

Pharmacy education & training in

# ESTONIA

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://www.pharmine.org/losse\\_paginas/Country\\_Profiles/](http://www.pharmine.org/losse_paginas/Country_Profiles/) )

The “PHARMINE survey of European higher education institutions delivering pharmacy education & training – ESTONIA” was produced by:

Jeffrey ATKINSON  
 Emeritus professor Lorraine University  
 PHARMINE Executive director  
 Pharmacolor Consultants Nancy  
 12 rue de Versigny  
 54600 Villers  
 France.  
[jeffrey.atkinson@univ-lorraine.fr](mailto:jeffrey.atkinson@univ-lorraine.fr)  
[www.pharmine.org](http://www.pharmine.org)

Peep VESKI  
 Dean  
 Department of Pharmacy  
 University of Tartu  
 50411 Tartu  
 Estonia  
[peep.veski@ut.ee](mailto:peep.veski@ut.ee)  
[www.med.ut.ee/farmaatsia/](http://www.med.ut.ee/farmaatsia/)

with the help of:

Daisy VOLMER  
 Lecturer  
 Department of Pharmacy  
 University of Tartu  
 50411 Tartu  
 Estonia  
[daisy.volmer@ut.ee](mailto:daisy.volmer@ut.ee)  
[www.med.ut.ee/farmaatsia/](http://www.med.ut.ee/farmaatsia/)

Lea NOEL  
 PHARMINE project assistant  
 Dept.MICH  
 Vrije Universiteit Brussel  
 Laarbeeklaan 103  
 B 1090 Brussel  
 Belgium  
[lea.noel@vub.ac.be](mailto:lea.noel@vub.ac.be)  
[www.vub.ac.be/MICH](http://www.vub.ac.be/MICH)

### Contacts in Estonia.

	First contact	Second contact
Name	Peep Veski	Daisy Volmer
HEI	Department of Pharmacy, Faculty of Medicine, University of Tartu	
Street	1 Nooruse Str.	
City, zip	Tartu	
Country	Estonia	
Telephone	+3727375288	+3727375298
Fax	+3727375289	
e-mail	peep.veski@ut.ee	daisy.volmer@ut.ee
Website	www.med.ut.ee/farmaatsia	

Validation of the first version, 2010:

# EESTI APTEEKRITE LIIT

ESTONIAN PHARMACISTS' ASSOCIATION

30.04.2010 nr 24

The document “**Pharmacy education & training in ESTONIA**” was validated by the Estonian Pharmacists' Association, at their General Assembly on the March 29<sup>th</sup> 2010 in Tallinn.

*/digitally prescribed/*

Kaidi Sarv

Head Pharmacist

Endla str31  
10122 Tallinn  
ESTONIA

Phone +372 662 0323  
Fax +372 662 1054

[info@apteekritelit.ee](mailto:info@apteekritelit.ee)  
[www.apteekritelit.ee](http://www.apteekritelit.ee)

## **Index**

	<b>Page</b>
<b>Summary</b>	<b>6</b>
<b>Introduction</b>	<b>7</b>
<b>Chapter 1. Organization of the activities of pharmacists, professional bodies</b>	<b>9</b>
<b>Chapter 2. Pharmacy HEIs, students and courses</b>	<b>14</b>
<b>Chapter 3. Teaching and learning methods</b>	<b>17</b>
<b>Chapter 4. Subject areas</b>	<b>19</b>
<b>Chapter 5. Impact of the Bologna principles</b>	<b>20</b>
<b>Chapter 6. Impact of EC directive 2005/36/EC</b>	<b>22</b>
<b>The Estonian scheme for pharmacy education and training.</b>	<b>23</b>

## Summary.

Community pharmacies in Estonia provide mainly traditional services (e.g. sale and counselling of Rx and OTC medicines). However, some of the diagnostic services (e.g. taking blood pressure) are available.

Pharmacists (in Estonian *proviisor*) study at University of Tartu for five years and graduate as Master of Pharmacy (MSc Pharm). Pharmacists can own and manage community pharmacies, work as responsible pharmacists in both community and hospital pharmacy. In Estonia ownership of community pharmacies is not restricted to the pharmacy profession and the majority of pharmacies have joined different pharmacy chains.

Assistant pharmacists (in Estonian *farmatseut*) study at Tallinn Health College for 3 years and after graduation are mainly employed in community pharmacies. Assistant pharmacists cannot work as pharmacy managers.

The University of Tartu is the only university in Estonia providing higher education in pharmacy. The pharmacy curriculum is organized as B+M integrated studies with no possibility of graduation with a bachelor degree after three years of studies. Curriculum is course-based and after several changes (in 1997, 2003, 2007) it is more focused on medical, clinical and pharmaceutical technology subjects supported by basic and applied sciences, drug analysis, pharmacognosy and social sciences. Currently traineeship is provided after the second year and during the 6 months practice at community and hospital pharmacy during the fifth year of studies. Currently no specialization courses are available at the University of Tartu.

