeship-practice is not required.
Creation of community pharmacies and control of territorial distribution	Yes	A dossier has to be presented in order to open a new community pharmacy. This contains data about: number from the Trade Register of the new commercial society created, the personal employed (professional qualification, number), work programme, the proof of ownership of space, proof of the demographic criteria. This must be sent to the Ministry of Health, Department of Strategies and Medicine Politics. After verification of legal criteria, inspections are performed, by the Minister of Health and the College of Pharmacists, in order to release the authorisation to function.
Ethical and other aspects of professional conduct	Yes	Romania has a new Code of Ethics for pharmacists approved by the General Assembly of Pharmacists in 15 June 2009 by Decision no 2/2009.  ( <a href="http://www.colegfarm.ro/documente-ale-cfr/deciziile-adunarii-generale-a-cfr/88-decizie-nr-22009-privind-aprobarea-statutului-cfr-i-a-codului-deontologic.html">http://www.colegfarm.ro/documente-ale-cfr/deciziile-adunarii-generale-a-cfr/88-decizie-nr-22009-privind-aprobarea-statutului-cfr-i-a-codului-deontologic.html</a> ) (in Romanian)
Quality assurance and validation of HEI courses for pharmacists	Yes	The Romanian Agency for Quality Assurance in Higher Education (Agentia Romana de Asigurare a Calitatii in Invatamantul Superior – ARACIS, <a href="http://www.aracis.ro">www.aracis.ro</a> ) inspects and validates the courses for pharmacists at the university.

<b>References and websites</b>	
National law	<p>Legea nr. 266/2008 - Legea Farmaciei, <i>Law of Pharmacy</i>, Publicată în Monitorul Oficial al României, Partea I, Nr. 765/13.XI.2008; <a href="http://www.colegfarm.ro/acte-normative/legi/124-legea-farmaciei-nr-2662008-in-forma-consolidata-.html">http://www.colegfarm.ro/acte-normative/legi/124-legea-farmaciei-nr-2662008-in-forma-consolidata-.html</a></p> <p>Ordinul Ministrului Sanatatii nr 962/2009 pentru aprobarea Normelor privind infiintarea, organizarea si functionarea farmaciilor si drogheriilor, MOF al Romaniei, Partea I nr 538/3.08.2009, <i>Order from the Minister of Health for approving the establishment, organisation and the operation of pharmacies and drugstores</i> <a href="http://www.colegfarm.ro/images/pdf/mo_0538.pdf">http://www.colegfarm.ro/images/pdf/mo_0538.pdf</a></p>

	<p>Ordinul Ministrului Sanatatii nr 1402/2009 pentru modificarea Normelor aprobate prin Ord.M.S. nr 962/2009, <i>Order from the Minister of Health that modifies the above Order.</i> <a href="http://www.colegfarm.ro/acte-normative/ordine-si-ordonante/146-ordin-nr-14022009-pentru-modificarea-normelor-aprobate-prin-oms-nr-9622009.html">http://www.colegfarm.ro/acte-normative/ordine-si-ordonante/146-ordin-nr-14022009-pentru-modificarea-normelor-aprobate-prin-oms-nr-9622009.html</a></p> <p>Legea 95/2006, TITLUL XIV Exercițarea profesiei de farmacist. Organizarea și funcționarea Colegiului Farmaciștilor din România, <i>Title XIV, Exercising the Pharmacist Profession. The Organising and function of Romanian College for Pharmacists</i>, Monitorul Oficial al Romaniei, Partea I nr. 372 din 28/04/2006  <a href="http://www.colegfarm.ro/acte-normative/legi/62-lege-nr-952006-din-14042006-privind-reforma-in-domeniul-sntii.html">http://www.colegfarm.ro/acte-normative/legi/62-lege-nr-952006-din-14042006-privind-reforma-in-domeniul-sntii.html</a></p> <p>Legea nr. 307/2004 privind exercitarea profesiei de asistent medical si a profesiei de moasa, precum si organizarea si functionarea Ordinului Asistentilor Medicali si Moaselor din Romania, <i>Exercising the medical assistant, the midwife and the organization and the function of the Order of Medical Assistances and Midwives in Romania</i>, Monitorul Oficial, Partea I nr. 578 din 30/06/2004  <a href="http://www.oamr.ro/legislatie/nationala/LEGEA_NR_307.pdf">http://www.oamr.ro/legislatie/nationala/LEGEA_NR_307.pdf</a></p> <p>ARPIM Code of ethics in the promotion of medicines adopted by ARPIM (Edition 2010)*  <a href="http://www.arpim.ro/files/Cod_etica_ARPIM_EN.pdf">http://www.arpim.ro/files/Cod_etica_ARPIM_EN.pdf</a></p> <p>The Code of the Pharmacist adopted and the Statute of the Pharmacist's College  <a href="http://www.colegfarm.ro/documente-ale-cfr/documente-ale-cfr/65-codul-deontologic-al-farmacistului.htm">http://www.colegfarm.ro/documente-ale-cfr/documente-ale-cfr/65-codul-deontologic-al-farmacistului.htm</a></p>
EU)	<p>EC Directive 2005/36/EC  <a href="http://ec.europa.eu/internal_market/qualifications/future_en.htm">http://ec.europa.eu/internal_market/qualifications/future_en.htm</a></p>

