

Pharmacy education & training in

# SLOVENIA

Version 2 - 2012



**PHARMINE**  
*Pharmacy Education  
in Europe*

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

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

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

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

The aims and objectives of PHARMINE WP7 are to:

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

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

(see:

<http://enzu.pharmine.org/media/filebook/files/PHARMINE%20WP7%20survey%20of%20European%20HEIs%200309.pdf>)

## Introduction.

### Statistics for Slovenia.

Total population: 2,050,000

Gross national income per capita (PPP international \$): 4210

Life expectancy at birth m/f (years): 75/81

Healthy life expectancy at birth m/f (years, 2003): 69/74

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

Probability of dying between 15 and 60 years m/f (per 1 000 population): 141/59

Total expenditure on health per capita (Intl \$, 2006): 2,063

Total expenditure on health as % of GDP (2006): 8.4%

Detailed information is available at: World Health Statistics 2009:

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

### Highlights on health in Slovenia.

Slovenia is by its geographic position and development, part of Central Europe. It is in the group of high income countries. Life expectancy at birth and healthy life expectancy is similar to average in EU. Neonatal mortality rate, under 5 mortality rate, maternal mortality ratio and adolescent fertility rate are lower than average in region. Immunization coverage is high. Cardiovascular diseases and malignancies are the main causes of mortality, the third is injury. Median age is 41 yrs with 14% of population over 60 years, thus Slovenia shows a tendency towards an ageing population with similar problems of health care and social care system as elsewhere in EU.

Slovenia has well dispersed primary health care system with regional hospitals (second level) and two university medical centres for tertiary health care service. Albeit there is an insufficiency of medical doctors. The number of pharmacists are also lower than average in EU (per population).

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

Jeffrey ATKINSON  
PHARMINE executive director  
Pharmacolor Consultants Nancy  
12 rue de Versigny  
54600 Villers  
France.  
[jeffrey.atkinson@orange.fr](mailto:jeffrey.atkinson@orange.fr)  
[www.pharmine.org](http://www.pharmine.org)

Borut BOZIC  
University of Ljubljana, Faculty of Pharmacy  
Aškerčeva 7  
SI-1000 Ljubljana  
Slovenia  
[Borut.bozic@ffa.uni-lj.si](mailto:Borut.bozic@ffa.uni-lj.si)  
[www.ffa.uni-lj.si](http://www.ffa.uni-lj.si)

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/)

with the help of:

Christine CAPDEVILLE-ATKINSON  
Vice-president  
Nancy University – UHP  
24-30 rue Lionnois - BP 60121  
54 003 Nancy Cedex  
France  
[christine.atkinson@uhp-nancy.fr](mailto:christine.atkinson@uhp-nancy.fr)  
<http://www.uhp-nancy.fr/>

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)

All the data and information provided in this document have been provided to the best of the knowledge of the authors. Any comments and suggestions will be welcomed: [jeffrey.atkinson@univ-lorraine.fr](mailto:jeffrey.atkinson@univ-lorraine.fr)

Version 2 was produced in February 2012.

## Contacts in Slovenia.

|            | First contact   | Second contact   |
|------------|---|--|
| Name       | Prof. Borut Božič   | Prof. Stanislav Gobec  |
| HEI        | University of Ljubljana, Faculty of Pharmacy  |  |
| Street     | Aškerčeva 7   |  |
| City, zip  | SI-1000 Ljubljana   |  |
| Country    | Slovenia  |  |
| Telephone) | +386 1 4769 501,<br>+386 1 4769509  | +386 1 4769509   |
| Fax        | +386 1 4769 502   |  |
| e-mail     | <a href="mailto:Borut.bozic@ffa.uni-lj-siv">Borut.bozic@ffa.uni-lj-siv</a>  | <a href="mailto:Stanko.gobec@ffa.uni-lj.si">Stanko.gobec@ffa.uni-lj.si</a> |
| Website    | <a href="http://www.ffa.uni-lj.si">www.ffa.uni-lj.si</a><br>In English: <a href="http://www.ffa.uni-lj.si/en.html">http://www.ffa.uni-lj.si/en.html</a> |  |

## Index

|  | <b>Page</b> |
|--|-------------|
| <b>Chapter 1. Organization of the activities of pharmacists, professional bodies</b> | <b>7</b>    |
| <b>Chapter 2. Pharmacy HEIs, students and courses</b>                                | <b>10</b>   |
| <b>Chapter 3. Teaching and learning methods</b>                                      | <b>13</b>   |
| <b>Chapter 4. Subject areas</b>  | <b>15</b>   |
| <b>Chapter 5. Impact of the Bologna principles</b>                                   | <b>18</b>   |
| <b>Chapter 6. Impact of EC directive 2005/36/EC</b>                                  | <b>20</b>   |
| <b>The Slovenian scheme for pharmacy education and training.</b>                     | <b>21</b>   |

