

## **Description of the study programme**

### **Second level professional higher education study programme “Pharmacy”**

2015/2016  
Academic Year

#### **1. Title of the study programme, degree, professional qualification or degree and professional qualification, aims and tasks.**

Upon graduation from the second level professional study programme “Pharmacy” the graduates will obtain a Pharmacist’s degree.

The aim of the study programme is to provide the students with the possibility to obtain higher professional education in pharmacy and pharmacist's qualification to work in the area of healthcare in the field of pharmacy.

In order to achieve the aim of the study programme and for the graduates to be able to perform the duties and tasks and to acquire the skills set in the pharmacist's occupational standard, the task of the study programme is to provide a possibility to acquire:

- drug manufacturing, analysis and determination methods,
- drug preparation principles and methods in pharmacies and drug manufacturing companies,
- circulation of drugs in the national healthcare system
- basic pharmaceutical care principles and its implementation,
- methods for the provision of professional and competent information to the public and healthcare specialists,
- application of the recommendations of the World Health Organisation and the laws and regulations of the European Union and the Republic of Latvia in the area of health,
- planning and implementation of scientific research papers, writing and publication of scientific articles and reports,
- cooperation with other healthcare specialists,
- as well as to promote development of professional attitude and further-education oriented personality.

#### **2. Expected outcomes of the study programme.**

The aim and the tasks of the study programme are set in compliance with the requirements of the law “On Regulated Professions and Recognition of Professional Qualifications” of the Republic of Latvia of 20.06.2001, Pharmacist’s occupational standard and the Regulations of the Cabinet of Ministers of the Republic of Latvia No.68 of 19.02.2002 “Minimum Requirements of Educational Programmes for the Acquisition of the Professional Qualification of Dentist, Pharmacist, Nurse and Midwife”. These regulations also contain the description of the content of the study programme. The following learning outcomes corresponding to the 7th level of EQF (European Qualifications Framework) and to the Pharmacist’s occupational standard (knowledge, skills, competences) confirm performance of the tasks of the study programme and achievement of its aim:

#### Knowledge:

- Good comprehension, ability to present and apply drug production, analysis and efficiency determination methods, drug preparation principles and methods in pharmacies and drug manufacturing companies, circulation of drugs in the healthcare system, as well as ability to evaluate the impact of manufacturing and storage conditions on the quality of drugs.
- Ability to precisely, clearly and unmistakably explain the effect, use, metabolism, side effects of drugs, give answers to the questions related to drugs, both to healthcare professionals, and non-specialists by combining and using basic knowledge of the study programme courses in particular situations, by taking into account that patients' safety and welfare are the priorities.

#### Skills:

- Ability to solve complicated situations and take independent decisions by providing and organising pharmaceutical care, making scientific research and performing self-assessment of one's activity on a regular basis.
- Ability to track the latest amendments to the pharmacy laws of the Republic of Latvia, the latest normative documents in the area of health adopted by the European Union as well as the recommendations of the World Health Organisation and to observe them in one's pharmaceutical activity.
- Ability to professional pharmaceutical information sources and to provide evidence-based information on drugs, efficient and safe use of drugs by interpreting and evaluating scientific data in the field of the use of drugs.
- Ability to apply basic business and marketing principles in pharmaceutical activity and to use information technologies necessary for the professional activity.

#### Competences:

- Ability to plan scientific research work which would be based upon the latest scientific findings, prepare projects, perform dosage form development and standardisation, prepare scientific publications and reports, manage the work of junior scientific staff, ancillary staff, assistant pharmacist's work.
- Ability to assume responsibility for one's continuous professional development as a mandatory duty of every pharmacist and find a possibility to participate in continuing education activities on a regular basis.
- Ability to facilitate development of pharmaceutical care and to increase the prestige of pharmacist's profession, participate in discussions on public decisions important for the industry.
- Ability to promote healthy lifestyle and disease prevention within the framework of one's competence by paying special attention to the risk groups; perform expert diagnostics, be a full-fledged member of the healthcare team and to cooperate with other healthcare specialists on the basis of the principle of mutual respect.