## 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 Romania	10	<ol style="list-style-type: none"> <li>1. West University <i>Vasile Goldis</i> Arad, <a href="http://www.uvvg.ro/site/">http://www.uvvg.ro/site/</a>, <a href="http://www.4icu.org/reviews/12323.htm">http://www.4icu.org/reviews/12323.htm</a></li> <li>2. University of Medicine and Pharmacy <i>Carol Davila</i>, Bucharest, <a href="http://www.ceed.co.uk/ceed/un/rom/ro003.htm">http://www.ceed.co.uk/ceed/un/rom/ro003.htm</a>; <a href="http://www.univermed-cdgm.ro">www.univermed-cdgm.ro</a></li> <li>3. University of Medicine and Pharmacy Cluj Napoca, <a href="http://www.ceed.co.uk/ceed/un/rom/ro020.htm">http://www.ceed.co.uk/ceed/un/rom/ro020.htm</a>; <a href="http://www.umfcluj.ro/">http://www.umfcluj.ro/</a> in English: <a href="http://www.umfcluj.ro/en">http://www.umfcluj.ro/en</a></li> <li>4. Ovidius University, Constanta, <a href="http://www.euroeducation.net/euro/ro025.htm">http://www.euroeducation.net/euro/ro025.htm</a>; <a href="http://www.univ-ovidius.ro/">http://www.univ-ovidius.ro/</a></li> <li>5. University of Medicine and Pharmacy Craiova, <a href="http://www.umfcv.ro/en/index.html">http://www.umfcv.ro/en/index.html</a></li> <li>6. University of Medicine and Pharmacy Iassy, <a href="http://www.umfiasi.ro/umf/ie2/navigation.jsp?node=2784">http://www.umfiasi.ro/umf/ie2/navigation.jsp?node=2784</a></li> <li>7. Oradea University: <a href="http://www.uoradea.ro/">http://www.uoradea.ro/</a></li> <li>8. University of Medicine and Pharmacy Targu Mures, <a href="http://www.euroeducation.net/euro/ro048.htm">http://www.euroeducation.net/euro/ro048.htm</a>; <a href="http://www.umftgm.ro/">http://www.umftgm.ro/</a></li> <li>9. University of Medicine and Pharmacy Timisoara, <a href="http://www.umft.ro/en/r_index.html">http://www.umft.ro/en/r_index.html</a></li> <li>10. University Lower Danube, Faculty of Medicine and Pharmacy, Galati <a href="http://www.ugal.ro/">http://www.ugal.ro/</a></li> </ol>
Public	9	
Private	1	West University <i>Vasile Goldis</i> Arad, <a href="http://www.uvvg.ro/site/">http://www.uvvg.ro/site/</a> , <a href="http://www.4icu.org/reviews/12323.htm">http://www.4icu.org/reviews/12323.htm</a>
<b>Organisation of HEIs</b>		
Independent faculty	Yes, 8 faculties are part of the "Medicine & Pharmacy" Universities	<ol style="list-style-type: none"> <li>1. University of Medicine and Pharmacy <i>Carol Davila</i>, Bucharest</li> <li>2. University of Medicine and Pharmacy Cluj Napoca</li> <li>3. University Ovidius, Constanta</li> <li>4. University of Medicine and Pharmacy Craiova</li> <li>5. University of Medicine and Pharmacy Iassy</li> <li>6. University Oradea,</li> <li>7. University of Medicine and Pharmacy Targu Mures</li> <li>8. University of Medicine and Pharmacy Timisoara</li> </ol>
Attached to a medical faculty	2	<p>Faculty of Medicine, Dentistry and Pharmacy, at the "University Vasile Goldis" Arad</p> <p>Faculty of Medicine and Pharmacy, Galati</p>
Do HEIs offer B + M degrees?	No	<p>All pharmacy schools have a 5 year integrated systems.</p> <p>There is no split between the first years (1-3) and the years 4-5 and there is no "paper" that gives the right to work after completing the first three years.</p>

<b>Romania</b>		
<b>Teaching staff</b>		
Number of teaching staff (nationals)	Around 100 at each HEI = 1000 in all.	There is no national data on the number of teaching staff in pharmacy
Professionals from outside the HEIs, involved in E&T	Around 3%	The professionals from outside the HEI's involved in E&T are community pharmacists in charge of the traineeship period, researchers from hospitals or research units.
<b>Students</b>		
Number of places at entry	Around 150 – 250 per HEI	Around 150-200 students for smaller schools and 250 for Bucharest and Cluj.
Number of applicants for entry	300-400 per HEI	Around 2 applicants per place.
Graduates that become registered pharmacists.	150 - 270	At the Faculty of Pharmacy In Bucharest there were 270 graduates in 2011
International students (EU)	2%	Students from Bulgaria, Germany, Greece
International students (non EU)	20%	Students from: Albania, Jordan, Iraq, Iran, Israel, Lebanon, Macedonia, Moldavia, Mongolia, Morocco, Nigeria, Palestine, Syria, Tunisia.  The same conditions for entry apply as well as a test of English. We provide pharmacy courses in English.
<b>Entry requirements (beginning of S1 of B1, following secondary school)</b>		
Specific pharmacy-related, entrance examination	Yes	Botany or Anatomy and Organic Chemistry – these subjects are examined during specific exams to enter pharmacy studies
Other form of entry requirement at a national level	Yes	Graduates who already have a degree from other faculties (Medicine, Chemistry, Biology) and want a pharmacy degree also, can start from an advanced entry, 2 <sup>nd</sup> or the 3 <sup>rd</sup> year.
Is there a national <i>numerus clausus</i> ?	No	
<b>Advanced entry</b>		
At which level?		None
<b>Fees per year</b>		
For home students	6000 RON	Half of places are paid by government and the other half by the students.
For EU MS students	6000 RON	
For non EU students	5000 €	
<b>Length of course</b>	<b>5 years</b>	
<b>Bucharest</b>		
<b>Teaching staff</b>		
Number of teaching staff (nationals)	123	The staff is made of assistant professors, associate professors, professors with full position.
Professionals from outside the HEIs, involved in E&T	2-3%	The professionals from outside our HEI's involved in E&T are community pharmacists in charge of the traineeship period, researchers from hospitals or research units.
<b>Students</b>		
Number of places at entry	250	<a href="http://www.univermed-cdgm.ro/?pid=1693">http://www.univermed-cdgm.ro/?pid=1693</a> , in 2009