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

|   | Y/N,<br>number<br>or % | Comments.  |
|---|------------------------|--|
| <b>Community pharmacy</b>                                 |                        |  |
| Community pharmacists                                     | 2010:<br>986           | 2,079 inhabitants per pharmacist<br>3.3 pharmacists per pharmacy   |
| Community pharmacies                                      | 2010:<br>296           | Branch pharmacies included<br>6,926 inhabitants per pharmacy   |
| Competences and roles of community pharmacists            |                        | According to Directive 2005/36/EC: <ul style="list-style-type: none"> <li>• Supplying prescription medicines</li> <li>• Managing medicines for some ailments</li> <li>• Giving advice on medicines</li> <li>• Screening services</li> <li>• Services to the housebound</li> <li>• Services to nursing and care homes (medication reviews, advice on storage and administration of medicines)</li> </ul>  |
| Ownership of a pharmacy limited to pharmacists?           | No                     | 201 community pharmacies are owned by municipalities.<br><br>Private ownership of community pharmacies is limited to pharmacists.<br><a href="http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx">http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx</a>   |
| Are there rules governing the distribution of pharmacies? | Yes                    | <ul style="list-style-type: none"> <li>• 400 m street distance in towns</li> <li>• 6 km distance of branch pharmacy from the first nearest community pharmacy</li> <li>• 10 km distance of dispensing doctor from the first nearest community pharmacy (Resolution about health care organisation in Slovenia 2008-2013)</li> </ul> <a href="http://www.uradni-list.si/1/objava.jsp?urlid=200436&amp;stevilka=1568">http://www.uradni-list.si/1/objava.jsp?urlid=200436&amp;stevilka=1568</a><br><a href="http://www.mz.gov.si/fileadmin/mz.gov.si/pageuploads/aktualno/javna_razprava/javna_razprava_2008/nacionalni_plan_2008/Microsoft_Word_-_NPZV_javna_razprava_280108.pdf">http://www.mz.gov.si/fileadmin/mz.gov.si/pageuploads/aktualno/javna_razprava/javna_razprava_2008/nacionalni_plan_2008/Microsoft_Word_-_NPZV_javna_razprava_280108.pdf</a> |
| Healthcare products available by other channels           | Yes                    | Specialized shops: some of them are registered for OTC also, some of them not; later may sell healthcare products only.<br><br>Only few pharmacies offer E-pharmacies service and only for OTC   |
| Other persons involved in practice                        | Yes                    | Under supervision of pharmacist  |
| Titles and number   | 496                    | Pharmacy technicians   |
| Organisation providing and validating the E&T             |                        | Secondary school for pharmacy, cosmetics and healthcare<br>Srednja šola za farmacijo, kozmetiko in zdravstvo<br><a href="http://www.ssfkz.si">www.ssfkz.si</a>   |
| Duration of studies (years)                               | 0.5                    | Pharmacy technicians do not have a higher education; after 4 years of secondary education (at age 15-19 yrs) and a final exam at the end of the secondary school, they have 6 months probation in a pharmacy.  |
| Subject areas   |                        | <ul style="list-style-type: none"> <li>• Non-prescription medicines</li> <li>• Storage and managing of medicines</li> <li>• Non-medicinal healthcare products</li> </ul>   |
| Competences and roles                                     |                        | <ul style="list-style-type: none"> <li>• Managing medicines for some ailments</li> <li>• Screening services</li> </ul>   |

|   |     |  |
|---|-----|--|
|   |     | <ul style="list-style-type: none"> <li>Preparing some medicines</li> </ul>   |
| <b>Hospital pharmacy</b>                        |     |  |
| Does such a function exist?                     | Yes |  |
| Number of hospital pharmacists                  | 94  | They are organized as a section inside of Slovene chamber of pharmacy<br><a href="http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx">http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx</a>   |
| Number of hospital pharmacies                   | 29  | Branch pharmacies included   |
| Competences and roles of hospital pharmacists   |     | <p>According to Directive 2005/36/ES (Recognized competences differ very from hospital to hospital)</p> <ul style="list-style-type: none"> <li>Inwards or outpatient clinics</li> <li>Consultant in specialised clinical areas such as paediatrics or intensive care</li> <li>Part of multidisciplinary patient-care team</li> <li>Purchasing of drugs and medical material</li> <li>Monitoring of drug use</li> <li>Unit-dose drug distribution</li> <li>Production of patient-specific medicines (cytotoxic preparations, radiopharmaceuticals)</li> </ul>       |
| <b>Pharmaceutical and related industries</b>    |     |  |
| Companies with production, R&D and distribution | 2   | Krka: <a href="http://www.krka.biz/en/">http://www.krka.biz/en/</a><br>LEK/Sandoz: <a href="http://www.lek.si/en/">http://www.lek.si/en/</a>   |
| Companies with production only                  | 10  | Pharmaceutical industry and Galenical laboratories<br>Krka: <a href="http://www.krka.biz/en/">http://www.krka.biz/en/</a><br>LEK/Sandoz: <a href="http://www.lek.si/en/">http://www.lek.si/en/</a><br>Galex: <a href="http://www.galex.si">www.galex.si</a><br>Marifarm: <a href="http://www.marifarm.si">www.marifarm.si</a>  |
| Companies with distribution only                | 5   | About 60 companies are registered for the distribution of pharmaceutical and healthcare products, 5 of them are classical distribution companies for pharmaceutical products: Kemofarmacija (Celesio), Salus, Farmadent, Sanolabor, Medis. About 80-100 pharmacists are employed in the sector of pharmaceutical distribution (sales)<br><a href="http://www.kemofarmacija.si">www.kemofarmacija.si</a> , <a href="http://www.salus.si">www.salus.si</a> , <a href="http://www.medis.si">www.medis.si</a> , <a href="http://www.sanolabor.si">www.sanolabor.si</a> |
| Companies producing generic drugs only          | 3   | Krka, Galex, Marifarm<br><a href="http://www.krka.biz/en/">www.krka.biz/en/</a><br><a href="http://www.galex.si">www.galex.si</a><br><a href="http://www.marifarm.si">www.marifarm.si</a>  |
| <b>Industrial pharmacy</b>                      |     |  |
| Pharmacists working in industry                 | 895 | 470 work in the two main factories (Krka dd and LEK/Sandoz). Considering other pharmaceutical industry in Slovenia (pharmacists mainly in pharmaco-informatics, training and sales), the number was in 2010 895 pharmacists (5+0, or pre-Bologna 4 -4.5 yrs)   |
| Competences and roles of industrial pharmacists |     | <p>Depends on position and company:</p> <ul style="list-style-type: none"> <li>R&amp;D – drugs</li> <li>R&amp;D – health care products other than drugs</li> <li>Synthesis and production of new chemical entities and drugs</li> <li>Preclinical drug evaluation (safety and efficacy)</li> <li>Clinical drug evaluation (safety and efficacy)</li> <li>Pharmaceutical products manufacturing</li> <li>Marketing</li> </ul>   |