## Introduction.

### Statistics for Estonia.

Total population: 1,340,000

Gross national income per capita (PPP international \$): 18,090

Life expectancy at birth m/f (years): 67/79

Healthy life expectancy at birth m/f (years, 2003): 59/69

Probability of dying under five (per 1 000 live births): 6

Probability of dying between 15 and 60 years m/f (per 1 000 population): 279/96

Total expenditure on health per capita (Intl \$, 2006): 989

Total expenditure on health as % of GDP (2006): 5.0

Detailed information is available at: World Health Statistics 2009:

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

### Highlights on health in Estonia.

Since regaining independence in 1991, the Estonian health system has undergone two major shifts: first, from a centralised, state-controlled system to a decentralised one, and second, from a system funded by the state budget to one funded through social health insurance (SHI) contributions. At the same time, there has been a growing emphasis on primary care and public health. Healthcare in Estonia is largely publicly financed. Since 1992, earmarked payroll taxes have been the main source of health care financing, accounting for approximately 76% of total expenditure on healthcare in recent years. Specific groups are covered by contributions from the state budget, including individuals on parental leave with small children, registered unemployed people (eligible for cover for up to nine months) and those caring for disabled people. Other groups, including children, retired people, those receiving a disability pension and students, are eligible for cover without any contribution, from either themselves or the State. Expenditure for the reimbursement of pharmaceuticals in out-patient care is part of the overall healthcare expenditure within the budget of the Estonian Health Insurance Fund (EHIF) but may not exceed 20% of healthcare expenditure according to the present Health Insurance Act (since October, 2002). Pharmaceuticals for in-patient care are fully reimbursed for patients, through the healthcare services.

An important characteristic of the Estonian reimbursement system is that pharmaceuticals are reimbursed on the basis of the positive reimbursement list. The criteria for inclusion of pharmaceuticals in this list also take into account the cost-effectiveness of the product and rational expenditure is a binding rule. The pharmaco-economic

aspects of reimbursement are constantly assessed according to the Baltic Guidelines on Economic Evaluation of Pharmaceuticals, which were approved by Estonia, Latvia and Lithuania in September 2002.

Several measures have been applied for the control of out-patient pharmaceutical expenditure (PE) in Estonia. First, a diagnosis-based reimbursement system of pharmaceuticals (with the current reimbursement categories 100% and 75% (or 90% for “exemption”) was introduced at the beginning of the 1990s (with minor changes in the year 2002). The “exemption” reimbursement category of 90% is valid for most vulnerable people (patients up to 16 years, disabled and retired patients).

There is no research-oriented pharmaceutical industry located in Estonia, but rather representative offices of approximately 18 international innovative producers, as well the representative companies of generics producers.

Regarding the distribution of pharmaceuticals at the wholesale level there is a multi-channel system, with 43 companies with a wholesale licence in place.

Pharmaceuticals are solely dispensed to the public through privately-owned community pharmacies in Estonia. A total of 80% of the community pharmacies are linked into different pharmacy chains (of which there are five altogether). Hospital pharmacies only provide pharmaceuticals for hospital use (in-patient care). The wholesalers and community pharmacies are remunerated via statutory maximum mark ups, and a discounted value-added tax (VAT) of 5% is applied for all pharmaceuticals (standard VAT 18%).

Pharmaceutical Pricing and Reimbursement Information Estonia, 2007.

[http://ppri.oebig.at/Downloads/Results/Estonia\\_PPRI\\_2007.pdf](http://ppri.oebig.at/Downloads/Results/Estonia_PPRI_2007.pdf)

Jesse, M., Habicht, J., Aaviksoo, A., Koppel, A., Irs, A., Thomson, S.: Health Care Systems in Transition: Estonia, Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies, 2004.

<http://www.euro.who.int/document/e85516.pdf>

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

	Y/N or number	Comments.
<b>Community pharmacy</b>		
Number of community pharmacists	1284	According to the information of the Estonian Health Care Board, responsible for registration of pharmacists and assistant pharmacists in September 2012 there were registered 1284 pharmacists in Estonia. This number includes both community and hospital pharmacists. The number of hospital pharmacists is 70. Estonian Health Care Board: <a href="http://www.terviseamet.ee/info/kasulikku/infosusteemid-ja-registrid.html">http://www.terviseamet.ee/info/kasulikku/infosusteemid-ja-registrid.html</a>
Number of community pharmacies	469	According to the pharmacy statistics of the Estonian State Agency of Medicines in January 1, 2012 there were 469 community pharmacies including 301 general pharmacies and 168 branch pharmacies providing similar services except the compounding of extemporaneous medicines that is performed in general pharmacies only.  In Estonian community pharmacies, including structural units 766 pharmacists, 583 assistant pharmacists and 380 other employees were working in the end of the year 2011. <a href="http://www.raviamet.ee/apteegistatistika">http://www.raviamet.ee/apteegistatistika</a>
Competences and roles of community pharmacists		In a community setting the pharmacist can be the owner, manager, responsible pharmacist; in a hospital setting, manager and hospital pharmacist. Professional competencies include: supplying OTC and Rx medicines, compounding/preparation of extemporaneous medicines at the pharmacy, giving advice on medicines (both OTC and Rx medicines), screening services (monitoring blood pressure is common, in some community pharmacies there is the possibility to monitor the level of blood sugar), giving advice on healthcare issues (prevention of illnesses, information concerning food supplements and herbal preparations), reporting of adverse drug reactions (pharmacists are not authorized to report, but in the case of identification of ADR they inform the physician).
Is ownership of a community pharmacy limited to pharmacists?	No	The activity licence of community pharmacy can be held by authorities of executive power, local governments, other legal persons in public law, self-employed persons and legal persons in private law. (Medicinal Products Act, § 41) <a href="http://www.raviamet.ee/627">http://www.raviamet.ee/627</a>  The holder of an activity licence for a general pharmacy, hospital pharmacy or a veterinary pharmacy or a subsidiary thereof shall not be a shareholder or a member of a legal person in private law holding an activity licence for manufacture of medicinal products or wholesale trade in medicinal products. (Medicinal Products Act, § 42 (3)) <a href="http://www.raviamet.ee/627">http://www.raviamet.ee/627</a>
Rules for geographical distribution of pharmacies?	Yes	The limitations are as follows: In towns 3000 inhabitants per one pharmacy. In rural areas no closer than 1 km. Medicinal Products Act §42'(1) <a href="http://www.raviamet.ee/627">http://www.raviamet.ee/627</a>
Drugs and healthcare products available through other channels?	Drugs: No  Healthcare products: Yes	Estonian community pharmacies have a monopoly for the sale of prescription and OTC medicines.  Healthcare products are available in supermarkets, etc. Internet and mail-order pharmacies are not permitted in Estonia.  <a href="http://www.raviamet.ee/627">http://www.raviamet.ee/627</a>