The study content meets the requirements of the law "On Regulated Professions and Recognition of Professional Qualifications" of the Republic of Latvia of 20.06.2001, Pharmacist's occupational standard and the Regulations of the Cabinet of Ministers of the Republic of Latvia No.68 of 19.02.2002 "Minimum Requirements of Educational Programmes for the Acquisition of the Professional Qualification of Dentist, Pharmacist, Nurse and Midwife" and the 7th level of EQF (European Qualifications

Framework). According to the law “On Regulated Professions and Recognition of Professional Qualifications” of the Republic of Latvia of 20.06.2001 a Pharmacist’s diploma confirms that the respective person has acquired relevant theoretical and practical knowledge about drugs and substances used in drug manufacturing, pharmaceutical technology and control, use of drugs and about the regulatory enactments in the field of pharmacy. According to the Pharmacist’s occupational standard, a pharmacist is a senior healthcare specialist who organises and provides pharmaceutical care; ensures circulation, preparation, standardisation, control, supervision, research, expertise of documents related to drugs, informative and consultative activity in the field of pharmacy and undergoes continuous professional development.

The study plan envisages 20 CP in each semester, 1 CP corresponds to the study-load of 40 hours per week out of which not less than 40% is formed by contact hours pursuant to the Regulations of the Cabinet of Ministers No. 512 of 26.08.2014 “Regulations on the State Standard of Second Level Professional Higher Education.”

According to Article 16 of the law “On Regulated Professions and. Recognition of Professional Qualifications” of the Republic of Latvia the pharmacist’s diploma certifies that the owner thereof has acquired a study programme in the duration of at least five years which comprises: a full-time university education of at least four years in duration and traineeship for at least six subsequent months during the theoretical and practical training in a general-type or open-type pharmacy or in a closed-type pharmacy or a pharmacy of a medical treatment institution.

The study programme includes Propedeutics placement (1CP), Pharmacognosy placement (1CP) and State placement (26 CP). The Propedeutics placement shall take place in the second year of studies and its purpose to acquaint with the work of pharmacies, to obtain the first skills for performing diverse work tasks at a pharmacy, mainly related to the preparation of drugs. The Pharmacognosy placement is integrated in the study subject “Pharmacognosy” with a phytopharmacy course, and its purpose is to apply practical knowledge of students about medical plants, herbs and biologically active substances. A placement of 1 week is included in the study course “Industrial Dosage Form Technology” which shall take place at drug manufacturing companies.

The State placement shall take place in the fifth year of studies. The aim of the State placement is to consolidate the theoretical knowledge and the practical skills of students, the placement shall last for 6 months and take place in a general-type or a pharmacy of a medical treatment institution. The State placement is divided in four sections with a different amount of CP by trying to observe the actual application of each section in a pharmacist’s work (Practical and Social Pharmacy, Pharmaceutical Analysis, Pharmaceutical Dosage Form Technology, Hospital Pharmacy.) The learning outcomes of the State placement:

- Hospital Pharmacy (1CP) – a student has a good knowledge and is able to explain circulation of drugs in a closed-type pharmacy, work tasks of a hospital pharmacist, is able to distinguish the specific character of a closed-type pharmacy from an open-type pharmacy. The theoretical knowledge obtained in such study subjects as Practical Pharmacy, Social Pharmacy and Pharmaceutical Care, Pharmaceutical Dosage Form Technology shall be used in this section of the placement.
- Pharmaceutical Dosage Form Technology (4 CP) - has a good knowledge and is able to present drug preparation principles and methods in a pharmacy, drug preparation organisation in a pharmacy, is able to prepare all dosage forms independently, knows

incompatibility of different ingredients. Is able to analyse complicated situations in preparation of dosage forms independently, as well as take decisions by performing technological operations. Is able to develop dosage forms. The theoretical knowledge obtained in such study subjects as Laboratory Equipment, Pharmaceutical Dosage Form Technology, Industrial Dosage Form Technology, Physical Pharmacy shall be used in this section of the placement.