|  |  |   |
|--|--|---|
|  |  | <ul style="list-style-type: none"> <li>• Distribution</li> <li>• Medical devices</li> <li>• Cosmetology</li> <li>• Drug evaluation and registration (industrial)</li> </ul>   |
| <b>Other sectors</b>   |  |   |
| Pharmacists working in other sectors                           | 170  |   |
| Sectors in which pharmacists are employed                      |  | Education (secondary and universities); Health insurance; Medical laboratories; Government, administration and legislation (Parliament, Agency for pharmaceutical products, Health inspectorate), National health institute   |
| Competences of pharmacists in other sectors                    |  | Depends on sector and working position: in some area the same as basic competences of pharmacists, on some area defined by working place and not by professional education  |
| <b>Roles of professional associations</b>                      |  |   |
| Registration of pharmacists                                    | No   | Individual pharmacists are not registered, except private owners of community pharmacies, which are registered at the Ministry of health. According the Law of Pharmacy, all pharmacies (community, hospital or private) should be registered at the Slovene chamber of pharmacy<br><a href="http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx">http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx</a> |
| Creation of pharmacies and control of territorial distribution | No   | The role is indirect through the professional collegiate body for pharmacies (guidelines) or civil initiatives.   |
| Ethical and other aspects of professional conduct              | Yes  | Codex of pharmaceutical ethics; Slovenian Pharmaceutical Society: for pharmacists, members of association<br>The Deontology codex in pharmacy; Slovene chamber of pharmacy<br>The Deontology Codex in laboratory medicine; Slovenian Chamber for laboratory medicine: for all who work in diagnostic laboratories, including pharmacist   |
| Quality assurance and validation of HEI courses                | Yes  | National agency for HE of Slovenia (obligatory accreditation of each course and all main changes)<br>On the first step Faculty of pharmacy with participators (Slovene chamber of pharmacy, Association of drug producers)  |
| Other (please specify)   |  | Specialization programmes are completed by end exam and presentation of a thesis. Courses organized by Slovenian Chamber of Pharmacy include final evaluation tests.  |
| <b>References</b>  |  |   |
| References to texts and articles of national law               | Zakon o lekarniški dejavnosti (uradno prečiščeno besedilo) (ZLD-UPB1) Ur.l. RS, št. 36/2004 - Pharmacies Act - official consolidated text<br>Slovenian Chamber of Pharmacy, Statutes, Code of ethics<br><a href="http://www.sfd.si">www.sfd.si</a> ;<br><a href="http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx">http://www.lzs.si/Aboutus/tabid/218/language/sl-SI/Default.aspx</a> ,<br><a href="http://zakonodaja.gov.si/rpsi/r09/predpis_ZAKO4079.html">http://zakonodaja.gov.si/rpsi/r09/predpis_ZAKO4079.html</a><br><a href="http://www.mz.gov.si/en/">http://www.mz.gov.si/en/</a><br><a href="http://www.nakvis.si/indexang.html">http://www.nakvis.si/indexang.html</a> |   |
| References   | Slovenian Chamber of Pharmacy, Annual report for 2008<br><a href="http://www.lzs.si">www.lzs.si</a>  |   |

## Chapter 2. Pharmacy HEIs, students and courses

|  | Y/N,<br>number or<br>% | Comments.  |
|--|------------------------|--|
| <b>Total number of HEIs in Slovenia</b>  | 1                      | Only one with programme of Pharmacy: University of Ljubljana, Faculty of Pharmacy  |
| Public   | 1                      |  |
| <b>Organisation of HEIs</b>  |                        |  |
| Independent faculty  | Yes                    | <a href="http://www.ffa.uni-lj.si">www.ffa.uni-lj.si</a><br>In English : <a href="http://www.ffa.uni-lj.si/en.html">http://www.ffa.uni-lj.si/en.html</a>   |
| Do HEIs offer B + M degrees?   | No                     | B+M degree in Laboratory medicine, BUT not in pharmacy;<br>M degree in Industrial pharmacy (BUT without competencies as a pharmacist according to Directive 2005/36/ES).<br><br>In pharmacy only 5-years programme (integrated B + M).   |
| Do HEIs offer an M. Pharm. after a B degree in another HEI?                          | No                     | Not in pharmacy, only in Industrial pharmacy, which is M (+2) (M. Ind. Pharm.)   |
| <b>Ljubljana - Slovenia</b>  |                        |  |
| <b>Teaching staff</b>  |                        |  |
| Number of teaching staff (nationals)   | 70                     | 65 professionals employed at the faculty, 40 professionals from other faculties and outside the HEI.<br>In 2011 all staff: <ul style="list-style-type: none"> <li>• 140 persons with 150 FTE <ul style="list-style-type: none"> <li>○ teaching staff: 70 persons with 79 FTE (not all places are filled)</li> <li>○ researchers: 38 persons</li> <li>○ administrative and technical staff: 32 persons</li> </ul> </li> </ul>   |
| Number of international teaching staff (from EU MSs)                                 | 0                      | As guest teachers 3 – 8 persons per year   |
| Number of international teaching staff (non EU)                                      | 0                      | As guest teachers 1 – 3 persons per year   |
| Number professionals (pharmacists and others) from outside the HEIs, involved in E&T | 40                     | Experts from pharmaceutical industry, Ministry of health, Health Insurance Institute of Slovenia, community pharmacies, laboratory medicine, Agency for pharmaceutical products, hospitals.  |
| <b>Students</b>  |                        |  |
| Number of places at entry following secondary school                                 | 180                    | Yearly decision of Ministry for higher education, science and technology<br>In Ljubljana, we have 180 students of pharmacy at entering (in the first year). The total number of students in the pharmacy programme in Ljubljana (minus those in doctoral studies) was in 2010, 980, and in 2012, around 1000.  |
| Number of applicants for entry   | 220 - 250              | <a href="http://www.vpis.uni-lj.si/">http://www.vpis.uni-lj.si/</a><br><a href="http://www.vpis.uni-lj.si/podatki/pdf/31.pdf">http://www.vpis.uni-lj.si/podatki/pdf/31.pdf</a>   |
| Number of graduates that become registered/professional pharmacists.                 | 120                    | About 100 - 120 per year (2007 – 2010), in 2011 136 graduated (the generations on 1 <sup>st</sup> y till 2006 were 135), 10-15% change study program or drop out or discontinue the study for more than 2 years<br>In 2010, the first generation finished study according to Directive – all graduates are registered since study has been extended to 5 yrs, including 6 months practice and state exam prior thesis defence. Earlier, >80% graduates enter state examine for registered pharmacists. Others (without |