Other persons involved in practice?	Yes	Besides the professional staff of a community pharmacy, assistant pharmacists are also present.
Their titles and number(s)	874	According to the registry of the Estonian Health Care Board in September 2012, 874 assistant pharmacists were registered in Estonia. The number includes assistant pharmacists working at community and hospital pharmacies. Estonian Health Care Board <a href="http://www.terviseamet.ee/info/kasulikku/infosusteemid-ja-registrid.html">http://www.terviseamet.ee/info/kasulikku/infosusteemid-ja-registrid.html</a>
Their qualifications		
Organisation providing and validating the E&T		Tallinn Health College <a href="http://www.ttk.ee/index.php?id=29029">http://www.ttk.ee/index.php?id=29029</a>
Duration of studies	3 years	Matriculation requirements are similar to those at the university: document certifying secondary education, state examinations in biology, chemistry, Estonian language, Estonian language state exam for non-Estonians, aptitude interview <a href="http://www.ttk.ee/index.php?id=29029">http://www.ttk.ee/index.php?id=29029</a>
Subject areas		Pharmaceutical chemistry, pharmacognosy, pharmacology, pharmacotherapy, pharmaceutical technology, bio-pharmacy, social sciences (social pharmacy, history of pharmacy, pharmacy organization, languages), veterinary pharmacy, toxicology, pharmaceutical commodities, herbal products, phytotherapy.
Competences and roles		Professional competencies: supplying OTC and Rx medicines, managing/compounding medicines for some ailments, giving advice on medicines (both OTC and Rx medicines), screening services (monitoring blood pressure is common, in some community pharmacies there is the possibility to monitor the level of blood sugar), giving advice on health care issues (prevention of illnesses, information concerning food supplements and herbal preparations). As opposed to the roles of pharmacist – assistant pharmacists cannot hold the position of pharmacy manager. In comparison to pharmacy studies at the University of Tartu, the curriculum of assistant pharmacists is less focused on theory and more practice-oriented.
<b>Hospital pharmacy</b>		
Hospital pharmacists	105	At the end of 2011 there were 70 pharmacists, 35 assistant pharmacists and 30 other employees working in hospital pharmacies. <a href="http://www.ravimiamet.ee/apteegistatistika">http://www.ravimiamet.ee/apteegistatistika</a>
Hospital pharmacies	23	
Competences and roles of hospital pharmacists		Professional competencies: part of multidisciplinary patient-care team (in some clinics), purchasing of drugs and medical material, monitoring of drug use (in some clinics), production of patient-specific medicines (e.g. cytotoxic preparations) (in some clinics), participation in clinical studies (in some clinics) Estonian Society of Hospital Pharmacists <a href="http://www.ehas.ee/">http://www.ehas.ee/</a>  Survey of European Association of Hospital Pharmacists <a href="http://www.eahp.eu/EAHP-survey">http://www.eahp.eu/EAHP-survey</a>
<b>Pharmaceutical and related industries</b>		
Companies with production, R&D and distribution	21+47	The number 21 includes: less than full-scale manufacturers of human and veterinary medicinal products – 8; manufacturers of active substances - 1; repackaging and labelling – 12 companies. The number 47 includes wholesale companies of human and veterinary medicinal products.

		Activity licence register of State Agency of Medicines, <a href="http://www.ravimiamet.ee/168">http://www.ravimiamet.ee/168</a>
Companies with production only	9	12 companies have a licence for the manufacture and wholesale of medicinal products.
Companies with distribution only	35	12 companies have a licence for the manufacture and wholesale of medicinal products. Companies: Magnum Medical OÜ ( <a href="http://www.magnum.ee/est/tut.htm">http://www.magnum.ee/est/tut.htm</a> ) Tamro Eesti OÜ ( <a href="http://www.tamro.ee/index.asp?action=600&amp;id=600">http://www.tamro.ee/index.asp?action=600&amp;id=600</a> )
Companies producing generic drugs only	8	All 8 companies are not full-scale manufacturers and include human and veterinary medicinal products. Nycomed SEFA ( <a href="http://www.nycomed.ee/ee/Menu/Firmast/">http://www.nycomed.ee/ee/Menu/Firmast/</a> )
<b>Industrial pharmacy</b>		
Number of pharmacists working in industry	10-20	Official statistics are not available.
Roles of industrial pharmacists		Professional competencies: marketing, distribution, drug evaluation and registration.
<b>Other sectors</b>		
Number of pharmacists working in other sectors	Approximately 400	State Agency of Medicines -40 pharmacists; Health Insurance Fund – 5 pharmacists; Ministry of Social Affairs – 2 pharmacists; Department of Pharmacy, University of Tartu - 26 pharmacists; Other departments of University of Tartu, other HEIs in Estonia, approximately - 50 pharmacists; Tallinn Health College- 4 pharmacists; Wholesale companies of medicinal products approximately - 50 pharmacists; Representative offices of foreign drug companies approximately - 100 pharmacists; Armed forces – 2 pharmacists; Companies providing services for drug marketing, drug registration and monitoring of clinical studies – approximately - 30 pharmacists.  For wholesale companies and representative offices, the official statistics concerning the number of pharmacists are not available.
Competences and roles of pharmacists employed in other sectors		Armed forces – supply with medicines. Universities, schools of professional higher education – education of pharmacists and assistant pharmacists, conducting pharmacy research. National health services, governmental institutions dealing with medicines – development and surveillance of pharmacy legislation. Wholesale companies – distribution of medicinal products. Representative offices – introduction of medicinal products to health care professionals.
<b>Roles of professional associations</b>		
Registration of pharmacists	No	There is a registry of pharmacists and assistant pharmacists practicing in community and hospital pharmacies in Estonia. Registration is performed by a governmental institution, the Estonian Health Care Board. To have one's name in the registry, an applicant should provide information concerning professional education and practical experience (having, during the last 5 years, at least 3 years of practice at a community or hospital pharmacy).