Number of applicants for entry	400	
Graduates that become registered pharmacists.	270	As all graduates become registered pharmacists this means that the Romanian government authorities accept the pharmacy degree as being sufficient proof of competence and do not have any further requirements such as a pre-registration of practice followed by an examination set by the pharmacy council, for example.
Number of international students (EU)	7	Students from Bulgaria, Germany, Greece
Number of international students (non EU)	68	Students from: Albania, Jordan, Iraq, Iran, Israel, Lebanon, Macedonia, Moldavia, Mongolia, Morocco, Nigeria, Palestine, Siria, Tunisia
<b>Specialization</b>		
Does your HEI provide specialized courses?	Yes	<p>In order to work in industry or hospital as an executive it is sufficient to be a graduate of the integrated Bachelor + Master 5 years program.</p> <p>One can become a "Qualified Person" after two years' activity in certified (GMP, GCP, GLP ) industrial units in the field of qualitative analysis of the medicines, quality control of active substances or any other tests and checking necessary to insure the quality of medicines . The certification is validated by the National Medicines Agency after examination of the activity of the candidate.</p> <p>It is not mandatory to be a pharmacist in order to become a Qualified Person. Specific conditions are mentioned in the Law 95/2006 Title XVII Art. 758.</p> <p>In order to obtain a leading position in a hospital pharmacy it is necessary to become a "specialist" following a two years' education in the framework of "rezidentiate" in a faculty of pharmacy and an exam.</p> <p>In order to be promoted the pharmacist may or not be specialist in clinical pharmacy.</p> <p>Very few hospitals have pharmacists specialized in clinical pharmacy. Most of them are specialists in community pharmacy.</p>
In which years?	Postgraduate	
In which specialisation (industry, hospital...)?		<p>Specialisation in Pharmaceutical Laboratory , Clinical Pharmacy</p> <p>The disciplines studied in Pharmaceutical Laboratory specialisation are:</p> <ol style="list-style-type: none"> <li>1. Methodology of the scientific research</li> <li>2. Elements of mathematics and biostatistics in laboratory analysis</li> <li>3. Legislation and Management in pharmaceutical laboratory</li> <li>4. Biochemistry</li> <li>5. Evaluation of therapeutic effects, analysis and control of the vegetal products</li> <li>6. Experimental pharmacology</li> <li>7. Elements of informatics in pharmaceutical laboratory</li> <li>8. Food hygiene</li> <li>9. Toxicology</li> </ol> <p>The disciplines of Clinical Pharmacy are:</p> <ol style="list-style-type: none"> <li>1. Clinical Pharmacy in hospital and community pharmacy</li> <li>2. Clinical Laboratory</li> <li>3. Pharmacotherapy and Pharmacoepidemiology;</li> <li>4. Pathology</li> <li>5. Medical Biochemistry</li> <li>6. Drug Toxicology</li> <li>7. Clinical Research Methodology</li> <li>8. Biostatistics and Mathematics applied</li> </ol>

		9. Clinical Trials. Bioethics aspects 10. Biopharmacy and Pharmacokinetics 11. Legislation, Management and Marketing 12. Pharmaco-economics 13. Communication 14. Clinical Pharmacy training
What are the student numbers in each specialization?	20 in clinical pharmacy, 10 in pharmaceutical laboratory	
<b>Past and present changes in E&amp;T</b>		
Major changes since 1999 at your HEI?	No	
Major changes envisaged before 2019.	No	
Is your HEI typical of all HEIs in Romania?	Yes	

<b>References and websites</b>	
National law	<p>Legea invatamantului nr. 84/1995 din 24/07/1995, actualizata la 20.07.2006, Education Law  <a href="http://www.univermed-dgm.ro/dwl/01_Legea_Invatamantului.pdf">http://www.univermed-dgm.ro/dwl/01_Legea_Invatamantului.pdf</a></p> <p>Legea educatiei nationale. Legea nr. 1/2011, M.Of. Partea I nr.18/10 ianuarie 2011</p> <p>Lege nr. 288 / 24.06.2004 privind organizarea studiilor universitare, M.Of. Partea I nr 614/7.07.2004, Law regarding the organization of university studies  <a href="http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf">http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf</a></p> <p><a href="http://www.univermed-cdgm.ro/?pid=1693">http://www.univermed-cdgm.ro/?pid=1693</a>  <a href="http://www.ceebd.co.uk/ceed/un/rom/ro003.htm">http://www.ceebd.co.uk/ceed/un/rom/ro003.htm</a>  <a href="http://www.4icu.org/reviews/3940.htm">http://www.4icu.org/reviews/3940.htm</a></p> <p>Hotărârea Guvernului Romaniei nr. 1257/2005 din 18/10/2005 privind aprobarea Regulamentului de organizare si functionare al Agentiei Române de Asigurare a Calitatii în Învățământul Superior (ARACIS), Publicat in Monitorul Oficial, Partea I nr. 966 din 01/11/2005, Romanian Government resolution regarding the approval of the Rules for Organising and Function of Romanian Agency for Quality Assurance  <a href="http://www.aracis.ro/uploads/media/HG_nr_1257.pdf">http://www.aracis.ro/uploads/media/HG_nr_1257.pdf</a></p> <p>Lege nr. 288 din 24 iunie 2004 privind organizarea studiilor universitare Publicat în Monitorul Oficial, Partea I nr. 614 din 7 iulie 2004, Law regarding the organization of university studies  <a href="http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf">http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf</a></p> <p><a href="http://www.univermed-cdgm.ro/dwl/01_Legea_Invatamantului.pdf">Legea invatamantului</a>, Lege nr. 84/1995 din 24/07/1995, versiune actualizată la data de 20/07/2006, Education Law actualized until 20.07.2006,  <a href="http://www.univermed-cdgm.ro/dwl/01_Legea_Invatamantului.pdf">http://www.univermed-cdgm.ro/dwl/01_Legea_Invatamantului.pdf</a></p>

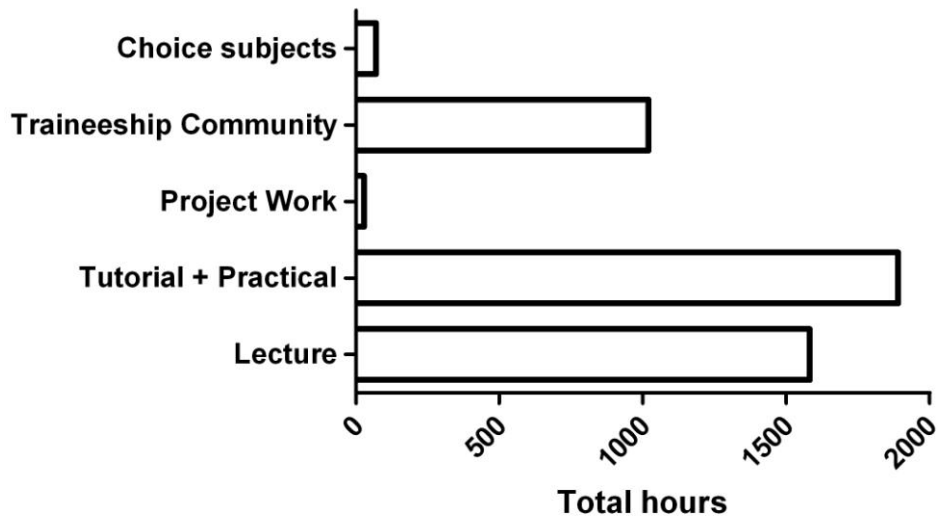
	<p>Lege nr. 128 din 12 iulie 1997 privind Statutul personalului didactic , publicat în Monitorul Oficial, Partea I nr. 158 din 16 iulie 1997  <a href="http://www.univermed-cdgm.ro/dwl/02_Legea_privind_Statutul_personalului_didactic.pdf">http://www.univermed-cdgm.ro/dwl/02_Legea_privind_Statutul_personalului_didactic.pdf</a></p> <p>Lege nr. 288 din 24 iunie 2004 privind organizarea studiilor universitare, Publicat în Monitorul Oficial, Partea I nr. 614 din 7 iulie 2004, Law regarding the organization of academic studies  <a href="http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf">http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf</a></p>
	<p>EC Directive 2005/36/EC  <a href="http://ec.europa.eu/internal_market/qualifications/future_en.htm">http://ec.europa.eu/internal_market/qualifications/future_en.htm</a></p>