- Pharmaceutical Analysis (5 CP) - has a good knowledge, is able to present and apply drug analysis and efficacy determination methods and assess the quality of the drugs prepared in a pharmacy. Is able to analyse complicated situations and take decisions independently in relation to the efficiency of the drugs prepared in a pharmacy. The theoretical knowledge obtained in such study subjects as Inorganic and Organic Chemistry, Qualitative and Quantitative Analysis, Pharmaceutical Chemistry, Physical Pharmacy shall be used.

- Practical and Social Pharmacy (15 CP) - has a good knowledge, is able to present and perform circulation of drugs in the healthcare system, is able to explain effect, use, metabolism, side effects of drugs correctly and clearly, give answers to the questions related to drugs, both; to healthcare professionals, and non-specialists. Is able to analyse complicated situations and take decisions independently by providing and organising pharmaceutical care. Is able to follow the changes in the legislative acts of the Republic of Latvia regulating the activity in the field of pharmacy and observe them in his or her pharmaceutical activity. Is able to apply basic business and marketing principles in the pharmaceutical activity, as well as use the information technologies necessary for professional activity. The knowledge obtained in such study subjects as Practical Pharmacy and Pharmaceutical Legislation, Social Pharmacy and Pharmaceutical Care, Pharmacology, Pharmacotherapy, Pharmaceutical and Medical Chemistry shall be used.

A placement programme shall be established and approved for each placement, is made available in the e-studies environment, a student shall prepare a placement report on each section of the placement pursuant to the placement programme for which he or she will receive an assessment.

**3. Admission requirements (specify admission requirements of the study programme). If the programme is implemented in a foreign language, applicant's language proficiency should be tested. Specify the link on RSU website with the relevant information.**

According to the admission rules, for the admission to the Faculty of Pharmacy the results of the centralised examinations shall be evaluated in Chemistry, Latvian and foreign language. The main admission requirement shall be the assessment in the centralized examination in Chemistry. In case of equal number of points, the competition shall be affected by the centralized examination assessment in Latvian and in the foreign language. Part-time students (with pharmacist's **assistant** qualification) shall be admitted on the basis of the average grade of the secondary school **and** 1st Medical College's certificates.

In consideration of the fact that the study process contains over ten study courses which require knowledge in Chemistry, the determining factor in the admission requirements shall be the centralised examination grade in Chemistry.

Student admission is carried out in accordance with the Admission Regulations approved by the RSU Senate for the respective

academic year and external regulations. According to Paragraph 3 of the Regulations of the Cabinet of Ministers No. 846 “Regarding Requirements, Criteria and Procedure for Admission to Study Programmes” of 10 October 2006, the rules for admission to study programmes (hereinafter referred to as the admission rules) for the next academic year shall be drawn up, approved and published (also on the website) each year by 1 November.

The technical procedures of admission are established and described in Paragraph 7.1 of the RSU Process Description No. 7 “Service Provision for Students”.

RSU applicants may apply electronically by using the website <http://www.rsu.lv/studiju-iespejas/uznemsana>.

According to the Regulations of the Cabinet of Ministers No. 36 “Regulations Regarding Recognition of the Study Results Achieved in Previous Education or Professional Experience”, one is entitled to submit an application to the Rīga Stradiņš University (RSU) regarding recognition of knowledge, skills and competences acquired in previous education or professional experience in a study programme or part thereof implemented by the University.

The decision on the recognition of learning outcomes achieved in previous education or professional experience is made by the Commission on Recognition of Study Results Achieved in Previous Education or Professional Experience established by the University. Its rights, duties, rules of formation, as well as specific conditions of the procedure for recognition of study results achieved in previous education or professional experience are established in the Regulations on Recognition of Study Results Achieved in Previous Education or Professional Experience at Rīga Stradiņš University.

To start recognition of the learning outcomes, the following should be submitted to the Commission on Recognition of Study Results Achieved: an application; documents confirming the learning outcomes in the previous education or professional experience; a bank payment order for the payment made.

The application is examined and the decision is made within one month from the date of receipt of the application.