		<p>Professional qualifications of pharmacists and assistant pharmacists from abroad are recognized, if the applicant presents in addition to the information described above a document certifying his or her right to work in the field of pharmacy in a Member State of the European Economic Area or Switzerland.  <a href="http://www.ravimiamet.ee/orb.aw/class=file/action=preview/id=5118/EstonianAct-10May2005.doc">http://www.ravimiamet.ee/orb.aw/class=file/action=preview/id=5118/EstonianAct-10May2005.doc</a></p> <p>Pharmacy traineeship practice for both pharmacy and assistant pharmacy students is supervised and validated by Department of Pharmacy, University of Tartu and Tallinn Health College, respectively, and no professional organizations are involved.</p>
Creation of pharmacies and control of territorial distribution	No	<p>Opening of new community pharmacies and their territorial distribution is determined by pharmacy legislation. Control of these activities is performed by a governmental institution the State Agency of Medicines.  <a href="http://www.ravimiamet.ee/orb.aw/class=file/action=preview/id=5118/EstonianAct-10May2005.doc">http://www.ravimiamet.ee/orb.aw/class=file/action=preview/id=5118/EstonianAct-10May2005.doc</a></p>
Ethics and professional conduct	Yes	<p>The Estonian Pharmacists` Association has developed the Code of Ethics for Pharmacists (based on FIP Code of Ethics for Pharmacists)  <a href="http://www.apteekriteliiit.ee/eng/english.html">http://www.apteekriteliiit.ee/eng/english.html</a></p>
Quality assurance and validation of HEI courses for pharmacists	Partly	<p>The quality assurance system at the University of Tartu applies to teaching and research activities. In 2007 there was established the Programme Council of the Pharmacy Master Curriculum incorporating representatives of academia and professional organizations responsible for validation of the curriculum in general, including traineeship.  <a href="http://www.med.ut.ee/farmaatsia/selfevaluation">http://www.med.ut.ee/farmaatsia/selfevaluation</a></p>
Other (please specify)		<p>Among the professional organizations in Estonia, the Estonian Pharmacists` Association (<a href="http://www.apteekriteliiit.ee/eng/english.html">http://www.apteekriteliiit.ee/eng/english.html</a>) and Estonian Academical Society of Pharmacy (<a href="http://www.easp.ee/index_en.php">http://www.easp.ee/index_en.php</a>) are involved in organizing and providing professional continuing education courses.</p> <p>Both organizations represent the pharmacy community of Estonia concerning matters involving contact with the general public and in discussions over changes in pharmacy legislation and future development of pharmacy profession.</p>

Websites	
Ministry of Social Affairs	<a href="http://www.sm.ee/">http://www.sm.ee/</a>
State Agency of Medicines	<a href="http://www.ravimiamet.ee">http://www.ravimiamet.ee</a>
Estonian Health Insurance Fund	<a href="http://www.haigekassa.ee/">http://www.haigekassa.ee/</a>
National Institute for Health Development	<a href="http://www.tai.ee/">http://www.tai.ee/</a>
WHO Estonia	<a href="http://www.who.int/countries/est/en/">http://www.who.int/countries/est/en/</a>
Highlights on health in Estonia	<a href="http://ec.europa.eu/health/ph_projects/1999/monitoring/estonia_en.pdf">http://ec.europa.eu/health/ph_projects/1999/monitoring/estonia_en.pdf</a>
Estonian Pharmacists` Association	<a href="http://www.apteekriteliiit.ee/">http://www.apteekriteliiit.ee/</a>
Pharmaceutical Society of University of Tartu	<a href="http://www.tyrs.ee/">http://www.tyrs.ee/</a>
Estonian Academical Society of Pharmacy	<a href="http://www.easp.ee/">http://www.easp.ee/</a>
Estonian Assistant Pharmacists` Association	<a href="http://www.hot.ee/farmatseut/">http://www.hot.ee/farmatseut/</a>
Estonian Society of Hospital Pharmacists	<a href="http://www.ehas.ee/et">http://www.ehas.ee/et</a>
Association of Pharmaceutical Manufacturers in Estonia	<a href="http://www.rtl.ee/">http://www.rtl.ee/</a>