|   |                |   |
|---|----------------|---|
|   |                | state exam) are employed as pharmacists in industry, legislative, education etc, where state exam is not necessary.   |
| Number of international students (from EU member states)                      | 1              | Bulgaria (2010/11)<br>The lectures are given in Slovenian. ERASMUS and other exchange students receive English study literature and individual mentoring by professors. Practical laboratory work: most subjects have an English-speaking sub-group. All written and oral instructions are given in English.<br>Exams: written and oral exams are provided in English.<br>Exchange students are expected to have at least an intermediate level of English knowledge.                                 |
| Number of international students (non EU)                                     | 13             | Croatia, Macedonia, Serbia, Bosnia and Herzegovina<br>The lectures are given in Slovenian. ERASMUS and other exchange students receive English study literature and individual mentoring by professors. Practical laboratory work: most subjects have an English-speaking sub-group. All written and oral instructions are given in English.<br>Exams: written and oral exams are provided in English.<br>Exchange students are expected to have at least an intermediate level of English knowledge. |
| <b>Entry requirements (beginning of S1 of B1, following secondary school)</b> |                |   |
| Specific national entrance examination  | No             |   |
| Other form of entry requirement at a national level                           | Yes            | General examination before graduation from a general secondary school at the national level (for gymnasiums). Graduates of some secondary technical schools (pharmacy, laboratory medicine, veterinary, cosmetics) may enter with an additional examination and the general examination   |
| Is there a national <i>numerus clausus</i> ?                                  | Yes            | 160 regular students and 16 for foreign students, graduates or parallel students In year 2009/2010  |
| <b>Fees per year</b>  |                |   |
| For home students   | Amount (€): 0  | The costs are covered from the state budget. For non EU students € 1700 per year.   |
| <b>Length of course</b>   | <b>5 years</b> |   |
| <b>Specialization</b>   |                |   |
| Do HEIs provide specialized courses?  | Yes            | Theoretical part of <u>postgraduate</u> specialization programmes in cooperation with Slovenian Chamber of Pharmacy and Slovenian Chamber for Laboratory Medicine<br>See: <a href="http://www.ffa.uni-lj.si/en/academic-programmes/specializations.html">http://www.ffa.uni-lj.si/en/academic-programmes/specializations.html</a>   |
| In which years?   | Post master    | First year of 3-year or 4-year postgraduate specialization programmes.  |
| In which specialisations  |                | <ul style="list-style-type: none"> <li>• Clinical Pharmacy</li> <li>• Community Pharmacy</li> <li>• Analysis of Pharmaceutical Products</li> <li>• Pharmaceutical Engineering</li> <li>• Pharmacognosy</li> <li>• Clinical biochemistry</li> </ul>  |
| Numbers in each specialization  | 3-10           | Very different from year to year and from specialization to specialisation: from 0-10; all together around 30 in the first year   |
| <b>Past and present changes in E&amp;T</b>                                    |                |   |
| Have there been any major changes since 1999?                                 | Yes            | Harmonisation according to EU directive (6 month training in pharmacy), when Slovenia entered the EU.<br>Bologna reform   |
| Are any major changes envisaged before 2019?                                  | No             | Fine tuning of the programme  |

| <b>References</b>                                |   |
|--|---|
| References to texts and articles of national law | Zakon o visokem šolstvu (The Law of Higher education), Zakon o zdravstveni dejavnosti (The law of health)<br><a href="http://www.mvzt.gov.si/en/legislation/">http://www.mvzt.gov.si/en/legislation/</a><br><a href="http://www.mz.gov.si/en/">http://www.mz.gov.si/en/</a> |
| References                                       | Annual Report of Faculty of Pharmacy for 2010<br><a href="http://www.ffa.uni-lj.si/en/faculty.html">http://www.ffa.uni-lj.si/en/faculty.html</a>  |