In the academic year 2015/2016 this option was used by 11 persons within the study direction “Health Care” – none of them in the Pharmacy study programme.

**4. Curriculum of the study programme (list of study courses and study modules, their volume in credit points, their division into compulsory, restricted elective or free elective parts by specifying their volume in credit points, plan of their implementation).**

The length of the study programme shall be 5 years, the total amount of the credit points in a full-time programme shall be 200 CP (300 ECTS) and in part-time programme 180 CP (270 ECTS).

The list of study courses in the academic year 2015/2016:

No	Study Courses	CP	Study year
<i>Compulsory</i>			
1.	Introduction to Pharmacy and Placement in Propaedeutics	2	

2.	Mathematics and Informatics	2	I
3.	Pharmacy Terminology in English	5	I; II
4.	Pharmacy Terminology in Latin	2	I
5.	Physics	2	I
6.	Environmental Health	2	II
7.	Public Health and Epidemiology	2	IV
8.	History of Pharmacy	2	III
9.	Communication Psychology	2	I; II
10.	Basic Statistical Methods	2	III
Total: 23 CP			
<i>Elective</i>			
1.	Introduction to the History of Pharmacy	2	I
2.	Sports for Health	2	I
3.	Introduction to Pharmaceutical Care	2	I
4.	Medical Terminology in Latvian	2	I
5.	Medical Terminology in Russian	2	I
6.	Philosophical Anthropology		I
7.	History of Latvian Pharmaceutical Education	2	III
8.	History of Pharmacy in Latvia	2	III
Total: 16 CP			

Basic theoretical courses:

No	Study Courses	CP	Study year
<i>Compulsory</i>			
1.	Inorganic Chemistry	5	I
2.	Cytology and Genetics	2	I
3.	Human Anatomy	3	I
4.	Plant and Animal Biology	4	I
5.	Organic Chemistry	8	I;II
6.	Microbiology	4	I;II

7.	Normal Physiology	5	II
8.	Physical Pharmacy		II
9.	Medical Biochemistry	5	II;III
10.	Pathology	4	II;III
11.	Disaster Medicine and Toxicology and First Aid	3	IV
Total: 47 CP			
<b><i>Elective</i></b>			
1.	Systematics of Angiosperms	2	I
2.	Chemistry and Cosmetics	2	II
3.	Clinical Oncology	2	V
4.	Medicinal Mineral Waters and Mud	2	III
5.	Introduction to Psychosomatics	2	III
Total: 10 CP			

Professional specialization courses:

No	Study Courses	CP	Study year
<b><i>Compulsory</i></b>			
1.	Qualitative Analysis	4	I
2.	Quantitative Analysis	4	II
3.	Pharmacognosy with Phytopharmacy Course	7	I;III
4.	Study Placement in Pharmacognosy	1	II
5.	Medical Chemistry	2	III
6.	Pharmaceutical Chemistry	11	III;IV
7.	Pharmaceutical Dosage Form Technologies	8	III
8.	Pharmacology	7	III;IV
9.	Industrial Dosage Form Technologies	9	III;IV
10.	Clinical Research	2	III

11	Healthcare Goods	2	III
11.	Toxicological Chemistry	5	IV
12.	Practical Pharmacy and Pharmacy Legislation	5	IV
13.	Social Pharmacy and Pharmaceutical Care	3	IV
4.	Pharmaceutical Information	3	IV
15.	Pharmacotherapy	3	IV
16.	State Placement	26	V
17.	Research Paper, National degree Examination	12	V
Total: 115 CP			
<b><i>Elective</i></b>			
1.	Pharmacist's Ethics and Deontology	2	I
2.	Instrumental Methods of Analysis	2	II
3.	Drug Registration	2	III
4.	Integrated Pharmaceutical Chemistry	2	IV
5.	Pharmacogenetics	2	IV
6.	Specific Dosage Forms	2	IV
7.	Veterinary Pharmaceutical Legislation	2	IV
8.	Pharmacy Informatics	2	IV
9.	Gerontopharmacotherapy	2	IV
10.	Express Diagnosis of Poisoning	2	IV
11.	Pharmacy Policy and Economics	2	IV
12.	Hospital Pharmacy	2	V
13.	Perspective Dosage Forms	2	V
Total: 26 CP			