### Chapter 3. Teaching and learning methods

Method	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
<b>HEIs courses</b>						
Lecture	308	322	378	378	196	<b>1582</b>
Tutorial + Practical	462	406	364	420	238	<b>1890</b>
Project work	-	-	-	-	28	<b>28</b>
<b>Traineeship</b>						
Community	60	60	60	60	780	<b>1020</b>
<b>Subtotal:</b>	<b>830</b>	<b>788</b>	<b>802</b>	<b>858</b>	<b>1242</b>	<b>4520</b>
<b>Electives</b>						
Choice	14	14	14	14	14	<b>70</b>
<b>Total:</b>	<b>844</b>	<b>802</b>	<b>816</b>	<b>872</b>	<b>1256</b>	<b>4590</b>

References and websites	
National law	<p>Hotărârea Guvernului României nr. 1257/2005 din 18/10/2005 privind aprobarea Regulamentului de organizare și funcționare al Agenției Române de Asigurare a Calității în Învățământul Superior (ARACIS), Publicat în Monitorul Oficial, Partea I nr. 966 din 01/11/2005, Romanian Government resolution regarding the approval of the Rules for Organising and Function of Romanian Agency for Quality Assurance  <a href="http://www.aracis.ro/uploads/media/HG_nr_1257.pdf">http://www.aracis.ro/uploads/media/HG_nr_1257.pdf</a></p> <p>Lege nr. 288 din 24 iunie 2004 privind organizarea studiilor universitare Publicat în Monitorul Oficial, Partea I nr. 614 din 7 iulie 2004, Law regarding the organization of university studies  <a href="http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf">http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf</a></p> <p>Lege nr. 87/2006 din 10/04/2006 pentru aprobarea Ordonanței de urgență a Guvernului nr. 75/2005 privind asigurarea calității educației Publicat în Monitorul Oficial, Partea I nr. 334 din 13/04/2006, Law that approves the Emergency Government Decision regarding the assurance of quality education  <a href="http://www.univermed-cdgm.ro/dwl/07_Legea_87_pentru_aprobarea_OUG_75.pdf">http://www.univermed-cdgm.ro/dwl/07_Legea_87_pentru_aprobarea_OUG_75.pdf</a></p>
EU	<p>EC Directive 2005/36/EC  <a href="http://ec.europa.eu/internal_market/qualifications/future_en.htm">http://ec.europa.eu/internal_market/qualifications/future_en.htm</a></p>

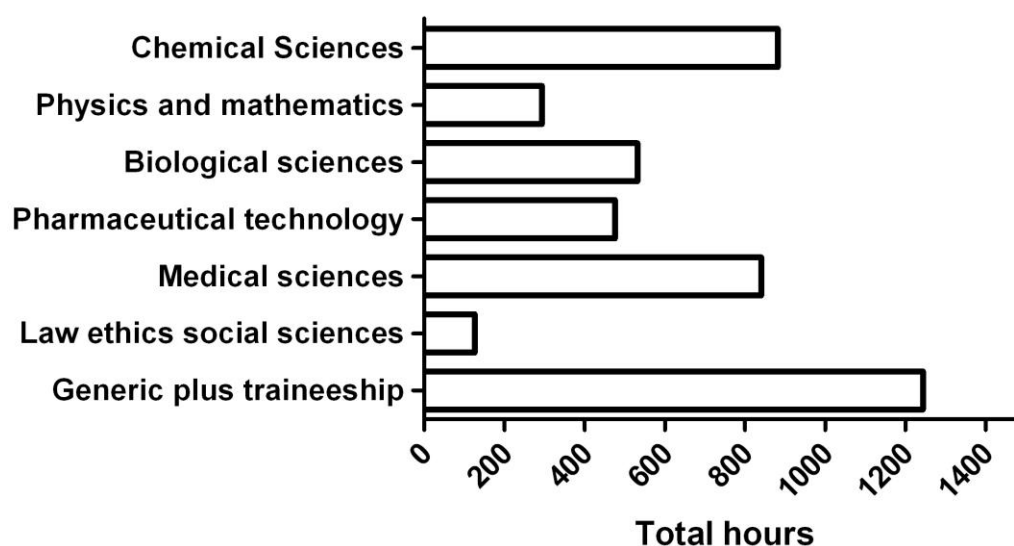
### Hours by learning methods



## Chapter 4. Subject areas

Subject area	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
<b>CHEMSCI</b>	<b>238</b>	<b>238</b>	<b>238</b>	<b>168</b>	-	<b>882</b>
<b>PHYSMATH</b>	238	-	-	56	-	<b>294</b>
<b>BIOLSCI</b>	154	14	336	14	14	<b>532</b>
<b>PHARMTECH</b>	28	14	84	140	210	<b>476</b>
<b>MEDISCI</b>	-	182	98	392	168	<b>840</b>
<b>LAWSOC</b>	14	14	-	42	56	<b>126</b>
<b>GENERIC + TRAINEESHIP</b>	172	172	60	60	780	<b>1244</b>
<b>TOTAL</b>	<b>844</b>	<b>634</b>	<b>816</b>	<b>872</b>	<b>1228</b>	<b>4394</b>