### Chapter 3. Teaching and learning methods

Student hours are in brackets, outside brackets are contact hrs with teachers/assistants

| Method   | Year 1        | Year 2        | Year 3       | Year 4        | Year 5   | Total          |
|--|---------------|---------------|--------------|---------------|--|----------------|
| <b>HEIs courses</b>                                |               |               |              |               |  |                |
| Lecture  | 520<br>(1200) | 450<br>(1050) | 405<br>(900) | 525<br>(1200) | 0  | 1900<br>(4350) |
| Tutorial   | 95<br>(300)   | 15<br>(50)    | 60<br>(200)  | 35<br>(90)    |  | 205<br>(640)   |
| Practical  | 150<br>(300)  | 315<br>(700)  | 345<br>(700) | 215<br>(500)  |  | 1025<br>(2200) |
| Project work                                       |               |               |              | 5<br>(10)     | 125<br>(900)   | 130<br>(910)   |
| <b>Traineeship:</b>                                |               |               |              |               |  |                |
| Community - hospital                               |               |               |              |               | 720 (could be in hospital pharmacy)*   | 450<br>(720)   |
| Industrial **                                      |               |               |              |               | Not included   | 0              |
| Other (please specify)                             |               |               |              |               | 180 contact hrs for standard topics:<br><ul style="list-style-type: none"> <li>• first aid</li> <li>• safety legislation</li> <li>• social pharmacy</li> </ul> | 180 (180)      |
| <b>Subtotal:</b>                                   | 765 (1800)    | 780 (1800)    | 810 (1800)   | 780 (1800)    | 755 (1800)   | 3890 (9000)    |
| <b>Electives (included into student work load)</b> |               |               |              |               |  |                |
| Choice   | 0             | 0             | 150<br>(350) | 240<br>(540)  | 120<br>(800)   | 510<br>(1690)  |
| <b>Total</b>                                       |               |               |              |               |  | 3890 (9000)    |

\*: These hours can be used for training in hospital pharmacy as well. For group of students special traineeship is arranged, combining community and hospital pharmacy - according to availability - there is not the capacity in Slovenian hospitals for 150 students at the same time.

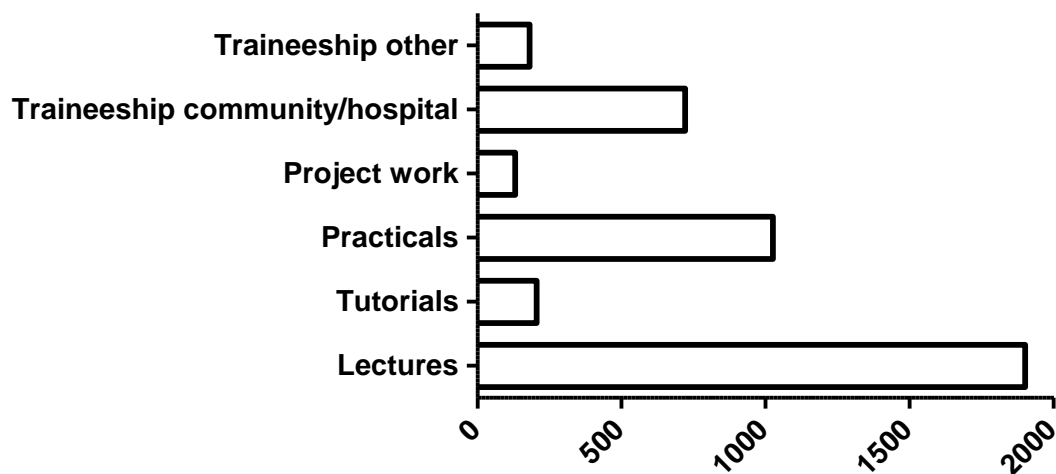
\*\* : In industry, traineeship is 12 months after graduation; it is not regulated by health ministry

Numbers in the table HEI courses correspond to contact hours with teacher/assistant/mentor/supervisor; In average, this is half of student work. Student load is 1800h per each year (with 765 to 810 contact hrs) and is written in brackets.

|                     | 1    | 2    | 3  | 4  | 5  |
|---------------------|------|------|--|--|--|
| <b>HEI courses</b>  |      |      |  |  |  |
| <b>Contact hrs</b>  | 765  | 780  | 810  | 785  | 120  |
| <b>Student work</b> | 1800 | 1800 | 1800   | 1800   | 900 + traineeship  |
| <b>Traineeship</b>  | 0    | 0    | 0  | 0  | Student work:<br>1100 - 1300<br>Some parts of<br>traineeship are<br>performed<br>through HEI |
| <b>Electives</b>    | 0    | 0    | 1 from 6 subjects<br>in 6 <sup>th</sup> semester | 1 from 2<br>alternatives in<br>each semester<br>and 2 from 15<br>subjects in 8 <sup>th</sup><br>semester | The topic of<br>master thesis is<br>elective from<br>several subjects                        |

|            |   |
|------------|---|
| References | PROSPECTUS: UNIFORM MASTER'S PHARMACY PROGRAMME, UNIVERSITY OF LJUBLJANA, FACULTY OF PHARMACY; <a href="http://www.ffa.uni-lj.si">www.ffa.uni-lj.si</a> |
|------------|---|