**5. Practical implementation of the study programme: study methods and forms, distance learning methods). Assessment system (educational criteria and assessment methods for reaching and assessment of learning outcomes, forms and assessment procedure).**



Full-time studies shall be organised as a study system of regular classes, while part-time studies shall be organised in cycles. Lectures, seminars, laboratory works shall be used in the implementation of the study programme which shall be performed by the students according to individual tasks, as well as situational tasks, problem discussions, small group work, development and defence of individual and group projects, field trips to Latvian drug manufacturing companies, wholesalers, hospitals and open-type pharmacies. Case and problem situation analysis shall be used where students have to use and integrate their knowledge in several study subjects (the knowledge of Pharmacology, Pharmacotherapy, Dosage Form Technology shall be used for performance of the task in Social Pharmacy and Pharmaceutical Care). The OSCE shall be used in the study courses “Social Pharmacy” and “Pharmaceutical Care” and in the National degree examination “Pharmacology, Pharmacotherapy and Dosage Form Technology”. Descriptions of study courses, obligatory literature and information materials shall be included in the e-learning system (moodle) of the institution of higher education, students shall have the possibility to take tests, view animations, submit study papers (Normal Physiology, Social Pharmacy and Pharmaceutical Care) in particular study courses. A Turnitin tool has been introduced which helps a lecturer to control cases of plagiarism and it is also used in correcting of papers. Video lectures shall be used in particular courses (Pharmaceutical Chemistry).

During the semester the knowledge of the students is assessed in seminars, colloquia, practical work tests; at the end of the semester or study course the students take a written exam, the results of which are assessed jointly by at least two lecturers. The knowledge and skills of the students is constantly assessed on the basis of a complex assessment scheme what motivates the students to study systematically during the entire study process. An accumulated examination shall be practised in several study subjects – a student shall receive knowledge assessment on the basis of his or her learning outcomes during the entire acquisition of the study subject, the mark resulting from several courses shall include the student’s pro rata participation in seminars and the mark for presentation, mark for the performed laboratory works and the mark of the final examination is only one of these components. Students are informed on the assessment criteria at the beginning of each subject. The knowledge assessment may be performed in grades – from 10 (with distinction) to 4 (almost satisfactory), as well as non-differentiated - “passed” or “not passed”. In case of unsatisfactory assessment (not passed) the student undergoes repeated knowledge testing as provide for in the study regulation I. The knowledge assessment scale is explained and available in the RSU Study regulation 1.

In compliance with the requirements of the Regulations of the Cabinet of Ministers of 13 May 2014 No 240 “Regulations on the State Standard of the Academic Education”, the students' learning outcomes are assessed according to the 10-grade scale:

- with distinction (10) — the knowledge, skills and competencies exceed the acquisition requirements for the study programme, study module or study course and attest the ability to conduct independent research and deep comprehension of problems;
- excellent (9) — the knowledge, skills and competencies fully comply with the acquisition requirements for the study programme, study module or study course, the student has the ability to use the acquired knowledge independently;
- very good (8) — the acquisition requirements of the study programme, study module or study course are fully met but there is lack of in-depth comprehension of some issues to use the knowledge for more complicated problem solving;

good (7) — the acquisition requirements of the study programme, study module or study course are met in general but at times there is lack of the ability to use the acquired knowledge independently;

almost good (6) — the acquisition requirements of the study programme, study module or study course are met but there is lack of the ability to comprehend problems in depth and use the acquired knowledge;

satisfactory (5) — the study programme, study module or study course is acquired in general, but there is insufficient comprehension of some problems and inability to use the acquired knowledge;

almost satisfactory (4) — the study programme, study module or study course is acquired in general, but there is insufficient comprehension of some basic conceptions and there are considerable difficulties to put the acquired knowledge into practice;

satisfactory (3) — the knowledge is superficial and insufficient, the student is not able to use it in particular situations;

very unsatisfactory (2) — there is only superficial knowledge about individual problems, the major part of the study programme, study module or study course has not been acquired;

extremely unsatisfactory (1) — there is no comprehension of the basic problems of the subject and almost no knowledge in the study programme, study module or study course.