### Hours by subject area



References and websites	
National law	<p>Hotărârea Guvernului României nr. 1257/2005 din 18/10/2005 privind aprobarea Regulamentului de organizare și funcționare al Agenției Române de Asigurare a Calității în Învățământul Superior (ARACIS), Publicat în Monitorul Oficial, Partea I nr. 966 din 01/11/2005, Romanian Government resolution regarding the approval of the Rules for Organising and Function of Romanian Agency for Quality Assurance  <a href="http://www.aracis.ro/uploads/media/HG_nr_1257.pdf">http://www.aracis.ro/uploads/media/HG_nr_1257.pdf</a></p> <p>Lege nr. 288 din 24 iunie 2004 privind organizarea studiilor universitare Publicat în Monitorul Oficial, Partea I nr. 614 din 7 iulie 2004, Law regarding the organization of university studies  <a href="http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf">http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf</a></p> <p>Lege nr. 87/2006 din 10/04/2006 pentru aprobarea Ordonanței de urgență a Guvernului nr. 75/2005 privind asigurarea calității educației Publicat în Monitorul Oficial, Partea I nr. 334 din 13/04/2006, Law that approves the Emergency Government Decision regarding the assurance of quality education  <a href="http://www.univermed-cdgm.ro/dwl/07_Legea_87_pentru_aprobarea_OUG_75.pdf">http://www.univermed-cdgm.ro/dwl/07_Legea_87_pentru_aprobarea_OUG_75.pdf</a></p>
EU	<p>EC Directive 2005/36/EC  <a href="http://ec.europa.eu/internal_market/qualifications/future_en.htm">http://ec.europa.eu/internal_market/qualifications/future_en.htm</a></p>

## Chapter 5. Impact of the Bologna principles

Bologna principle	Is the principle applied? Y/N or partially	How is it applied? Does your HEI have multilateral recognition and agreements? Other comments.
1. Comparable degrees / Diploma Supplement	Yes	Diploma Supplement is according to European directives (it is in Romanian and English)
2. Two main cycles (B and M) <u>with entry and exit at B level</u>	No	We have a 5-year integrated course with no possibility of graduation after 3 years.
3. ECTS system of credits / links to LLL	Yes	Theoretically, this system was accepted and formally adopted in 1998. CPD is compulsory. Renewal of a licence to practice depends on proof of assiduity at CPD courses (organised by faculties of pharmacy and/or the College of Pharmacists) or participating in scientific conferences and subscribing to pharmaceutical magazines. Each pharmacist must gather 40 "Credit Points" of Pharmaceutical Education every year. After presenting the proof (diplomas, subscriptions) to the College the licence to practice is renewed.  There is no link between pre-and post-graduate systems of credit points.
4. Obstacles to mobility	Yes	Both language barriers and finance. Only incoming students receive language tuition. Outgoing ones can apply but usually don't receive. We do not have supplementary travel scholarships
5. European QA	No	Not yet, but in the near future. Pharmacy courses and traineeship are validated by the Ministry of Education and the Romanian Agency for Quality Assurance in Higher Education (ARACIS <a href="http://www.aracis.ro/">http://www.aracis.ro/</a> ).
6. European dimension	Yes	Our staff is involved in European Projects: - Cooperation in Science and Technology (COST) - Joint Research Center (JRC) Ispra The EU collaboration in the field of education is rather absent.
ERASMUS staff exchange to your HEI from elsewhere		0
ERASMUS staff exchange from your HEI to other HEIs		0
ERASMUS student exchange to your HEI from elsewhere		0
ERASMUS student exchange from your HEI to other HEIs		Number of student months: 3-6 2 students in 2008 3 students in 2009, all to Italy



## References and websites

References to texts and articles of national law

[Legea invatamantului](http://www.univermed-cdgm.ro/dwl/01_Legea_Invatamantului.pdf), Lege nr. 84/1995 din 24/07/1995, versiune actualizată la data de 20/07/2006, Education Law actualized until 20.07.2006,  
[http://www.univermed-cdgm.ro/dwl/01\\_Legea\\_Invatamantului.pdf](http://www.univermed-cdgm.ro/dwl/01_Legea_Invatamantului.pdf)

Lege nr. 128 din 12 iulie 1997 privind Statutul personalului didactic , publicat în Monitorul Oficial, Partea I nr. 158 din 16 iulie 1997  
[http://www.univermed-cdgm.ro/dwl/02\\_Legea\\_privind\\_Statutul\\_personalului\\_didactic.pdf](http://www.univermed-cdgm.ro/dwl/02_Legea_privind_Statutul_personalului_didactic.pdf)

Lege nr. 288 din 24 iunie 2004 privind organizarea studiilor universitare, Publicat în Monitorul Oficial, Partea I nr. 614 din 7 iulie 2004, Law regarding the organization of academic studies  
[http://www.univermed-cdgm.ro/dwl/04\\_Legea\\_privind\\_organizarea\\_studiilor\\_universitare.pdf](http://www.univermed-cdgm.ro/dwl/04_Legea_privind_organizarea_studiilor_universitare.pdf)

Ordonanță de urgență nr. 75/2005 din 12/07/2005 privind asigurarea calității educatiei, Publicat in Monitorul Oficial, Partea I nr. 642 din 20/07/2005, Government Emergency Ordinance regarding quality assurance  
[http://www.univermed-cdgm.ro/dwl/06\\_OUG\\_75\\_2005\\_privind\\_Asigurarea\\_Calitatii.pdf](http://www.univermed-cdgm.ro/dwl/06_OUG_75_2005_privind_Asigurarea_Calitatii.pdf)

Lege nr. 87/2006 din 10/04/2006 pentru aprobarea Ordonantei de urgență a Guvernului nr. 75/2005 privind asigurarea calității educatiei publicat în Monitorul Oficial, Partea I nr. 334 din 13/04/2006, Law for approval of the Emergency Ordinance of the Government 75/2005  
[http://www.univermed-cdgm.ro/dwl/07\\_Legea\\_87\\_pentru\\_aprobarea\\_OUG\\_75.pdf](http://www.univermed-cdgm.ro/dwl/07_Legea_87_pentru_aprobarea_OUG_75.pdf)

Hotărârea Guvernului Romaniei nr. 1257/2005 din 18/10/2005 privind aprobarea Regulamentului de organizare si functionare al Agentiei Române de Asigurare a Calității în Învățământul Superior (ARACIS) publicat in Monitorul Oficial, Partea I nr. 966 din 01/11/2005, Romanian Government Decision regarding the approval of the Regulation for organizing and function of the Romanian Agency for Quality Assurance in Higher Education  
[http://www.univermed-cdgm.ro/dwl/08\\_HG\\_1257\\_2005\\_Regulament\\_organizare\\_functionare\\_ARACIS.pdf](http://www.univermed-cdgm.ro/dwl/08_HG_1257_2005_Regulament_organizare_functionare_ARACIS.pdf)  
[Hotarare nr. 1175/2006 privind organizarea studiilor universitare de licenta si aprobarea listei domeniilor si specializarilor din cadrul acestora](http://www.univermed-cdgm.ro/dwl/08_HG_1257_2005_Regulament_organizare_functionare_ARACIS.pdf)