### Hours by learning methods



## Chapter 4. Subject areas

Student hours are in brackets

| Subject area     | Year 1           | Year 2           | Year 3<br>60 contact hrs<br>(150 hrs<br>student work)<br>for electives | Year 4<br>240 contact<br>hrs (550-650<br>hrs student<br>work) for<br>electives       | Year 5<br>Master degree<br>(1 semester =<br>900 hrs) +<br>traineeship (24 weeks) | Total<br>(traineeship<br>and thesis<br>defence not<br>included) |
|------------------|------------------|------------------|--|--|--|---|
| <b>CHEMSCI</b>   | 285<br>(600-700) | 285<br>(600-700) | 300 or 390<br>(700 -900)   | 0 or 60<br>Add.electives:<br>60<br>(0-270)   | 0 - 120<br>(0-800)<br>+ traineeship  | 870 – 1200<br>(1900 – 3370)                                     |
| <b>PHYSMATH</b>  | 255<br>(570-600) | 0                | 0  | 0  | 0 - 120<br>(0-800)<br>+ traineeship  | 255 -375<br>(570 – 1400)  |
| <b>BIOLSCI</b>   | 90<br>(200-250)  | 90<br>(200-250)  | 0  | 75<br>(170-200)  | 0 - 120<br>(0-800)<br>+ traineeship  | 255 – 375<br>(570 – 1500)                                       |
| <b>PHARMTECH</b> | 0                | 330<br>(750-850) | 105<br>Add. electives:<br>1x60<br>(220-400)                            | 180 or 240<br>Add. electives:<br>7x60 (1 or 2<br>selected)<br>(400-700)              | 0 - 120<br>(0-800)<br>+ traineeship  | 615 – 975<br>(1320 – 2700)                                      |
| <b>MEDISCI</b>   | 90<br>(200-250)  | 75<br>(170-200)  | 255<br>Add. electives:<br>3x60 (1<br>selected)<br>(580-720)            | 150 or 210 or<br>270<br>Add. electives:<br>9x60<br>(1 or 2<br>selected)<br>(350-900) | 0 - 120<br>(0-800)<br>+ traineeship<br>+ thesis<br>defence                       | 690 – 930<br>(1300 – 2070)                                      |
| <b>LAWSOC</b>    | 45<br>(100-150)  | 0                | 60 (240)<br>Add. electives:<br>1x60<br>(180- 270)                      | 120<br>Add.<br>electives:60<br>(270-420)   | 0 - 120<br>(0-800)<br>+ traineeship  | 165 – 375<br>(370 – 1720)                                       |
| <b>GENERIC</b>   | 0                | 0                | 60<br>(240)<br>Add. electives:<br>1x60<br>(180- 270)                   | 0  | 0 - 120<br>(0-800)<br>+ traineeship<br>+ thesis viva                             | 0 - 210<br>( 0 – 1050)  |

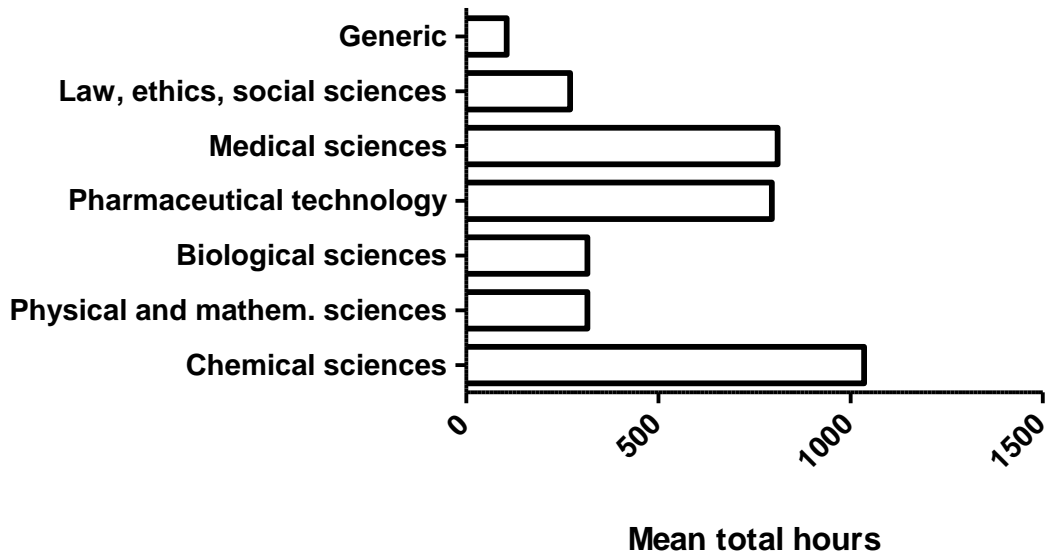
|                | 1 | 2 | 3 | 4 | 5   |
|----------------|---|---|---|---|---|
| <b>CHEMSCI</b> |   |   |   |   | Depends on<br>selected area for<br>Individual<br>Research Work for<br>Master's Thesis |

|                  |   |   |   |   |  |
|------------------|---|---|---|---|--|
| <b>PHYSMATH</b>  |   |   |   |   | Depends on selected area for Individual Research Work for Master's Thesis                                  |
| <b>BIOLSCI</b>   |   |   |   | Pharmaceutical biotechnology deals with Pharmtech tasks also (75 contact hrs, 150-200 hrs student work)   | Depends on selected area for Individual Research Work for Master's Thesis                                  |
| <b>PHARMTECH</b> |   |   |   | Selected topics from biotechnology deals with BioISCI task also   | Depends on selected area for Individual Research Work for Master's Thesis                                  |
| <b>MEDISCI</b>   |   |   |   |   | Depends on selected area for Individual Research Work for Master's Thesis                                  |
| <b>LAWSOC</b>    |   |   |   |   | Depends on selected area for Individual Research Work for Master's Thesis                                  |
| <b>GENERIC</b>   | Generic competences are incorporated in many subjects, which belong originally to other subject areas:<br>1.) Practical skills in practical work in laboratories 2) Language as part of Pharmaceutical chemistry (examine) and other subjects where literature is in English<br>3) Communication as a part of Social pharmacy as well as part of many subjects where student seminars (oral presentations) are obligatory;<br>Defence of master | Generic competences are incorporated in many subjects, which belong originally to other subject areas:<br>1.) Practical skills in practical work in laboratories 2) Language as part of Pharmaceutical chemistry (examine) and other subjects where literature is in English<br>3) Communication as a part of Social pharmacy as well as part of many subjects where student seminars (oral presentations) are obligatory;<br>Defence of master | Generic competences are incorporated in many subjects, which belong originally to other subject areas:<br>1.) Practical skills in practical work in laboratories 2) Language as part of Pharmaceutical chemistry (examine) and other subjects where literature is in English<br>3) Communication as a part of Social pharmacy as well as part of many subjects where student seminars (oral presentations) are obligatory;<br>Defence of master | Generic competences are incorporated in many subjects, which belong originally to other subject areas:<br>1.) Practical skills in practical work in laboratories 2) Language as part of Pharmaceutical chemistry (examine) and other subjects where literature is in English<br>3) Communication as a part of Social pharmacy as well as part of many subjects where student seminars (oral presentations) are obligatory;<br>Defence of master | Preparation of master thesis, Defence of master thesis, First aid and communication as part of traineeship |



|  |                             |                             |                             |                             |  |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--|
|  | thesis 5 <sup>th</sup> year | thesis 5 <sup>th</sup> year | thesis 5 <sup>th</sup> year | thesis 5 <sup>th</sup> year |  |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--|

