Education and Culture DG
Lifelong Learning Programme

PHARMINE
Pharmacy Education in Europe

The PHARMINE survey of European higher education institutions delivering pharmacy education & training
V1

If you encounter any problems when filling out this form please contact the leader of PHARMINE work program WP7: jeffrey.atkinson@orange.fr

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PHARMINE
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Website: www.pharmine.org

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Production of the PHARMINE survey V1.

The "*PHARMINE survey of European higher education institutions delivering pharmacy education & training*" (referred to as the "PHARMINE survey") was produced by:

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The following persons tested a preliminary version of the PHARMINE survey and provided very useful comments:

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Updates.

The PHARMINE survey will be updated as further comments come in. If new questions arise from such comments and clarification, the correspondents in the different higher education institutions (HEIs) participating in this PHARMINE survey will be contacted for further information.

Jeffrey Atkinson,
Villers, France

Spring, 2009.

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Introduction.

PHARMINE

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

In the XXI century pharmacists will play an increasingly important role as partners in the efficient use of the health care resources (community and hospital pharmacists). They will also be major players in the development of the pharmaceutical industry (industrial pharmacists). Whilst abiding by the recommendations for the duration and course content for EU pharmacy education and training given in the directive 2005/36/EC on the recognition of professional qualifications, the PHARMINE consortium will examine the opportunities for the introduction of the principles of the Bologna declaration into pharmacy education and training with the aim of tuning the latter to the future needs in the three main areas of pharmaceutical expertise: community, hospital and industrial pharmacy.

The consortium will survey existing pharmacy curricula and attempts to adapt these to the Bologna process. The project runs from 1/10/2008 through 30/9/2010. A first survey of pharmacy HEIs was carried out by the EAFP in the 1990s (P. Bourlioux, Paris, EU TEMPUS project). In order to evaluate evolution since that time, this PHARMINE survey will follow the lines of the previous survey.

The form will be sent out to at least 1 HEI in each member state (MS) of the EU as well as to at least 1 HEI in other European countries.

Aims and objectives of WP7

The PHARMINE project has 7 work programmes (WP). The aims and objectives of WP7 are to produce a databank of pharmacy E&T leading to basic pharmacist qualifications and to qualifications required for specialist activities, in pharmacy HEIs of the EU.

Organisation

Data for the survey will be collected by electronic means. This can be backed up by telephone calls and/or by on-site visits. Participating HEIs should first read the following forms. Any difficulties that arise may be solved by contacting: jeffrey.atkinson@orange.fr. An on-site visit to the participating HEI can be arranged if required.

Milestones

The principal milestone will be the delivery of the data required for the production of a white paper, the publication of the first version of which is planned for the end of 2009.

Abbreviations

- B bachelor level (first 3 years study at an HEI following secondary school). This may be followed by a number, e.g. B1 = first year of bachelor studies
- D doctoral (Ph.D.) level. This will start after 5 years of study at an HEI (3 years B plus 2 years M)

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- EAFP European Association of Faculties of Pharmacy
- E&T education and training
- EC European Commission
- EU European Union
- HEI higher education institution
- LLL lifelong learning
- M master level (4th and 5th years of study at an HEI)
- MS member state
- PHARMINE Pharmacy Education in Europe
- R&D research and development
- S semester. This may be followed by a number, e.g. B1S1 = first semester of the first bachelor year

Filling out the form

You can fill in the form using MS WORD 97-2003 or a later version, or print out the PDF version and fill it in freehand. If you do use MS WORD, please do not alter the left-hand columns.

Data

In many sections you will be asked to provide numerical data or a "yes or no" reply to a specific question. In such cases you are provided with adequate space to add any comments you feel necessary. These are not limited in length as fields will automatically resize.

Dates.

The data provided should refer to 2007 or 2008. If data from an earlier period are given, please indicate dates.

Additional documents

You may find the documents regarding EC directive 2005/36/EC (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:255:0022:0142:EN:PDF) and the Bologna declaration (http://www.ond.vlaanderen.be/hogeronderwijs/bologna/about/) useful when filling out this form.

References

At the end of each chapter we would like you to add any bibliographic references that you consider helpful as well as a reference to the laws and edicts that govern professional pharmacy practice and/or pharmacy E&T in your country.

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Survey chapters

The document has 7 chapters:

1. Organization of the activities of pharmacists, professional bodies
2. Pharmacy HEIs, students and courses
3. Teaching and learning methods
4. Subject areas
5. Impact of the Bologna principles
6. Impact of EC directive 2005/36/EC
7. Quality assurance.

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Your details.

Please give the contact details for at least one person from your HEI. Considering the long-term running of the project it would be helpful in if a second name could be given. These persons will be the contacts for your HEI for the PHARMINE survey and they may be contacted in the case of updating (see above).

	First contact	Second contact
Name	Vice-dean Jouni Hirvonen	Head of Academic Administration Ulla Lehtonen
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Chapter 1. Organization of the activities of pharmacists, professional bodies

The data to be collected in this chapter is on the organization of the activities of pharmacists in your country, and on professional bodies. It represents the background pharmaceutical situation on a national level. You may consider contacting organisations or agencies outside of your HEI for help with this section. If you do so, could you please give references at the end of the chapter?

The PHARMINE survey is interested in the competences and roles of the pharmacist in individual European countries. Before filling in this chapter, you may like to consider the following.