## Chapter 2. Pharmacy HEIs, students and courses

	Y/N or number	Comments.
<b>Total number of HEIs in your country</b>	Number: 1 (+1)	In Estonia there is only one pharmacy school providing higher education in pharmacy – the University of Tartu. In addition, Tallinn Health College provides professional higher education (3 years) for assistant pharmacists. The following sections are describing only the information concerning the Department of Pharmacy, the University of Tartu
Public	1	
<b>Organisation of HEIs</b>		
Attached to a medical faculty	Yes	Department of Pharmacy: <a href="http://www.med.ut.ee/farmaatsia">http://www.med.ut.ee/farmaatsia</a> Faculty of Medicine: <a href="http://www.med.ut.ee/index.aw/set_lang_id=2">http://www.med.ut.ee/index.aw/set_lang_id=2</a>
Do HEIs offer B + M degrees?	Yes	Integrated B+M curriculum for pharmacy. It is not possible to graduate from the University of Tartu with B degree after 3 years of pharmacy studies; the pharmacy curriculum has been developed for continuous education for 5 years.  Although the education of assistant pharmacists is provided by a non-university HEI (Tallinn Health College) it could be described as education at the conventional bachelor degree level. Assistant pharmacists are mostly employed in community pharmacies.
Do HEIs offer an M. Pharm. after a B degree in another HEI?	Yes	There is a distance learning system called the “Open University” ( <a href="http://www.ut.ee/en/studies/continuing-education">http://www.ut.ee/en/studies/continuing-education</a> ) that offers to the assistant pharmacists who graduated from Tallinn Health College only, the possibility to incorporate the profession of pharmacist after a further 4 years of study.
<b>Tartu – Estonia</b>		
<b>Teaching staff</b>		
Number of teaching staff (nationals)	15	Includes 9 full-time and 6 part-time staff.
Number of international teaching staff (from EU MSs)	1	Professorship in medical technology (2010-2015) financed by the EU European Social Fund. Language barriers and financial problems are the two main reasons for the low number of international teaching staff.
Number professionals (pharmacists and others) from outside the HEIs, involved in E&T	10 plus 10-15	Professionals with a medical background are involved in teaching of courses such as bioethics, pharmaco-epidemiology and pharmaco-economics. Pharmacists employed at State Agency of Medicines, community and hospital pharmacists intervene as visiting lecturers in the courses on organization of pharmacy and social pharmacy (n=10).  The main supervisor of the 6 month traineeship is Department of Pharmacy in Tartu in cooperation with the responsible pharmacists at community and hospital pharmacies (n=10-15).
<b>Students</b>		
Number of places at entry following secondary school	48	In 2012: state-commissioned places – 29, non-state-commissioned and self-financed places - 19. The quota for admission to the places financed by the state is different in every year (from 25 to 30 places) and depends on application of professional organizations and approval of these places by government.
Applicants per place	140	4.7 applicants for one place (state-commissioned).
Number of graduates	32 (23)	Based on statistics of University of Tartu in 20012.

that become registered/professional pharmacists.	Tartu students and 9 open university students)	( <a href="http://www.ut.ee/orb.aw/class=file/action=preview/id=361398/Integreeritud_ope_2000-2008.pdf">http://www.ut.ee/orb.aw/class=file/action=preview/id=361398/Integreeritud_ope_2000-2008.pdf</a> ) During 2001-2007 approximately 73% of the pharmacy students graduated after the normal study period - 5 years. 95% of the students discontinue their studies and then graduate with 1-2 years' delay and the rest drop out.
<b>Entry requirements following secondary school)</b>		
Does Tartu have a specific pharmacy-related entrance examination	No	The entry is based on the results of state/final examinations at secondary school. Two best examination results in the subjects as biology, chemistry, mathematics or physics are considered (constitute 60% of the total score). In addition the grades in first foreign language and mother tongue of 40% of the total score.
<b>Advanced entry</b>		
At which level?		Open University studies
What are the requirements?		Graduation of Tallinn Health College, profession of assistant pharmacist. No specific entrance examination.
<b>Fees per year</b>		
For home students		For state commissioned places there is no fee. Since 2009 for non-state commissioned places for in-house students 2820€ and for Open University students 2116€ per year.
<b>Length of course</b>	<b>5 years</b>	
<b>Specialization</b>		
Does your HEI provide specialized courses?	No	Currently there is no specialization course available in pharmacy in Estonia. In 2010 it is planned to apply for funding from the EU Social Fund to organize an international postgraduate course in clinical pharmacy and pharmaceutical care.
<b>Past and present changes in E&amp;T</b>		
Have there been any major changes since 1999 at Tartu?	Yes	The pharmacy master curriculum (adopted in 1997) has been modified twice, in 2003 and 2007. Differences of 2003 curriculum compared to that of 1997: <ul style="list-style-type: none"> <li>• higher proportion of medical subjects,</li> <li>• implementation of new obligatory subjects (e.g. pharmaceutical excipients, pharmaco-epidemiology and pharmaco-economics, physics in pharmacy, drug toxicology),</li> <li>• increase the duration of in-service practice (pharmacy practice, traineeship) up to 25 weeks,</li> <li>• prolonged time for research projects</li> </ul> Difference of 2007 curriculum compared to 2003: <ul style="list-style-type: none"> <li>• decrease in formal teaching and increase in independent work,</li> <li>• implementation of clinical pharmacy subjects,</li> <li>• decreased proportion of chemistry based subjects,</li> <li>• higher proportion of pharmaceutical technology subjects</li> </ul>
Are any major changes envisaged before 2019 at your HEI?	Perhaps	A structural reform is planned within Medical Faculty in 2009-2010. No information concerning the influence of possible changes to the Department of Pharmacy and to the teaching of pharmacy in general.
<b>Is your HEI typical of all HEIs in the area?</b>	Yes	Compared to the pharmacy schools of neighbouring countries (e.g. Latvia, Finland), our HEI could be considered typical.
<b>Websites</b>		
References to texts and articles of national law		University of Tartu, Faculty of Medicine: <a href="http://www.med.ut.ee/index.aw/set_lang_id=2">http://www.med.ut.ee/index.aw/set_lang_id=2</a> Self-evaluation report of the Department of Pharmacy 2008: <a href="http://www.med.ut.ee/farmaatsia/selfevaluation">http://www.med.ut.ee/farmaatsia/selfevaluation</a>