During exams and tests (for example, computerised tests, etc.) lecturers may evaluate learning outcomes also in percentage, by making them equal to the following evaluations on a 10-grade scale:

from 96 % to 100 % - with distinction (10);

from 85 % to 95 % - excellent (9);

from 75 % to 84 % - very good (8);

from 70 % to 74 % - good (7);

from 65% to 69% - almost good (6);

from 60% to 64% - satisfactory (5);

from 55 % to 59 % - almost satisfactory (4);

from 40 % to 54 % - weak (3);

from 20 % to 39 % - very weak (2);

from 0 % to 19 % - extremely weak (1).

## 6. Analysis of strengths, weaknesses opportunities and threats of the study programme:

Advantages and problems due to internal and external factors	
Internal factors	
<u>Strengths</u>	<u>Weaknesses</u>
1. Traditions and reputation of the Faculty of Pharmacy.	1. The average age of the academic staff, change of generations.

<ol style="list-style-type: none"> <li>2. Qualification and experience of the academic staff.</li> <li>3. Study opportunities for State budgetary funding (full-time studies).</li> <li>4. Professional study programme and large proportion of practical classes.</li> <li>5. Objective and fair assessment system.</li> <li>6. Implementation of part-time studies which allows combine studies with work.</li> </ol>	<ol style="list-style-type: none"> <li>2. A period longer than 15 years (1988 - 2005) during which no doctoral thesis was defended in pharmacy in Latvia, as a result of which there is a lack of younger generation experts in pharmacy with Dr.pharm degree.</li> <li>3. Limited material and technical base and resources.</li> <li>4. Small number of students.</li> </ol>
<b>External factors</b>	
<p><u>Opportunities</u></p> <ol style="list-style-type: none"> <li>1. High competition for the State -funded study places.</li> <li>2. Promotion of cooperation with other scientific institutions and institutions of higher education, drug manufacturers.</li> <li>3. Attraction of foreign students.</li> <li>4. Information about pharmacy as a perspective area, subject to attracting funds and development from State institutions, the lack of pharmacists in the labour market.</li> <li>5. Lecturers' exchange of experience in foreign countries.</li> <li>6. Involvement of visiting lecturers with a purpose to raise the quality of studies.</li> <li>7. The study programme " Pharmacist assistant" established by the RSU Red Cross Medical College allowing expand the range of applicants in part-time studies.</li> </ol>	<p><u>Threats</u></p> <ol style="list-style-type: none"> <li>1. A competitive study programme in the University of Latvia.</li> <li>2. Decrease of the number of students in Latvia in general.</li> <li>3. Remuneration in an institution of higher education is lower than in the pharmacy industry which prevents attraction of the younger generation academic staff.</li> <li>4. The different level of knowledge of the graduates of secondary schools.</li> <li>5. There is not a considerable difference of remuneration between an ordinary pharmacist and assistant pharmacist, therefore there is a lack of motivation to study in the part-time study programme.</li> <li>6. Pharmacists' assistants remuneration limiting the range of the potential applicants in the part-time study programme.</li> <li>7. Decrease of the total level of</li> </ol>

	knowledge of the graduates of 1st Medical College (of the part-time study programme).
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### **7. Employment prospective of programme graduates by including references to information sources to justify the statements.**