The basic *competences* for a pharmacist are:

1. Conversance with professional aspects of pharmacy
2. Expertise in medicines
    a. R&D of active & safe medicines
    b. Use of medicines by patients
    c. Monitoring effects of treatment
3. Effective communication & management
4. Appreciation of professional & social role of pharmacist

The *roles* of a pharmacist in the healthcare system and elsewhere fall into the following broad categories:

1. Community pharmacy:
    a. Supplying prescription medicines
    b. Managing medicines for some ailments
    c. Giving advice on medicines
    d. Screening services
    e. Services to the housebound
    f. Services to nursing and care homes (medication reviews, advice on storage and administration of medicines)
    g. Other (please specify)
2. Hospital pharmacy:
    a. In wards or outpatient clinics
    b. Consultant in specialised clinical areas such as paediatrics or intensive care
    c. Part of multidisciplinary patient-care team
    d. Purchasing of drugs and medical material

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    e. Monitoring of drug use
    f. Unit-dose drug distribution
    g. Production of patient-specific medicines (e.g. cytotoxic preparations)
    h. Other (please specify)
3. Primary care and other healthcare services:
    a. Work in GP practices
    b. Advice to GPs on cost-effectiveness of prescribing, developing of practice formularies and patient-centred prescribing
    c. Drug use reviews
    d. Cholesterol monitoring
    e. Review medication of patients on complex drug regimen
    f. Other (please specify)
4. Industry:
    a. Synthesis and production of new chemical entities and drugs
    b. R&D – drugs
    c. R&D – health care products other than drugs
    d. Preclinical drug evaluation (safety and efficacy)
    e. Clinical drug evaluation (safety and efficacy)
    f. Marketing
    g. Distribution
    h. Medic al devices
    i. Cosmetology
    j. Drug evaluation and registration (governmental and industrial)
    k. Other (please specify)
5. Other areas:
    a. Journalism
    b. Forensics
    c. Armed forces
    d. Voluntary health organisations/non-governmental organisations
    e. Secondary school E&T (biology, clinical chemistry…)
    f. Universities
    g. National health services
    h. International health services
    i. Institutes of clinical review (e.g. NICE UK National institute for health and clinical excellence)
    j. Agricultural and veterinary pharmacy
    k. Other (please specify)

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Could you please give some indication of the numbers or percentages of pharmacists that graduate involved in the various functions and roles above?

Note that in this document a *pharmacist* is defined according to the EC directive 2005/36/EC (see above):

- E&T lasting at least 5 years
- At least 4 years full-time theoretical and practical training
- Traineeship of at least 6 months

If a person holding another type of qualification (e.g. prescriptionist, pharmacy technician, *préparateur en pharmacie*…) is involved in pharmacy practice in your country, could you please indicate:

- Their job titles
- The number of persons holding such a qualification
- Their qualifications:
    - Organisation providing and validating the E&T
    - Duration of studies
    - Subject areas
    - Traineeship
- Their competences
- Their roles

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	Y/N, number or %	If you wish to expand your answer, please add your comments below.
Community pharmacy		
Number of community pharmacists	Number: 816	In addition, all 590 pharmacy owners also are pharmacists
Number of community pharmacies	Number: 610+195	610 pharmacies and 195 subsidiary pharmacies - the same medicines and service are available also from subsidiary pharmacies
Competences and roles of community pharmacists		Pharmacist work as pharmacy owners, managers, responsible pharmacists, specialist pharmacist (may be specialized on multiple issues, for example to IT-systems): competences include administrative issues, customer service, medication review, marketing, education of pharmacy staff, multidisciplinary co-operation with other health care professionals
Is ownership of a community pharmacy limited to pharmacists?	Y/N: Y	
Are there rules governing the geographical distribution of community pharmacies?	Y/N: Y	
Are drugs and healthcare products available to the general public by channels other than pharmacies?	Y/N: Usually no	In Finland, medicines are sold to the public only from pharmacies, with the exception that NRT (nicotine reduction) products can be available also in grocery shops. In general some medicines are given without charge in specific cases from hospital or health clinics. Veterinary drugs are available also from vetenarians.
Are persons other than pharmacists involved in community practice?	Y/N: Y	

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Their titles and number(s)	Number: 3839	Farmaseutti = B. Sc. (pharm). (Additionally, there may also be technical staff working in community pharmacies. However, only pharmacists with either B.Sc. or M.Sc. degree are allowed to dispense/sell medicines and counsel patients on medicines.)
Their qualifications		
Organisation providing and validating the E&T		Three universities provide pharmacy education in Finland. University of Helsinki and University of Kuopio provide both B.Sc. And M.Sc. degrees and Åbo Academi University only B. Sc. Degrees
Duration of studies (years)	Number: 3 B.Sc. / 5 M. Sc.	
Subject areas		Similar to pharmacist with M.Sc. degree. However, main tasks in community pharmacies are typically customer service and patient counselling.
Competences and roles		Similar to pharmacists, but does not involve pharmacy ownership, leading and management or in-depth scientific issues. Main focus in customer service and patient counselling.
Are drugs and healthcare products available to the general public by channels other than pharmacies?	Y/N: N	
Are drugs and healthcare products available to the general public by channels other than pharmacies?	Y/N: N	
Hospital pharmacy		
Does such a function exist?	Y/N: Y	
Number of hospital pharmacists	Number: 545	470 (Bachelor of pharmacy) + 75 (Master of pharmacy)
Number of hospital pharmacies	Number: about 224	There are 24 hospital pharmacies which are in central hospitals and about 200 medicine centres which are in other hospitals or healthcare centres.