### Chapter 3. Teaching and learning methods

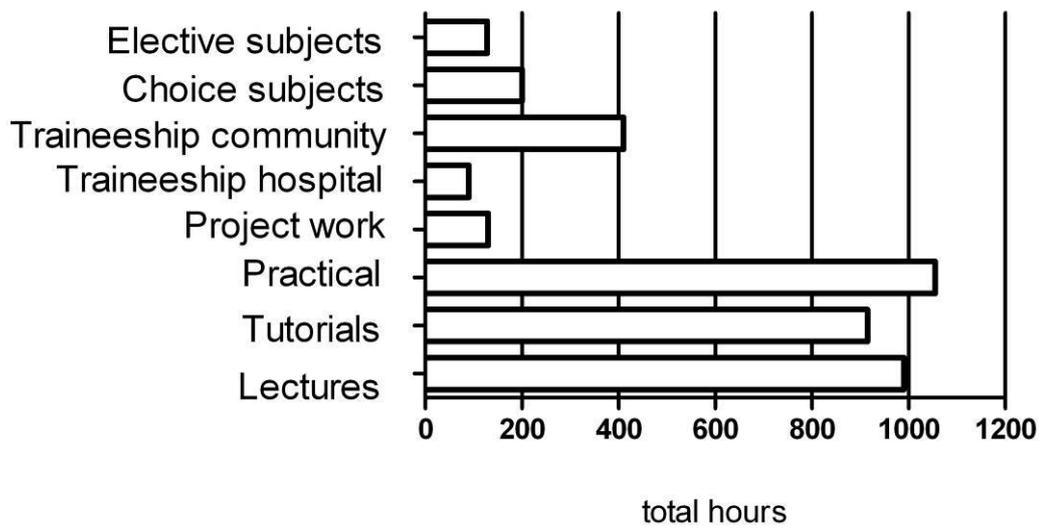
Student hours						
Method	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>Courses in HEI:</b>						
Lecture	230	220	240	240	60	<b>990</b>
Tutorial	175	110	140	330	110	<b>915</b>
Practical	275	330	300	150	-	<b>1055</b>
Project work	-	-	-	-	130	<b>130</b>
<b>Traineeship:</b>						
Hospital	-	-	-	-	90	<b>90</b>
Community	-	See electives	-	-	410	<b>410</b>
<b>Subtotal:</b>	<b>680</b>	<b>660</b>	<b>680</b>	<b>720</b>	<b>800</b>	<b>3540</b>
<b>Electives:</b>						
Choice	40	40 It is possible to take elective course "Propaedeutical training" (48 hours) at community pharmacy	40	40	40	<b>200</b>
Optional	25	26	26	26	25	<b>128</b>
<b>Total</b>	<b>745</b>	<b>726</b>	<b>746</b>	<b>786</b>	<b>865</b>	<b>3868</b>

The calculation of the student hours presented is based on following: for obligatory subjects 1 credit point means 20 hours formal teaching and 20 hours independent work and for electives 16 hours formal teaching and 24 hours independent work. In the table only the hours for auditory work are presented.

From autumn 2009 onwards the European Credit Point System has been introduced in University of Tartu. In general of the compulsory subjects taught at the Department of Pharmacy lectures cover 32%, seminars 23% and laboratory work 45% of the formal teaching.

The curriculum in general, including courses, traineeship and electives will be validated by Programme Council of the Pharmacy Master Curriculum.

## Hours by learning methods



### Websites

References to texts and articles of national law

Self-evaluation report of the Department of Pharmacy 2008:

<http://www.med.ut.ee/farmaatsia/selfevaluation>

B+M integrated studies curriculum 2008/2009:

[https://www.is.ut.ee/reports/rwservlet?ok\\_oppekava\\_kirjeldus.rdf+481+2008+0+0+2+0,0,0,0,0,0,0+PDF+application/pdf](https://www.is.ut.ee/reports/rwservlet?ok_oppekava_kirjeldus.rdf+481+2008+0+0+2+0,0,0,0,0,0,0+PDF+application/pdf)

## Chapter 4. Subject areas

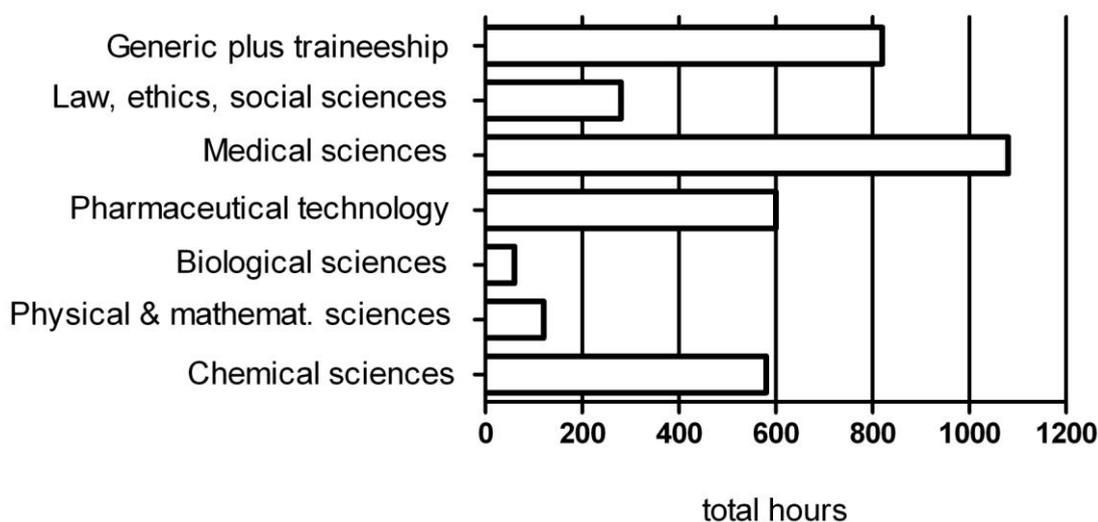
### Student hours

Subject area	Year 1	Year 2	Year 3	Year 4	Year 5	Total	%
CHEMSCI	180	220	100	80	-	580	21
PHYSMATH	120	-	-	-	-	120	4
BIOLSCI	-	60	-	-	-	60	2
PHARMTECH	-	60	240	300		600	21
MEDISCI	300	260	340	120	60	1080	39
LAWSOC	40	60	-	180		280	10
GENERIC	40			40		80	3
<b>Subtotal</b>						<b>2800</b>	<b>100</b>
<b>GENERIC (includes traineeship)</b>	40	-	-	40	740	820	

The calculation of the student hours presented is based on following: for obligatory subjects 1 credit point means 20 hours formal teaching and 20 hours independent work and for electives 16 hours formal teaching and 24 hours independent work.