All full-time graduates of 2016 work in the sector, 26 of them work in pharmacies, while 5 graduates work in other companies related to the sector (foreign drug manufacturer representative agencies, different laboratories.) 1 of the part-time graduates of 2016 does not work in the pharmacy sector, 6 of them work in pharmacies. On 8 June 2016 the Latvian Association of Pharmaceuticals Wholesalers, Association of Pharmacy Owners, Society of Pharmacists turned to the Ministry of Health of the Republic of Latvia (MH) with a joint application noting that more than a half of pharmacists in Latvia are older than 50 years but a lot of pharmacists continue their work after reaching the retirement age. The submitters think that more attention should be paid to the training programmes of young pharmacists so that the young specialists could ensure proper change of generations. The submitters consider that the whole potential of the education institutions is not used in preparation of the young pharmacists and ask the MH to organise a discussion in order to prevent the lack of pharmacists in Latvia. According to the data of the Society of Pharmacists of Latvia the number of the recorded pharmacists is sufficient for the needs of Latvian pharmacies, however, employers have an opinion that the competition among pharmacists is insufficient. There is disproportion between regions – there is a lack of pharmacists in the regions with little population density and in the Kurzeme region both in private and chain pharmacies. There is also a lack of pharmacists in closed-type pharmacies mainly due to the non-competitive remuneration. It may be concluded on the basis of the aforementioned information that the graduates of the study programme have good employment perspectives.

A study programme assessment questionnaire has been completed by 11 graduates or 34% of the full-time graduates of 2016, almost all the respondents have been satisfied with the choice of the institution of higher education and study programme (see Annex 7 “Summary of Survey Results on Student Satisfaction about the Quality of Studies and Their Application in Monitoring the Quality of the Study Programme.”). The recommendations provided by the graduates in the survey have been taken into account for further implementation of the study programme – the necessity to learn the names of plants and herbs in Russian has been deleted from the study course “Pharmacognosy” with a phytopharmacy course and a joint National degree examination consultation in Pharmacognosy shall be organised. Changes have also been made in the sequence of the National degree examinations – the National degree examination in Pharmacology and Pharmacotherapy and the National degree examination in Pharmaceutical Care will be organised at the beginning of the National degree examination session.

In the academic year 2015/2016 students had to take 3 National degree examinations. The National degree examinations “Pharmaceutical Chemistry and Pharmacognosy” are focused on the development of the students’ knowledge, skills and competences, the pharmacognosy section of the examinations has been prepared as individual situation tasks so that it was possible to recognise a particular medical plants by using herbariums and drugs, know its groups of biologically active substances, type of

use and effect. The issues dedicated to Pharmaceutical and Medicinal Chemistry are also made in such a way so that the answers to the questions could be found by synthesising the knowledge obtained in the organic, inorganic chemistry courses, courses of qualitative and quantitative analysis, courses of toxicological chemistry and physical pharmacy.

The second National degree examination “Dosage Form Technology and Practical Pharmacy” includes situation tasks, correctness of the technological solution, as well as the last changes in the pharmaceutical legislation.

The third National degree examination in Pharmacology, Pharmacotherapy and Pharmaceutical Care includes a theoretical part – questions in Pharmacology and situation tasks in Pharmacotherapy. The practical part consists of OSCE (objective structured clinical examination) in the Pharmaceutical Care which includes 2 simulated pharmaceutical care situations. The situation tasks have been prepared as a simulation of the situations occurring in a pharmacy where a student should demonstrate his or her knowledge, skills and competences by performing the function of a pharmacist as a consultant and providing a pharmaceutical care service to the pharmacy customer. Simulated patients will participate in the play of situations, the consultation will be recorded on dictaphone and it will be assessed by applying the developed “Consultation Assessment Criteria”.