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Competences and roles of hospital pharmacists	[redacted]	B. Sc. and M. Sc.. Hospital pharmacists used to have logistic role in hospitals and healthcare centres. The role is now starting to change and some pharmacists are working in the wards. We don't have clinical pharmacy services yet because there is no education for that. Hopefully we will have a chance to start new post graduate educational program in year 2010 for hospital pharmacists so they will have stronger competencies to work as clinical specialists. The under graduate studies are concentrated to primary care pharmacy which makes it difficult to have competencies that are needed in hospitals.
Pharmaceutical and related industries		
Number of companies with production, R&D and distribution	Number: 4	
Number of companies with production only	Number: 3	
Number of companies with distribution only	Number: 2	
Number of companies producing generic drugs only	Number: 0	
Industrial pharmacy		
Number of pharmacists working in industry	Number: 300-400?	
Competences and roles of industrial pharmacists	[redacted]	B. Sc. and M. Sc.
Other sectors		
Number of pharmacists working in other sectors	Number: A) 160	This information is based on the report by Akava - Confederation of Unions for Professional and

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	B) 60 C) 100 Altogether: 320	Managerial Staff in Finland in 2008. Available online (in Finnish): http://www.akava.fi/files/771/Akavalaiset_tyomarkkinat_2008.pdf
Sectors in which pharmacists are employed		A) Academic sector, e.g. pharmacists working in Universities and research organizations B) Administration, e.g. pharmacists working in Finnish national authorities (National Agency of Medicines, Ministry of Social Affairs and Health, National Insurance Institution) C) Other/Un-specified
Competences and roles of pharmacists employed in other sectors		A) Teaching, research, administration, management and leadership B) Varying roles and competencies: specialist pharmacists (pharmacists specialized in some specific issues for example marketing authorizations, pricing and re-imbursements of medical products, IT-issues such as e-prescriptions and databases, medicines information), researchers, managers
Roles of professional associations		
Registration of pharmacists	Y/N: Y	Issued by Valvira (National supervisory authority for Welfare and Health)
Creation of community pharmacies and control of territorial distribution	Y/N: Y	Issued by Lääkelaitos (National Agency of Medicines)
Ethical and other aspects of professional conduct	Y/N: Y	There is an advisory board of ethical issues in pharmacies in co-operation with SAL (Pharmacy Owners' Associaton) and SFL (Finnish Pharmacists' Association). Additionally, there exists national Ethical code of conduct supervised by the above mentioned organizations. In order to strengthen the role of community pharmacies in health care and to support the professional

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		development, the Association of Finnish Pharmacist established a national strategy in 1997 that concerned pharmacy services and pharmacy role in health care (The Association of Finnish Pharmacies 1997). This strategy highlighted the importance of medication counseling in community pharmacies: whenever medicines are dispensed, also information should be provided. National long-term programs focusing on chronic diseases (asthma, diabetes, heart diseases) have been organized to encourage local co-operation between pharmacies and other health care professionals and to develop the competency and counseling skills of pharmacy staff.
Quality assurance and validation of HEI courses for pharmacists	Y/N: Y	The universities providing pharmacy education have their own quality handbooks and quality assurance procedures. In the University of Helsinki, for example, feedback is collected from students and both internal and external / international audits are made regularly.
Other (please specifiy)		

References	
References to texts and articles of national law	
Bibliographic references (EU, national, international)	

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Chapter 2. Pharmacy HEIs, students and courses

In this section we would like to gather information on HEIs, their status (public or private), and their organisation. We would also like to have information on staff and student numbers, entry requirements, and fees.

We would also like you to indicate past and future changes in pharmacy E&T in your country.

We would like information at both a national level and at the level of your particular HEI. We are interested in whether your HEI is typical of those in the country and if not how HEIs differ.

We would like information on both the common curriculum (both basic and advance) and on any specialized courses (community, hospital, industry, other) that you may offer in your HEI.

Under "teaching staff" we would like to provide details on:

- Professors/full professors/chairs
- Associate professors/assistant professors/lecturers
- Demonstrators/assistants/Ph. D. student teachers

Note that "international" in the context of this chapter refers to staff and students who are present at an HEI for more than 6 months. Shorter term exchange programmes will be dealt with in chapter 5.

"Advanced entry" refers to entry into a course that leads to a qualification as a pharmacy graduate, at a stage beyond the beginning of S1 of B1, following secondary school. This excludes Ph.D. and other postgraduate/post-registration courses. Please give the level in the "Sx of Bx" form, e.g. S2 of B2 = beginning the second semester of the second bachelor year.

If "fees per year" vary from one year to another, please indicate this.

Note that "length of course" refers to the number of years between the end of secondary school education and registration as a pharmacist and/or the start of a career as a pharmaceutical professional (e.g. in industry).