[Nomenclatorul domeniilor de studii universitare de licenta si al specializarilor din cadrul acestora, al specializarilor reglementate sectorial si/sau general, precum si numarul de credite de studiu transferabile](http://www.univermed-cdgm.ro/dwl/10_HG_676_2007_Domenii_studii_de_licenta.pdf), București, Nr. 67628 iunie 2007, Classification of the licence academic studies and the specializations that are regulated as well as the number of credits of transfer and accumulation  
[http://www.univermed-cdgm.ro/dwl/10\\_HG\\_676\\_2007\\_Domenii\\_studii\\_de\\_licenta.pdf](http://www.univermed-cdgm.ro/dwl/10_HG_676_2007_Domenii_studii_de_licenta.pdf)

[Hotarare nr. 404/2006 privind organizarea si desfasurarea studiilor universitare de masterat](http://www.univermed-cdgm.ro/dwl/12_HG_404_2007_Masterat.pdf), din 29.03.2006, , publicat in M Of. Partea I nr 319 din 10.04.2006, Government decision regarding the organisation of the master studies,  
[http://www.univermed-cdgm.ro/dwl/12\\_HG\\_404\\_2007\\_Masterat.pdf](http://www.univermed-cdgm.ro/dwl/12_HG_404_2007_Masterat.pdf)

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	<p>agreement by cooperation with third countries</p> <p><a href="#"><u>Decizia nr. 2241/2004/CE a Parlamentului European si a Consiliului din 15 decembrie 2004 de instituire a unui cadru comunitar unic pentru transparenta calificarilor si competentelor (Europass)</u></a>, L 390/6, OJ EC 16 vol 2, p.5, European Parliament and Council Decision for establishing a unique community framework for transparent of qualifications and competencies</p> <p><a href="#"><u>Decizia nr. 1719/2006/CE a Parlamentului European si a Consiliului din 15 noiembrie 2006 de instituire a programului Tineretul in actiune pentru perioada 2007-2013</u></a>, L 327/30, OJ EC nr 16 vol 3, p. 10, European Parliament and Council Decision for establishing a programme The Youth in action for 2007-2013</p> <p><a href="#"><u>Decizia nr. 1720/2006/CE a Parlamentului European si a Consiliului din 15 noiembrie 2006 de stabilire a unui program de actiune in domeniul invatarii continue</u></a>, L 327/45, OJ EC nr 16, vol 3, p. 25, European Parliament and Council Decision for establishing an action programme for continuing education</p> <p><a href="#"><u>Recomandarea Parlamentului European si a Consiliului din 23 aprilie 2008 privind stabilirea Cadrelui european al calificarilor pentru invatarea de-a lungul vietii (2008/C 111/01)</u></a>, C 111/1, European Parliament and Council Recommendation regarding the establishment of the European Qualification Card for Life Long Learning <a href="http://eur-lex.europa.eu/ro/legis/20080601/chap1630.htm">http://eur-lex.europa.eu/ro/legis/20080601/chap1630.htm</a></p>
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## Chapter 6. Impact of EC directive 2005/36/EC

The directive states	How does / will this directive statement affect pharmacy E&T?	If you wish to expand your answer, please add your comments below. Do you consider the directive statement valid? If not how would you change it?
“Evidence of formal qualifications as a pharmacist shall attest to training of at least <u>five years' duration</u> ,...”	Duration 5 years	
“ <u>...four years of full-time theoretical and practical training at a university or at a higher institute of a level recognised as equivalent, or under the supervision of a university;</u> ”	Yes, applied ad literam (4.5 years of full time theoretical and practical training and 6 months of traineeship in hospital or community pharmacy)	Professors from the pharmaceutical technology department validate the traineeship through an oral / written examination in which the student must solve a problem in pharmaceutical technology (e.g. a pharmaceutical preparation). At the end of this period, the student must also present a notebook with his/her activity in the practice period and be able to answer questions regarding pharmaceutical practice.
“ <u>...six-month traineeship in a pharmacy which is open to the public or in a hospital, under the supervision of that hospital's pharmaceutical department.</u> ”	yes	Industrial traineeship is allowed in lieu of community or hospital traineeship, but for only 1 of the 6 compulsory months.
“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> ”	Yes	
Directive annex	How does / will this directive annex affect pharmacy E&T?	If you wish to expand your answer, please add your comments below. Do you consider the directive annex valid? If not how would you change it?
<b>V.6. PHARMACIST</b> <b>5.6.1. Course of training for pharmacists</b> Plant and animal biology / Physics / General and inorganic chemistry / Organic chemistry / Analytical chemistry / Pharmaceutical chemistry, including analysis of medicinal products /	2005 curricula is in fact “old” and represents an obstacle in updating pharmaceutical education to general frame	We would change the annex by changing the importance of certain subjects:  Greater importance: Biopharmacy, I.T., Bioanalytics, Medicinal chemistry, Physio-pathology, Bioanorganic chemistry  Less importance: Inorganic chemistry, Anatomy