### Hours by subject area



|            |   |
|------------|---|
| References | PROSPECTUS: UNIFORM MASTER'S PHARMACY PROGRAMME, UNIVERSITY OF LJUBLJANA, FACULTY OF PHARMACY; <a href="http://www.ffa.uni-lj.si">www.ffa.uni-lj.si</a> |
|------------|---|

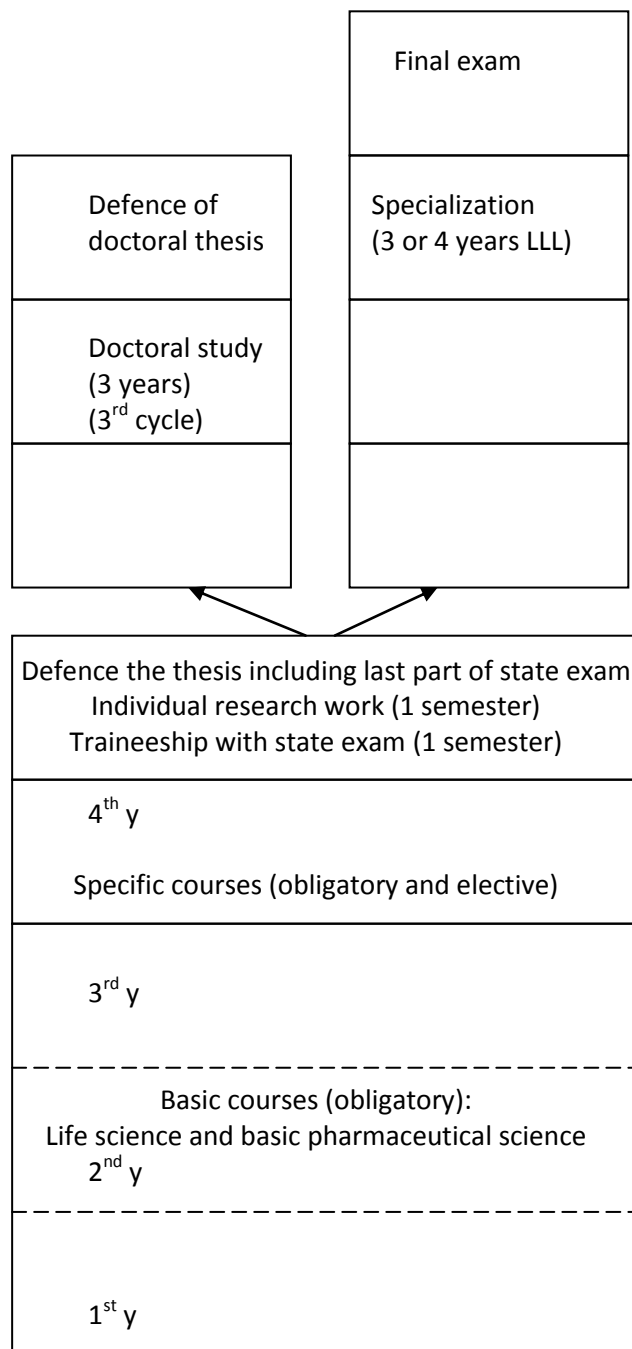
## Chapter 5. Impact of the Bologna principles

| Bologna principle   | Is the principle applied?<br>Y/N or partially | How is it applied?<br>Does your HEI have multilateral recognition and agreements?<br>Other comments.   |
|---|---|--|
| 1. <b>Comparable degrees / Diploma Supplement</b>                         | Yes   |  |
| 2. <b>Two main cycles (B and M) <u>with entry and exit at B level</u></b> | No  | Not in the programme of pharmacy, only in the programmes of laboratory medicine (B and M) and industrial pharmacy (only M)   |
| 3. <b>ECTS system of credits / links to LLL</b>                           | Yes   | We have an ECTS system lasting 6 years.<br>Our accredited courses of LLL have a similar structure (30 hrs of student workload for 1 ECTS, 11-15 hrs of 30 are contact, others are individual work)   |
| 4. <b>Obstacles to mobility</b>   | Yes   | <u>The lectures</u> are given in Slovenian. ERASMUS and other exchange students receive English study literature and individual mentoring by professors.<br><u>Practical laboratory work</u> : most subjects have an English-speaking sub-group. All written and oral instructions are given in English.<br><u>Exams</u> : written and oral exams are provided in English language.<br><u>COURSES</u> : Students can select from a list of courses offered at the UL FFA, optionally individual research projects can be carried out. They communicate preferred LA with the Coordinator. Semestrial or full-year exchange programmes are preferred except for individual research projects where more flexibility is possible.<br>Exchange students are expected to have at least intermediate level of English knowledge.<br>Obstacles: <u>Language</u> : some foreign students do not understand English sufficiently (and do not understand Slovenian)<br><u>Whole year courses</u> produce problems in one-semester mobility, due to student work load (e.g. 30 ECTS for winter semester at foreign HEI and 30 ECTS for summer semester at home faculty + additional work for the whole-year courses: student cannot pass the exam without knowledge from the first part of the course) |
| 5. <b>European QA</b>   | Yes   | University of Ljubljana as a whole has external quality assessment and was in the last years among 500 best universities (among 204 best in Europe)<br><a href="http://www.arwu.org/Country2010Main.jsp?param=Slovenia">http://www.arwu.org/Country2010Main.jsp?param=Slovenia</a><br>The faculty of pharmacy has no special European QA   |
| 6. <b>European dimension</b>  |   | Common diploma in Postgraduate European Radiopharmacy Course. The postgraduate education for the title "Radiopharmaceutical Chemist/ Radiopharmacist" consists of three modules taking place in Ljubljana (Slovenia), Zurich (Switzerland) and Leipzig (Germany). The course contents follow the guidelines of the European Association of Nuclear Medicine <u>EANM</u> .<br><br>Summer school in Immunology. Collaboration with Institute of Pharmacology, University of Bern Head: Prof. Hans Uwe Simon<br><br>Membership (institutional or/and personal) in:<br>European Association of the Faculties of Pharmacy - EAFP<br>The European Federation for Pharmaceutical Sciences - EUFEPS<br>Galenos and MedNatNet networks  |