In the table only the hours for formal teaching are presented.

Hours by subject area



### Websites

References to texts and articles of national law

Self-evaluation report of the Department of Pharmacy 2008:

<http://www.med.ut.ee/farmaatsia/selfevaluation>

B+M integrated studies curriculum 2008/2009:

[https://www.is.ut.ee/reports/rwservlet?ok\\_oppekava\\_kirjeldus.rdf+481+2008+0+0+2+0,0,0,0,0,0,0+PDF+application/pdf](https://www.is.ut.ee/reports/rwservlet?ok_oppekava_kirjeldus.rdf+481+2008+0+0+2+0,0,0,0,0,0,0+PDF+application/pdf)

## Chapter 5. Impact of the Bologna principles

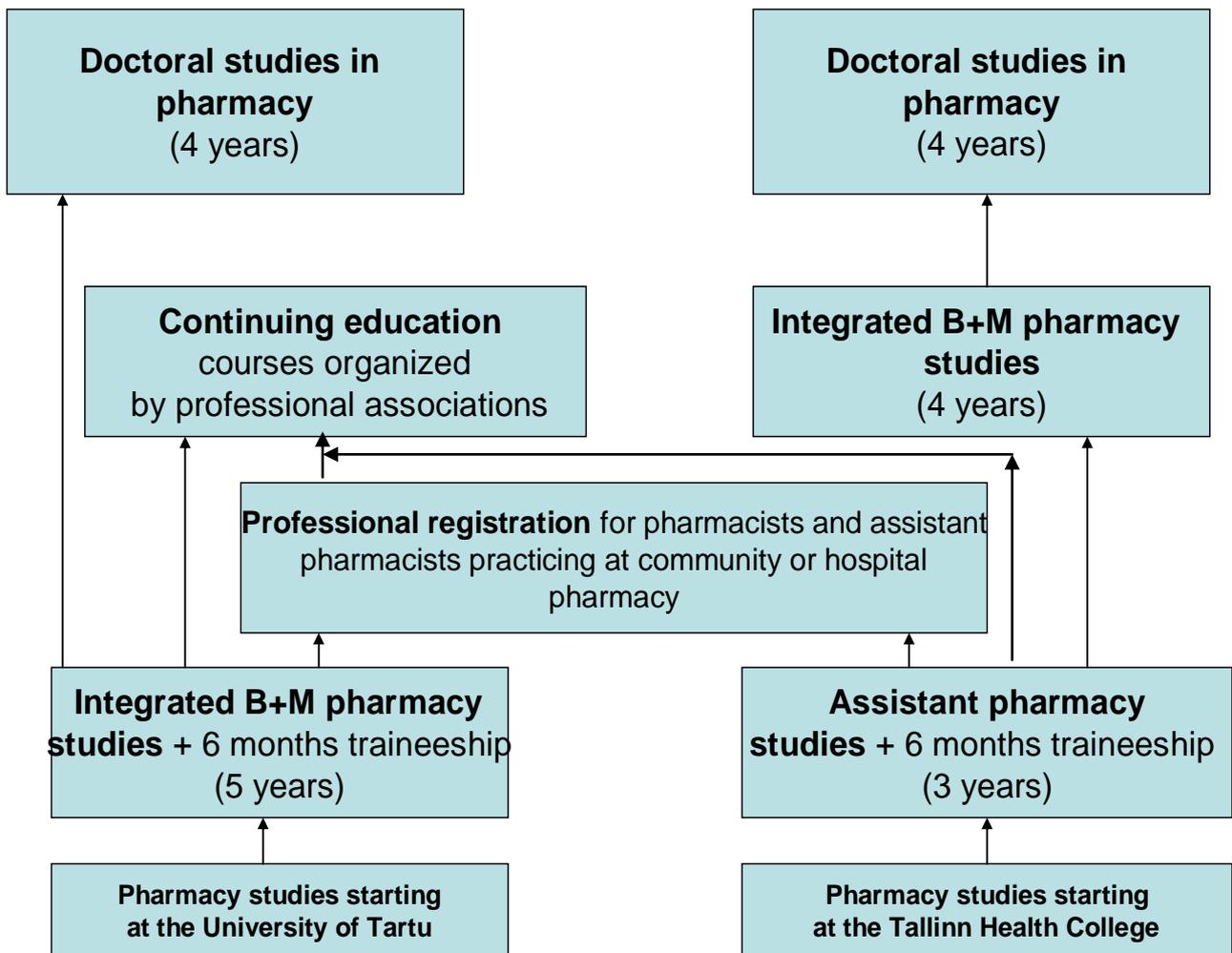
Bologna principle	Is the principle applied? Y/N or partially	How is it applied? Does your HEI have multilateral recognition and agreements? Other comments.
<b>1. Comparable degrees / Diploma Supplement</b>	Yes	The curriculum of Bachelor and Master integrated pharmacy studies at the University of Tartu received full accreditation from an international expert team in October 2008. ( <a href="http://www.med.ut.ee/440921">http://www.med.ut.ee/440921</a> ) The Diploma Supplement is issued systematically in Estonian, and if needed in English.
<b>2. Two main cycles (B and M) <u>with entry and exit at B level</u></b>	No	At the University of Tartu the pharmacy undergraduate studies are not divided into B and M cycles. However, professional higher education provided at Tallinn Health College is in principle comparable with Bachelor level of pharmacy studies at university.
<b>3. ECTS system of credits / links to LLL</b>	Partially	ECTS systems were adopted in autumn 2009. However, the ECTS system is not linked to LLL, as we do not have a systematic continuing education system supported or coordinated by governmental institution, university or some other institution.
<b>4. Obstacles to mobility</b>	Partially	The main problems could be connected with insufficient language skills and financial difficulties. In addition, the pharmacy master studies at the University of Tartu do not provide the competency in all pharmacy fields (e.g. industrial pharmacy). The department of Pharmacy at the University of Tartu has several Erasmus agreements with different pharmacy schools in Europe serving an excellent opportunity for students and pharmacy staff exchange.
<b>5. European QA</b>	Partially	The University of Tartu adheres to the Bologna process in the organisation of its studies and programmes, which implies built-in quality assurance and expert evaluations. The quality of study programmes is assured through programme-based organisation of study designed to pay more attention to the needs of society and prospective employers. To achieve this goal annual polls are conducted among graduates of the university to evaluate their initial success in the labour market. Relevant findings contribute to the development of further curricula. <a href="http://www.ut.ee/en/studies/why-tartu/worldclass-education">http://www.ut.ee/en/studies/why-tartu/worldclass-education</a>  The curriculum of Bachelor and Master integrated pharmacy studies at the University of Tartu received a full accreditation in October 2008. The accreditation is valid until January 27, 2016. The accreditation was organized by the Higher Education Accreditation Centre of Estonia, who invited an international team to evaluate pharmacy Master and Doctoral programmes.
<b>6. European dimension</b>	No	
<b>ERASMUS staff exchange to your HEI from elsewhere</b>	Number of staff: 2 months: 3	The University of Helsinki and the Utrecht University of Applied Sciences (since 2007 to present)
<b>ERASMUS staff exchange from your HEI to other HEIs</b>	Number of staff: 1 months: 1	The University of Helsinki (since 2007 to present).
<b>ERASMUS student exchange to your HEI from elsewhere</b>	Number of students: 6 months: 3	The Utrecht University of Applied Sciences (since 2008 to present). In 2009/2010 from the University of Complutense, Madrid.