<p>General and applied biochemistry (medical) / Anatomy and physiology; medical terminology / Microbiology / Pharmacology and pharmacotherapy / Pharmaceutical technology / Toxicology / Pharmacognosy / Legislation and, where appropriate, professional ethics.</p>		<p>Biopharmacy – release of drugs from pharmaceutical formulations, bioavailability and pharmacokinetics. Bioanalytics – assay of drugs in biological fluids Bioorganic- complexes of ionic metals with enzymes and proteins.</p>
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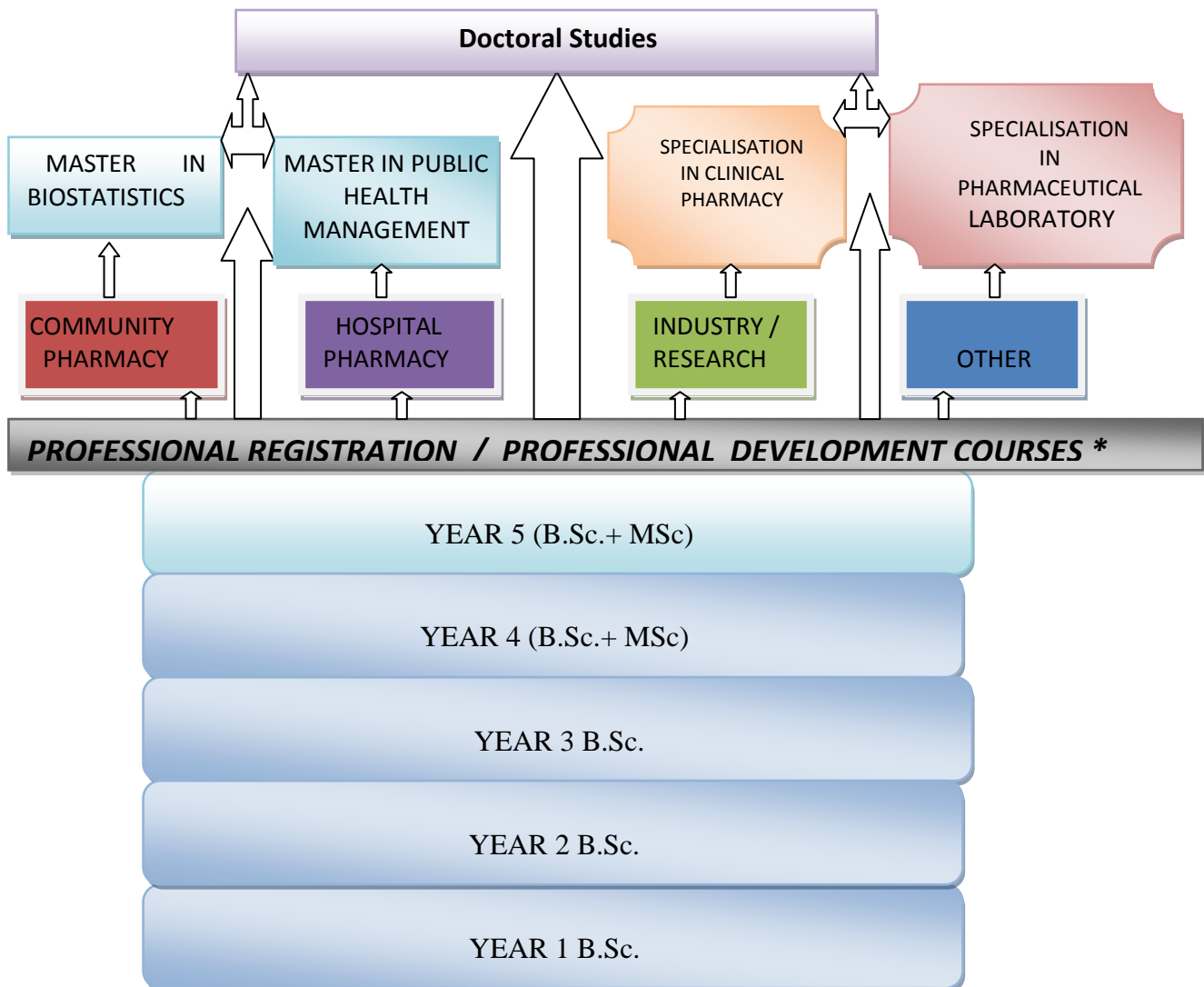
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<http://eur-lex.europa.eu/ro/legis/20080601/chap1630.htm>

## The Romanian system of pharmacy education and training



**1. \*The professional development courses offered by the Faculty of Pharmacy in Bucharest are the following: Asigurarea calitatii preparatelor farmaceutice sterile.**

*Quality assurance for pharmaceutical sterile products*

**2. Proiectarea si formularea comprimatelor "perorale".**

*Design and formulation of "peroral" tablets*

**3. Tehnologii moderne de granulare farmaceutica.**

*Modern granulation pharmaceutical technologies*

**4. Aplicatiile farmaceutice ale emulsiilor si suspensiilor.**

*Therapeutical application of emulsions and suspensions*

**5. Design-ul, tehnologii de obtinere si aplicatiile sistemelor terapeutice transdermice.**

*Design and technologies for obtaining and application of therapeutical transdermic systems*

**6. Rolul farmacistului in comunicare si complianta.**

*Pharmacists's role in communication and compliance*

**7. Acoperirea comprimatelor si peletelor.**

*Coating of the tablets*

**8. Homeopatie.**

*Homeopathy*

**9. Preparate farmaceutice de inhalat si presurizate.**

*Presurised pharmaceutical products for inhalation*

**10. Caracteristici tehnico-administrative ale medicamentului.**

*Technical – administrative characteristics of medicine*

**11. Strategii de imbunatatire a eliberarii dermice a substantelor medicamentoase.**

*Strategies for improving the dermal release of active substances*

**Aspecte de formulare a preparatelor administrate in medicatia geriatrica.**

*Formulation aspects of products administered in geriatric population*

**12. Aspecte de formulare a preparatelor administrate in medicatia pediatrica.**

*Aspects regarding formulation of products administered in pediatric therapy*

**13. Tehnici de promovare in industria farmaceutica.**

*Techniques for promotion in the pharmaceutical industry*

**14. Capsule gelatinoase-formulare si tehnologii de obtinere.**

*Softgel – formulation and obtaining technologies*

**15. Sisteme orale de eliberare a substantelor medicamentoase.**

*Oral system for releasing medical substances*

**16. Sisteme de eliberare oculara a substantelor medicamentoase.**

*Systems for ocular application*

**17. Forme farmaceutice cu administrare intravaginala.**

*Pharmaceutical formulations for vaginal administration*

**18. Metode moderne in controlul calitatii medicamentelor.**

*Modern methods in quality control of medicines*

**19. Controlul calitatii preparatelor de origine vegetala.**

*Quality control for formulations of vegetal origin*

**20. Controlul calitatii formelor farmaceutice.**

*Quality control of pharmaceutical formulations*

**21. Controlul calitatii preparatelor de uz stomatologic.**

*Quality control for dental products*

**22. Calitatea medicamentului.**

*Quality of drugs*

**23. Aspecte noi privind analizele de laborator clinic. Notiuni de nutritie si dietoterapie.**

*New aspects regarding clinical lab analysis. Notions of nutrition and dietotherapy*