|   |                                  |   |
|---|----------------------------------|---|
|   |                                  | European federation of medical chemistry – EFMC<br>International federation for clinical chemistry - IFCC   |
| <b>ERASMUS staff exchange to your HEI from elsewhere</b>    | 3                                | We have staff exchange through the Central European Exchange Program for University Studies (CEEPUS) networks and bilateral cooperation<br><a href="http://www.cmepius.si/en/higher-education/ceepus.aspx">http://www.cmepius.si/en/higher-education/ceepus.aspx</a>  |
| <b>ERASMUS staff exchange from your HEI to other HEIs</b>   | 0                                | We have staff exchange through the Central European Exchange Program for University Studies CEEPUS networks ( <a href="http://www.ceepus.info/">http://www.ceepus.info/</a> ) and bilateral cooperation<br>5-15 persons/year  |
| <b>ERASMUS student exchange to your HEI from elsewhere</b>  | Number of student months:<br>295 | ERASMUS Billateral agreements and exchange with 40 Faculties of Pharmacy. (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, Germany, France, Greece, Hungary, Italy, Portugal, Spain, Switzerland, Turkey, United Kingdom)<br>Additionally, we have student exchange through CEEPUS networks<br><a href="http://www.cmepius.si/en/higher-education/ceepus.aspx">http://www.cmepius.si/en/higher-education/ceepus.aspx</a><br><br>ERASMUS students OUT GOING= 295 student months<br>number of student months: (20x10, 10x5)= 250<br>Other student mobility :<br>BASILLEUS<br>CEEPUS (3x5) =15<br>EPSA (European Pharmacy Student Association) (5x3) = 15<br>IPSF (International Pharmacy Student Federation ) (15x 1) = 15 |
| <b>ERASMUS student exchange from your HEI to other HEIs</b> | Number of student months:<br>255 | Additionally, we have student exchange through CEEPUS networks<br><a href="http://www.cmepius.si/en/higher-education/ceepus.aspx">http://www.cmepius.si/en/higher-education/ceepus.aspx</a><br><br>Student exchange INCOMING = 255 student months<br>ERASMUS students incoming, number of student months:(10x10, 10x5, 5x3)= 165<br>Other student mobility: 30<br>BASILLEUS (2x10, 2x5) = 30<br>CEEPUS (3x5) = 15<br>EPSA (European Pharmacy Student Association)<br>IPSF (International Pharmacy Student Federation ) (15x 1) = 15   |

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

| The directive states   | How does / will this directive statement affect pharmacy E&T?   | If you wish to expand your answer, please add your comments below. Do you consider the directive statement valid? If not how would you change it?  |
|--|---|--|
| “Evidence of formal qualifications as a pharmacist shall attest to training of at least <u>five years' duration</u> ...”   | We introduced 5 yrs study of pharmacy through Bologna reform. In the pharmaceutical industry this prolongation was not well accepted (additional half year of traineeship, oriented in apothecary work). For work in industry graduates need additional skills, which cannot be included into 6 months traineeship in a pharmacy.   |  |
| “... <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> ”   | In general, this is good. It is not possible to get enough basic and specific knowledge/skills for pharmaceutical work in shorter time.   |  |
| “... <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> ”  | Comparing earlier traineeship of 12 months in which it was possible to include community/hospital pharmacies, laboratory medicine and industry, six months is too short a period for all these aspects. Besides, only pharmacies are covered by the EU directive, not industry and laboratory medicine. But a prolongation to more than 5 years would not be accepted.    | Industrial pharmacists (management) mainly support a dual system of education (the last part of education oriented more to industrial skills and knowledge instead of to traineeship in community / hospital pharmacies. |
| “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 is very important for <ul style="list-style-type: none"> <li>• HEI study beside competences for working in pharmacy pharmacists should have wide university education (academic literacy and critical distance for solving problems)</li> <li>• traineeship, some common skills can be organized on HEI and not separately for each student in pharmacies</li> </ul> |  |
| Directive annex  | Comments  |  |
| <b>V.6. PHARMACIST</b><br><b>5.6.1. Course of training for pharmacists</b><br><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> | Professional ethics should be obligatory for all pharmacists, not only where appropriate. Immunology and biotechnology are more and more important fields for pharmacists and should be incorporated as a basic course, not only as electives.  |  |



**Scheme for pharmacy education and training in Slovenia.**



Education and Culture DG

Lifelong Learning Programme

**PHARMINE**  
*Pharmacy Education  
in Europe*

**PCN**

*Pharmacolor  
Consultants  
Nancy*



*University of Ljubljana  
Faculty of Pharmacy*



**UNIVERSITY OF TARTU**

**Nancy-Université**  
*Université  
Henri Poincaré*



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)*