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	Y/N, number or %	If you wish to expand your answer, please add your comments below.
Total number of HEIs in your country	Number: 3	In total, there are 20 Universities in Finland.
Public	Number: 3	
Private	Number: 0	
Organisation of HEIs		
Independent faculty	Y/N: Y	University of Helsinki, Faculty of Pharmacy University of Kuopio, Faculty of Parmacy
Attached to a science faculty	Y/N: Y	Åbo Akademi University, Faculty of Mathematics and Natural Sciences
Attached to a medical faculty	Y/N: N	
Other (please specify)	Y/N: N	The faculty structure of the University of Kuopio will change in 2010. The Faculty of Pharmacy will be merged with medical faculty and other institutions into a Faculty of Health
Do HEIs offer B + M degrees?	Y/N: Y	Universities of Helsinki and Kuopio
Do HEIs offer an M. Pharm. after a B degree in another HEI?	Y/N: Y	
Do HEIs offer a B. Pharm. followed by an M. Pharm. in the same HEI or elsewhere?	Y/N: Y	
On a national level		

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Teaching staff		
Number of teaching staff (nationals)	Number: ca. 130	
Number of international teaching staff (from EU MSs)	Number: less than 10	
Number of international teaching staff (non EU)	Number: less than 5	
Number professionals (pharmacists and others) from outside the HEIs, involved in E&T	Number: ca. 25	
Students		
Number of places at traditional entry (beginning of S1 of B1, following secondary school)	Number: 420	The numbers are rounded
Number of applicants for entry	Number: 1400	
Number of graduates that become registered/professional pharmacists.	Number: 100 M. Sc.	
Number of international students (from EU member states)	Number: 15	
Number of international students (non EU)	Number: 5	
Entry requirements (beginning of S1 of B1, following secondary school)		
Specific pharmacy-related, national	Y/N: Y	

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entrance examination		
Other form of entry requirement at a national level	Y/N: N	
Is there a national *numerus clausus*?	Y/N: Y	Each institution sets its individual numerus clausus.
Advanced entry		
At which level?	[redacted]	
What are the requirements?		
Specific requirements for international students (EU or non EU).		Language skills requirements for B. Sc. and M. Sc.
Fees per year		
For home students	Amount (€): 0	
For EU MS students	Amount (€): 0	
For non EU students	Amount (€): 0	
Length of course	**Number of years: 3 + 2**	
Specialization		

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Do HEIs provide specialized courses?	Y/N: Y	
In which years?	Years:	Both after completing the Bachelor's degree and the Master's degree
In which specialisation (industry, hospital…)?		Industrial Pharmacy, hospital pharmacy
What are the student numbers in each specialization?	Number: ca. 25	
Past and present changes in E&T		
Have there been any major changes since 1999?	Y/N: Y	Industrial pharmacy as a discipline in the University of Helsinki
Are any major changes envisaged before 2019?		Start of specialist education of hospital pharmacy in the University of Helsinki
At the level of your HEI		
Teaching staff		
Number of teaching staff (nationals)	Number: 100	Numbers are rounded
Number of international teaching staff (from EU MSs)	Number: 15	
Number of international teaching	Number: 5	

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staff (non EU)		
Number professionals (pharmacists and others) from outside the HEIs, involved in E&T	Number:	
Students		
Number of places at traditional entry (beginning of S1 of B1, following secondary school)	Number: 170 + 50	
Number of applicants for entry	Number: 360 + 360	
Number of graduates that become registered/professional pharmacists.	Number: 170 + 50	
Number of international students (from EU member states)	Number: 15	
Number of international students (non EU)	Number: 10	
Entry requirements (beginning of S1 of B1, following secondary school)		
Your HEI has a specific pharmacy-related entrance examination	Y/N: Y	
Advanced entry		
At which level?	[redacted]	
What are the requirements?		
Specific requirements for international students (EU or non		

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EU).	[redacted]	
Fees per year		
For home students	Amount (€): 0	
For EU MS students	Amount (€): 0	
For non EU students	Amount (€): 0	
Length of course	**Number of years: 3 + 2**	
Specialization		
Does your HEI provide specialized courses?	Y/N: Y	
In which years?	Years:	Both after completing the Bachelor's degree and the Master's degree
In which specialisation (industry, hospital…)?	[redacted]	Industrial pharmacy Hospital pharmacy in the future
What are the student numbers in each specialization?	Number: 8 + 20	The yearly intake of Bachelors is 8, there is no numerus clausus for the Masters
Past and present changes in E&T		
Have there been any major changes since 1999 at your HEI?	Y/N: Y	

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Are any major changes envisaged before 2019 at your HEI?	Y/N:	
Is your HEI typical of all HEIs in the country?	Y/N: Y	
If your HEI is not typical, how do HEIs differ (e.g. in terms of organisation, subject areas, specialization…)?		

References	
References to texts and articles of national law	
Bibliographic references (EU, national, international)	

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Chapter 3. Teaching and learning methods

In this section we would like to gather information on the student hours in each year for:

1. Each of 4 types of teaching and learning in HEIs
    a. Lectures
    b. Tutorials
    c. Practicals
    d. Independent project work (including field work)
2. Traineeship
3. Electives
    a. “choice”: teaching unit with a possibility to opt in or out (Y/N choice); choice has no impact on obtention of final diploma
    b. “optional” choice of subject amongst several

In the boxes for “student hours” you should give the average number of hours a given student will invest. In some cases such as electives the number of hours may be very variable. In this case you may wish to add a range of hours invested.