<b>ERASMUS student exchange from your HEI to other HEIs</b>	Number of students: 6 months: 3-9	The Utrecht University of Applied Sciences (since 2008 to present). In 2009/2010 to the University of Helsinki.
---	--------------------------------------	---

<b>Websites</b>	
References to texts and articles of national law	Self-evaluation report of the Department of Pharmacy 2008: <a href="http://www.med.ut.ee/farmaatsia/selfevaluation">http://www.med.ut.ee/farmaatsia/selfevaluation</a> Joint Final Report of the Accreditation Expert Team 2008: <a href="http://www.med.ut.ee/440921">http://www.med.ut.ee/440921</a>

## 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?
<p><b>“Evidence of formal qualifications as a pharmacist shall attest to training of at least <u>five years' duration</u>...”</b></p>	<p>At the University of Tartu we provide only the five year pharmacy education and we consider this time optimal to receive miscellaneous professional education could serve as good basis for high professional competency in the future.</p>	
<p><b>“<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>”</b></p>	<p>Within 4 years it would be complicated to cover theoretical studies and practical training.</p>	
<p><b>“<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>”</b></p>	<p>It gives good opportunity for future pharmacists to implement their theoretical knowledge into practice. In Estonia more than half of the students graduating from the University of Tartu as pharmacists are employed at community pharmacies.</p>	<p>It is not relevant for Estonia, but it would be worthwhile to consider different institutions of pharmacy field as practice places, eg. pharmacy industry, wholesale companies of medicines and divide the six month period between community pharmacy and some other practice institution.</p>
<p><b>“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>”</b></p>	<p>In general the statement is acceptable. However, the skilful combination of theory linked to practice is very important tool in quality teaching process.</p>	
<p><b>The directive states</b></p>	<p><b>How does / will this directive annex affect pharmacy E&amp;T?</b></p>	
<p><b>V.6. PHARMACIST</b>  <b>5.6.1. Course of training for pharmacists</b>  <b>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.</b></p>	<p>In redesigning of pharmacy Master curriculum we have in general followed the presented course description. However, when considering the new roles of a contemporary pharmacist, too little attention is at present paid to clinical pharmacy and pharmaceutical care issues.</p>	



The Estonian scheme for pharmacy education and training.



Education and Culture DG

Lifelong Learning Programme

**PHARMINE**  
*Pharmacy Education  
in Europe*

**PCN**



*Pharmacolor  
Consultants  
Nancy*



**UNIVERSITÉ  
DE LORRAINE**



**UNIVERSITY OF TARTU**



Vrije  
Universiteit  
Brussel

---

**PHARMINE**

Coordinator: Bart Rombaut, School of Pharmacy, Vrije Universiteit Brussel, Brussels, Belgium. [brombaut@vub.ac.be](mailto:brombaut@vub.ac.be)  
Executive Director: Jeff Atkinson, Pharmacolor Consultants Nancy, Villers, France. [jeffrey.atkinson@univ-lorraine.fr](mailto:jeffrey.atkinson@univ-lorraine.fr)

With the support of the Lifelong Learning Programme of the European Union  
(142078-LLP-1-2008-BE-ERASMUS-ECDSP).

**Website: [www.pharmine.org](http://www.pharmine.org)**