**24. Administratie sanitara-Management si Marketing farmaceutic.**

*Health administration – Pharmaceutical management and marketing*

**25. Politica nationala a medicamentului. Legislatie nationala, legislatie europeana.**

*National medicine policy. National and European legislation*

**26. Economie farmaceutica--Management si Marketing in domeniul farmaceutic.**

*Pharmaceutical economy – Pharmaceutical management and marketing*

**27. Etica si deontologie farmaceutica in context european.**

*Ethics and deontology in European context.*

**28. Consultatia minimala in farmacia de comunitate.**

*Minimal consultation in community pharmacy*

**29. Atestat de Farmacologie Experimentală. – atestat de studii complementare**

*Experimental Pharmacology – complementary studies*

**30. Metaloporfirine in terapia fotodinamica a cancerului.**

*Metaporphirines in the photodynamic cancer therapy*

**31. Mecanisme biochimice implicate in actiunea medicamentelor.**

*Biochemical mechanisms involved in the drugs action*

**33. Medicamente biologice in practica farmaceutica.**

*Biological medicines in pharmaceutical practice*

**34. Interferonii si interleukinele.**

*Interferons and interleukines*

**35. Medicamente obtinute prin inginerie genetica.**

*Medicines obtained by genetic engineering*

**36. Toxicologia medicamentelor.**

*Toxicology for medicines*

**37. Metode rapide pentru diagnosticarea intoxicatiilor acute medicamentoase.**

*Rapid methods for diagnosis of acute intoxications*

**38. Toxicologia impuritatilor aerului. Ecotoxicologie.**

*Toxicology of impurities in the air. Ecotoxicology*

**39. Controlul toxicologic al alimentelor.**

*Food toxicology control*

**40. Metode screening pentru detectarea in materiale biologice si corpuri delictive a substantelor care induc dependenta (medicamente, stupefiante, halucinogene).**

*Screening methods for detecting substances that induce addiction in biological materials and material evidence*

**41. Evaluari comparative ale actiunii stupefiantelor si halucinogenelor.**

*Comparative evaluation of the drugs and hallucinogenic action*

**42. Metode de separare electroforetice. Aplicatii in controlul medicamentului.**

*Electroforetic methods of separation. Applications in medicines control*

**43. Metode spectrofotometrice in vizibil si UV aplicate la controlul calitatii formelor**



farmaceutice.

*Spectrophotometric methods in visible and UV applied to quality control of pharmaceutical formulations*

**44. Asigurarea calitatii in laboratorul de control fizico-chimic al medicamentului.**

*Quality assurance in the physico-chemical medicine control laboratory*

**45. Spectrometria de absorbtie si emisie atomica- metoda de investigare a puritatii substantelor si formelor farmaceutice.**

*Atomic absorption and emission spectrometry – method for investigating the purity of the substances and pharmaceutical formulations*

**46. Stabilitatea formelor farmaceutice – parametru de apreciere a calitatii medicamentelor.**

*Stability of pharmaceutical formulations – parameter for evaluating the quality of the medicines*

**47. Cromatografia de lichide de inalta performanta – metoda de electie in determinarea puritatii si dozarea substantelor farmaceutice.**

*HPLC – election method in determining purity and dosage of pharmaceutical substances*

**48. Validarea metodelor analitice.**

*Validation of analytical methods*

**49. Biofarmacia preparatelor orale.**

*Biopharmacy of oral formulation*

**50. Biofarmacia preparatelor dermice.**

*Biopharmacy of dermic formulations*

**51. Biofarmacia preparatelor oftalmice.**

*Biopharmacy of eye formulations*

**52. Medicamente anxiolitice.**

*Anxiolytic drugs*

**53. Medicamente antipsihotice.**

*Antipsychotic drugs*

**54. Medicamente hipnotice-sedative.**

*Sedative-hypnotics drugs*

**55. Medicamente antihipertensive.**

*Medicines for high blood pressure*

**56. Medicamente de uz veterinar.**

*Veterinary medicines*

**57. Substante psihotrope de natura vegetala si animala.**

*Psychotropic substances vegetal and animal*

**58. Ciuperci terapeutice.**

*Therapeutic mushrooms*

**59. Actualitati privind analiza si controlul preparatelor farmaceutice de natura vegetala.**

*News regarding the analysis and control of pharmaceutical formulations*

**60. Fitoterapia afectiunilor gastro-intestinale.**

*Phytotherapy of gastro-intestinal diseases*

**61. Modalitati de standardizare a productiei de medicamente.**

*Ways of standardization medicine production*

**62. Combaterea alcoolismului.**

*Alcoholism treatment*

**63. Analiza compusilor organici prin metode cromatografice si spectrale.**

*Analysis of organic compounds using chromatography and spectral methods*

**64. Bazele teoretice ale chimiei bioorganice.**

*Theoretical basis of bio-organic chemistry*

**65. Noi aspecte privind rezistenta microbiana. Mecanisme de rezistenta, dificultati in testarea rezistentei bacteriene, implicatii clinico – epidemiologice. Masuri de prevenire si control a transmiterii bacteriilor cu inalta rezistenta la antibiotice.**

*New aspects regarding microbial resistance. Mechanisms, difficulties in testing clinical-epidemiological implications. Measures of prevention and control of transmission of bacterias with high resistance to antibiotics*

**66. Bioterrorismul si armele biologice. Managementul crizei biologice, profilaxie, scheme moderne de tratament.**

*Bioterrorism and biological weapons. Biological crisis management, modern treatment schemes*

**67. Laboratoarele de microbiologie securizate; laboratoarele de nivel 1, 2, 3, 4; biobazele 1, 2, 3, 4; norme de protectie a muncii in laborator. Bioprotectie, biosiguranta, biosecuritate.**

*Safety microbiology labs: level 1,2,3,4 labs bio-bases 1,2,3,4, regulations for work protection in the lab. Bio-protection, bio-safety, bio-security*

**68. Actualitati in micologia medicala. Diagnosticul de laborator al candidozelor; cand si cum testam sensibilitatea Candidei spp? Cum interpreteaza clinicianul rezultatul eliberat de laborator?**

*News in medical mycology. Diagnostic of candidiasis in the lab; when and how we test sensibility for Candida spp. ? How does the clinician interpret the result from the laboratory ?*



**PHARMINE**  
*Pharmacy Education  
in Europe*



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**PHARMINE**

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