In your comments could you please state who validates courses, traineeship and electives?

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Student hours

Method	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
HEIs courses						
Lecture	310 hours per student	265	106	148	44	
Tutorial						
Practical	160	48	36	20	40	
Project work	103	56	75	45	15	
Traineeship						
Hospital						
Community		520 (= 13 weeks)	520 (= 13 weeks)			
Industrial (academic or industrial)						
Other (please specify)						
Electives						
Choice	30	26	76	32	138	

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Optional						

If you wish to expand your answer, please add your comments below.

	1	2	3	4	5	6
HEI courses						
Traineeship						
Electives						

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References	
References to texts and articles of national law	
Bibliographic references (EU, national, international)	

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Chapter 4. Subject areas

In this section we would like you to calculate the total number of hours per year spent in each of the following subject areas.

We have not tried to standardize exact subject titles as these are different in various countries and open to mistakes and misinterpretation in translation. Instead we would like you to calculate the numbers of hours spent studying 7 different subject areas.

These are the same subject areas as defined in the first EAFP/Boulioux survey (1994) with two exceptions. "Medicinal" - rather than "medicine" as in the Bourlioux document – is used for subject area 5. "Medicinal" refers to: *tending or used to cure disease or relieve pain.* It thus goes beyond "drugs" to therapy in a wider sense of the word. The other difference with the first survey is the inclusion in this PHARMINE survey of a chapter on generic subjects.

1. Subject area I: Chemical sciences "CHEMSCI"
    a. General, organic & inorganic chemistry
    b. Analytical chemistry
    c. Pharmaceutical chemistry /pharmacopeial analysis
    d. Medicinal physicochemistry / SAR / drug design

2. Subject area II: Physical and Mathematical Sciences "PHYSMATH"
    a. Physics
    b. Mathematics, pharmaceutical calculations
    c. Information technology, information technology applied to community pharmacy, information technology applied to national health-care
    d. Statistics
    e. Experimental design & analysis

3. Subject area III: Biological Sciences "BIOLSCI"
    a. Foundation biology
    b. Cell biology
    c. Botany
    d. Mycology
    e. Zoology
    f. Biochemistry
    g. Molecular biology
    h. Genetics

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4. Subject area IV: Pharmaceutical Technology “PHARMTECH”
    a. Galenic formulation / pharmaceutics
    b. Drug disposition and metabolism (ADME) / pharmacokinetics
    c. Novel drug delivery systems
    d. Drug design
    e. Pharmaceutical R&D
    f. Drug production
    g. Quality assurance in production
    h. Drug/new chemical entity registration and regularization
    i. Common technical document (quality (pharmaceutical), safety (safety pharmacology and toxicology) efficacy (preclinical and clinical studies))
    j. Ophthalmic preparations
    k. Medical gases
    l. Cosmetics
    m. Management strategy in industry
    n. Economics of the pharmaceutical industry and R&D

5. Subject area V: Medicinal and therapeutical sciences “MEDISCI”

    a. Human anatomy & physiology
    b. Medical terminology
    c. Pharmacology
    d. Pharmacognosy
    e. Pharmacotherapy / therapeutics
    f. Toxicology
    g. Pathology, histology
    h. Microbiology
    i. Nutrition, non-pharmacological treatment
    j. Hematology
    k. Immunology
    l. Parasitology
    m. Hygiene
    n. Emergency therapy
    o. Clinical chemistry / bioanalysis (of body fluids)
    p. Radiochemistry
    q. Dispensing process, drug prescription, prescription analysis (detection of adverse effects and drug interactions)
    r. Generic drugs

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s. Planning, running and interpretation of the data of clinical trials
t. Medical devices,
u. Orthopedics
v. OTC medicines, complementary therapy
w. At-home support and care
x. Skin illness and treatment
y. Homeopathy
z. Phytotherapy
aa. Drugs in veterinary medicine
bb. Pharmaceutical care, pharmaceutical therapy of illness and disease

6. Subject area VI: Law and social sciences "LAWSOC"
    a. Legislation, law relating to pharmacy
    b. Social sciences
    c. Forensic science
    d. Professional ethics
    e. Philosophy
    f. Economics, financial affairs, book keeping, economic planning and management
    g. Public health/health promotion
    h. Quality management
    i. Epidemiology of drug use (pharmaco-epidemiology)
    j. Economics of drug use (pharmaco-economics)
    k. History of pharmacy

7. Subject area VII: Generic competences "GENERIC"
    a. General knowledge
    b. Academic literacy
    c. Languages
    d. First aid
    e. Communication
    f. Management
    g. Practical skills

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Student hours

Subject area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
CHEMSCI	16 ETCS 248-260 h	5 ETCS 48 h		11 ETCS 134 h		
PHYSMATH	5 ETCS 36 h			4 ETCS 34 h		
BIOLSCI	4 ETCS 44 h					
PHARMTECH	8 ETCS 60 h	14 ETCS 260 h	1 ETCS 8 h	12 ETCS 150 h		
MEDISCI	14 ETCS 154 h	18 ETCS 118 h	14 ETCS 160 h			
LAWSOC	3 ETCS 30 h	4 ETCS 40 h	5 ETCS 42 h	13 ETCS 100 h		
GENERIC	9 ETCS 95 h	16 ETCS 540 h	26 ETCS 630 h	1 ETCS 15 h		

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If you wish to expand your answer, please add your comments below.

	1	2	3	4	5	6
CHEMSCI	**The hours calculated in every column, is the time scheduled for lectures, assignments and group works. The time student use for individual work is not calculated here. Students also have to make 18 ETCS of elective studies for BSc. These hours have not been calculated here, due to the hours spent for vary for every students and might not even be out of pharmaceutical subjects.**			**In the MSc degree (120 ETCS) the students have 50 ETCS general studies (of witch 9-16 ETCS are elective studies) and 70 ETCS major studies. The amount of hours spent in every subject area in major studies varies form student to student. Due to this it is hard to give any general amount of hours. In the 4 year studies are calculated only the 41 ETCS general studies.**		
PHYSMATH						
BIOLSCI						
PHARMTECH						
MEDISCI						
LAWSOC						
GENERIC						

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References	
References to texts and articles of national law	
Bibliographic references (EU, national, international)	

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Chapter 5. Impact of the Bologna principles

In this section we would like to know whether and how the principles outlined in the Bologna declaration (http://www.ond.vlaanderen.be/hogeronderwijs/bologna/about/) affect pharmacy E&T in your HEI:

1. Do you have easily readable and comparable degrees? Do you issue a Diploma Supplement?

2. Are courses divided into two main cycles: 3 year undergraduate (B) and graduate (M & D)? Please note that in the language of the Bologna declaration, "graduate" refers to a person who successfully finishes a B degree. We would like to know whether the degree awarded after such a bachelor, first cycle is relevant to the (European) labour market, *i.e.* whether there are job opportunities in the healthcare system of your country, or in any other area, for persons with a bachelor (B) degree obtained after 3 years of E&T. We would also like to know whether persons with a 3-year bachelor (B) degree from an HEI other than pharmacy (natural sciences, chemistry…) possibly in another country can enrol into the master (M) program and then go on to become registered pharmacists or pharmacy professionals.

3. Do you use the European system of credits (ECTS)? How are they used to promote student mobility? Does your HEI fully validate ECTSs obtained in another HEI in another European country? Can ECTS be acquired in a non-HEI context (traineeships…)? Are ECTS used in a global scheme (*i.e.* one including lifelong learning)?

4. Are efforts made to identify and remove obstacles to student and staff mobility (with language courses, additional resources (staff and finances))? Please add numbers for short-term (less than 6 months) "ERASMUS" exchange staff and students.

5. Is your HEI involved in any European co-operative program in quality assurance with attempts to develop comparable criteria and methodologies?

6. In your HEI what are the European dimensions in higher education regarding curriculum development, general inter-institutional co-operation and integrated programmes of study, training and research?

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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	**Y**	We have a 3 year Bachelor and a 2 year Master programme according to the Bologna Agreement. Each graduating student receives a diploma supplement.
2. Two main cycles (B and M) <u>with entry and exit at B level</u>	Y	Entrance is permitted each year for 140 students (B.Sc.) and 55 students (M.Sc.). Bachelors graduate after 3 years and Masters after 5. It is possible for a person with B.Sc. (Pharm.) to gain entrance in the M.Sc. (Pharm.) programme if passing an entrance exam. In theory persons with B.Sc. in other areas, for instance chemistry, can gain entrance to the M.Sc. (Pharm.) programme, but they cannot become licensed Masters in Pharmacy. Bachelors in Pharmacy are employed in Finland and Sweden in community pharmacies, hospital pharmacies, industry etc. They constitute the main work force in Finnish community pharmacies. In other parts of Europe the degree is not recognized.
3. ECTS system of credits / links to LLL	Y	All our courses are built according to the ECTS system based on a yearly workload of 1600 h. We accept ECTSs obtained in other European countries to the full. Our students get ECTS-points for the compulsory traineeship included in their degree. Since the traineeship is 6 months, the points given are 30, i.e. 5/month. All HEI in Finland use ECTS-based credit points since 2005.
4. Obstacles to mobility	Y	The biggest obstacle to student mobility is the strictly organized curriculum, which does not easily allow students to move. If they are ready to miss and thus prolong their studies by six months to one year, mobility becomes much easier. This means, that most of our exchange students select to their Master's project abroad, because at that point they don't have so many compulsory courses.
5. European QA	N	

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6. European dimension		
ERASMUS staff exchange to your HEI from elsewhere	Number of staff months:	
ERASMUS staff exchange from your HEI to other HEIs	Number of staff months:	
ERASMUS student exchange to your HEI from elsewhere	Number of student months:	Ca. 100
ERASMUS student exchange from your HEI to other HEIs	Number of student months:	Ca. 50

References	
References to texts and articles of national law	Valtioneuvoston asetus yliopiston tutkinnoista 794/2004 (Government Decree on University Degrees 794/2004) Laki terveydenhuollon ammattihenkilöistä 559/1994 (Act on Health Care Professionals 559/1994) Asetus terveydenhuollon ammattihenkilöistä 104/2008 (Decree on Health Care Professionals 104/2008)
Bibliographic references (EU, national, international)	EU Directive 85/432/ETY

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

In this section we would like to know how EC directive 2005/36/EC (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:255:0022:0142:EN:PDF) has affected/affects pharmacy E&T in your HEI.

We would like information on the impact of 3 main elements of directive 2005/36/EC on:

- Course length
- Course content
- Traineeship

We would also like you to consider the subjects given in annex V.6. Does this list have any impact on what is taught? Do you think that this list is useful? Do you think that this list should be modified?

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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>…"	This statement does not apply to the 1st phase of Bologna process, B. Sc. degree in Pharmacy. This statement is obviously taken into consideration when the curriculum for the M.Sc. (Pharm.) degree was developed according to the Bologna agreement. The new Master curriculum was taken in use in autumn 2006.	
"…<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;"	Master students study 4.5 years at the university, so this requirement is fulfilled.	
"…<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."	Both Bachelor and Master students perform the six-month traineeship. At least three months have to be in a community pharmacy and the remaining three months can be performed in a community or hospital pharmacy.	The first three months of traineeship is performed in the second study year and the second three months during the third year.
"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>."	This point was object of intensive discussion during the degree reform according to Bologna and from the university point of view we need to place emphasis on the theoretical knowledge in order to prepare the students for further studies (Ph.D.).	
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**

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		would you change it?
V.6. PHARMACIST **5.6.1. *Course of training for pharmacists*** **Plant and animal biology / Physics / General and inorganic chemistry / Organic chemistry / Analytical chemistry / Pharmaceutical chemistry, including analysis of medicinal products / General and applied biochemistry (medical) / Anatomy and physiology; medical terminology / Microbiology / Pharmacology and pharmacotherapy / Pharmaceutical technology / Toxicology / Pharmacognosy / Legislation and, where appropriate, professional ethics.**	All these aspects are taken into consideration and all the subjects mentioned are taught.	

References	
References to texts and articles of national law	Valtioneuvoston asetus yliopiston tutkinnoista 794/2004 (Government Decree on University Degrees 794/2004) Laki terveydenhuollon ammattihenkilöistä 559/1994 (Act on Health Care Professionals 559/1994) Asetus terveydenhuollon ammattihenkilöistä 104/2008 (Decree on Health Care Professionals 104/2008)
Bibliographic references (EU, national, international)	

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Chapter 7. Quality assurance.

This part of the questionnaire is based upon the US Accreditation Council for Pharmacy Education (ACPE) 2007 standards and is aimed at obtaining information on the self perception that each Faculty has of its own Quality Assurance System whether non-existing or existing and the extent of its implementation.

If a QA system is in place, please attach supporting documentation for each of the questions referencing under comments the part (page/chapter) of the documentation pertaining to each of the questions.

Further questions should be addressed to Prof. J. Morais, Lisbon (jagmorais@ff.ul.pt) with a copy to J. Atkinson.

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QUALITY ASSURANCE – 2009 (Based on ACPE – Standards 2007)

	QUESTIONS	Y/ N	COMMENTS
Quality Assurance (QA)	Does your High Education Institution (HEI) have a Quality Assurance (QA) system?	yes	Audition in University of Helsinki in 2007, successful
	Is the QA system up-to-date and implemented?	yes	
	Please indicate whether your system is (a) Internal to the HEI (b) External to the HEI (c) A combination of both	(a) ☐ (b) ☐ (c) X	The operations manual of the Faculty includes links to the university operations manual on matters concerning general issues such as rules and regulations.
Mission, Planning and Evaluation			
1. Mission	Has your Faculty a published statement of its mission in all of the following topics: education, research, service and pharmacy practice?	yes	
2. Strategic Plan	Is your Faculty in the process of or has it developed, implemented and regularly reviewed a strategic plan in order to achieve the mission and goals?	yes	
3. Evaluation of Achievement of Mission and Goals	Does your Faculty have an official document (such as an Evaluation Plan) that comprehensively describes how the Faculty will continuously and systematically evaluate all aspects of the Faculty, including the achievement of its mission and goals?	no	Under construction. Evaluation plan of the research is almost done.
Organization and administration			
4. Institutional Accreditation	Is your Faculty accredited by a national / international educational or professional body?	yes	
5. Faculty and University Relationship	Is your Faculty an autonomous unit within the university structure?	yes	
6. Faculty and Administrative Relationship	Does your Faculty have, within the university structure, autonomous administrative services related with academic, research and other scholarly activities?	yes	
7. Faculty Organization and Governance	Does the structure, organization and staffing of the Faculty foster the development of organizational units, allow appropriate allocation of resources and facilitate the accomplishment of the Faculty's mission and goals?	yes	
8. Dean Qualifications and Responsibilities	Is your Dean a chief administrative and academic officer, having direct access to the university Rector or other university officials delegated, with final responsibility for the college or Faculty?	yes	
Curriculum			

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9. Goal of Curriculum	Does the Faculty's program curriculum prepare pharmacists for any pracice setting by developing in graduates knowledge that meets the criteria of good science, professional skills, attitudes and values, and the ability to integrate and apply learning to current and future practice	yes	
10. Curricular Development	Does your curriculum define the expected outcomes and is it developed under the collective responsibility of the academic teaching staff with attention to sequencing and integration of contents and selection of teaching methods and assessments?	yes	
11. Teaching and Learning Methods	Does your Faculty use and integrate teaching and learning methods that have been showed through curricular assessments to produce graduates who became competent pharmacists with critical thinking, problem-solving and self-directed lifelong learning skills?	yes	
12. Professional Competencies	Are your graduates able to promote health, provide patient care in cooperation with all partners based upon good therapeutic principles and evidence-based data that may impact therapeutic outcomes, manage and use resources of the healthcare system, and effectively provide, assess and coordinate medication distribution?	yes	
13. Knowledge, Skills, Attitudes and Values	Does your curriculum have all the following areas: fundamental hard sciences, biomedical sciences, pharmaceutical sciences, social/behavioural/ administrative sciences and clinical sciences? Do graduates possess the required entry-level knowledge, skills, attitudes and values to practice pharmacy independently by graduation, including the training period as per Dir 2005/36?	yes yes	
14. Practice Experiences	Does your program curriculum include at least 6 months of training practice in community/hospital pharmacy? Are the practice experiences within the curriculum appropriately structured and sequenced to integrate, apply, reinforce and advance the knowledge, skills, attitudes and values developed through other components of the curriculum?	yes yes	

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15. Assessment and evaluation of student learning and curricular effectiveness	Does your Faculty use assessment measures throughout the program to evaluate the attainment of the desired educational outcomes and professional competencies, to improve student learning and to improve the curriculum and its delivery.	yes	
Students			
16. Organization of student services	Does your Faculty have organizational elements devoted to student services e.g. a confidential system of student records; and financial, academic and social support services for students?	yes	
17. Admission criteria, policies and procedures	Does your Faculty produce and make available to students criteria, policies, and procedures for admission to the degree program? Does your faculty have the final responsibility for selection and enrollment (numbers) of students?	yes yes	
18. Transfer of credits	Does your Faculty produce transfer credits (ECTS) based on rational procedures and defensible assessments, and makes that information available to students?	yes	
19. Progression of students	Does your Faculty produce and make available to students criteria, policies and procedures for academic progression?	yes	
20. Students complaints policies	Does your Faculty produce and make available to students a complaints policy that includes elements related to student rights and appeal mechanisms?	yes	
21. Program information	Does your Faculty produce and make available to students a complete and accurate description of the degree program, including its current accreditation status (if applicable)?	yes	
22. Student representation and perspectives	Does your Faculty involve student representatives on appropriate program committees, such as accreditation self-studies, assessment, curriculum and strategic planning?	yes	
23. Professional behaviour and harmonious relationship	Does your Faculty provide an environment and culture that promotes professional behaviour and harmonious relationships among students, staff and administrators?	yes	

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Faculty Staff			
24. Faculty staff quantitative factors	Does your Faculty have a sufficient number of qualified full-time staff to effectively deliver and evaluate the degree program, while providing adequate time for staff development, research and other activities?	yes	
25. Faculty staff qualitative factors	Does your Faculty have qualified staff with the required professional and academic expertise and who, individually and collectively, are committed to its mission and goals?	yes	
26. Faculty staff continuing professional development and performance review	Does your Faculty have effective programs for performance review and continuing professional development for full-time, part-time, and voluntary faculty staff, consistent with their responsibilities in the program?	yes	
Facilities and Resources			
27. Physical facilities	Does your Faculty have adequate and appropriate physical facilities and equipment to achieve its mission and goals?	yes	
28. Practice facilities	Does your Faculty have criteria for the selection of its practice sites and work collaboratively with those sites to advance patient care services provided there?	yes	
29. Library and educational resources	Does your Faculty ensure access for all staff and students to a library and other educational resources, sufficient to support the degree program and to provide for research and other activities in accordance with its mission and goals?	yes	
30. Financial resources	Does your Faculty have the financial resources necessary to accomplish its mission and goals?	yes	There is never enough money to accomplish everything

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31. Students complaints policies	Does your Faculty produce and make available to students a complaints policy that includes written documents related to student rights and appeal mechanisms?	□ □	Under construction
32. Program information	Does your Faculty produces and makes available to students a complete and accurate description of the degree program, including its current accreditation status?	yes	
33. Student representation and perspectives	Does your Faculty involve student representatives on appropriate program committees, such as accreditation self-studies and planning activities?	yes	
34. Professional behavior and harmonious relationship	Does your Faculty provide an environment and culture that promotes professional behavior and harmonious relationships among students, staff and administrators?	yes	
Faculty Staff			
35. Faculty staff quantitative factors	Has your Faculty a sufficient number of qualified full-time staff to effectively deliver and evaluate the degree program, while providing adequate time for staff development, research and other activities?	yes	
36. Faculty staff qualitative factors	Has your Faculty qualified staffs that, individually and collectively, are committed to its mission and goals?	yes	
37. Faculty staff continuing professional development and performance review	Has your Faculty an effective continuing professional development program for full-time, part-time, and voluntary faculty staff, consistent with their responsibilities?	yes	At least to some extent

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Facilities and Resources			
38. Physical facilities	Have your Faculty adequate and appropriate physical facilities to achieve its mission and goals?	yes	
39. Practice facilities	Does your Faculty provide patient-care services either of its practice sites or collaboratively?	no	
40. Library and educational resources	Does your Faculty ensure access for all staff and students to a library and other educational resources, sufficient to support the degree program and to provide for research and other activities in accordance with its mission and goals?	yes	
41. Financial resources	Does your Faculty have the financial resources necessary to accomplish its mission and goals?	yes	

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