At the end of studies students shall develop a research paper on the current issues in pharmacy – the subjects of the research papers shall include Social Pharmacy and Pharmaceutical Care (“Lack of Adherence = Irregular Use of Drugs?”, “Cooperation of Pharmacists and Physicians in Latvia.”), analysis of pharmacologies and pharmacotherapies (Analysis of the Trends of the Use of Asthma Medications and the Factors Affecting the Therapy Effect; Hyporesponsiveness of the Medications Stimulating Erythropoiesis and Resistance in Hemodialysis Patients, Its Reasons and Affecting Factors; Toxic Hepatitis Caused by Tuberculosis Medications - Description and Risk Factors; Erectile Dysfunction and the Medications Used in Its Treatment), pharmacy history (the outstanding German chemist Justus Liebig – a person and scientist; History of the Oldest Pharmacies of the Former Cesis District; History of the Oldest Pharmacies of the Former Jekabpils District), phytopharmacy and pharmacognosy (Report on the Usage Possibilities of Natural Substances in Case of Dyslipidemia). Papers in the Industrial Dosage Form Technology have been developed under supervision of Assoc. Prof. I.Bārene and Doc. I.Daberte, four papers have been developed in cooperation with JSC “Olainfarm” – “Impact of Packaging on Stability of Furaginum tablets”, “Efficiency Assessment of the Means of Personal Protection in the Manufacturing Process of Pharmaceutical Preparations”, “Finished Dosage Forms – Powder for Preparation of Solution for Internal Use - Development”, two papers have also been developed in cooperation with A/S “Grindeks” – “Development and Validation of Bromheksine 8 mg Tablet Solution Method”, “Development of Ftorafur 200 mg and 400 mg Hard Pellet Solution Method and Validation of the Quantitative Determination Method.”

Several students have developed research papers in the Pharmaceutical Pharmacology laboratory of the Latvian Institute of Organic Synthesis which indicates the ability of the students to integrate into a team of a scientific institute. The students of the 4th and 5th year of studies actively participated in the International Student Scientific Conference and obtained several awarded places.

Therefore, the graduates who have successfully defended the Research paper and passed the National degree examinations have

achieved the learning outcomes.

## **8. Introduction of proposals (if applicable) given within the framework of the licensing of the study programme during the previous accreditation (if applicable).**

The study programme has been accredited within the framework of the Healthcare direction in 2013. There have been no recommendations.

## **9. Information about external relations:**

### **9.1. Cooperation with employers and professional organisations in Latvia and abroad.**

To promote cooperation with employers' organisations, their involvement in the education of prospective professionals, as well as to increase the RSU students' competitiveness in the labour market, each year the university hosts a Career Week. It includes presentations of employer organisations, where representatives of employers tell about career opportunities in the organisation they represent, offer RSU students and graduates current vacancies, as well as provide practical advice on how to succeed in the labour market. More than 30 employers participated in the Career Week from 27 to 29 October 2015.

The employers of the graduates of the Faculty of Pharmacy are mainly pharmacies; the information from the employers is received by assessing the skills of the students of the 5th year of studies during the State placement. The students have had their placement in all largest pharmacies of Latvia, both; chain pharmacies, and private companies ("Mēness aptiekas"; "Euroaptieka"; "Benu aptiekas"; "A aptiekas", "Insbergs Dzirciema aptieka", closed-type pharmacies – contracts have been concluded on placement with the Riga East University Hospital (RAKUS), "Psychiatry and Narcology Centre", Jurmala Hospital, Rezekne Hospital). With the support of SIA "Mēness aptiekas" the academic capacity building grant in pharmacy has been established in the Rīga Stradiņš University. SIA "Mēness aptiekas" has established a placement grant for pharmacy students.

Representatives of the Employers' Confederation of Latvia and Society of Pharmacists of Latvia have participated in the State Examinations Commission of 2016, as well as take part in the work of the Council of the Faculty of Pharmacy on a regular basis. According to the Regulation of the RSU State Examinations Commission, the Chairman of the Commission and at least half of the Commission staff were representatives of the professional organisations or employers of the sector. Chairman of the State Examinations Commission was the President of the Society of Pharmacists of Latvia Kitija Blumfelde, the Commission staff included Vizma Vīksna – Head of Pharmacy Department of SIA "BENU Aptieka Latvija"; Alla Čudovska, Member of the Board of A "Sentor Farm aptiekas"; Valda Ozoliņa, Manager of SIA "VS un Ko" Sarkandaugava pharmacy; Ilona Rūķe, Member of the Board of SIA "Limbažu aptieka".

In the academic year 2015/2016 JSC "Olainfarm" continued to implement a grant project for the students of the Faculty of Pharmacy.

### **9.2. Quantitative indicators of international exchange of students and academic staff.**

In the academic year 2015/2016 1 student studied for 1 semester in Poland within the framework of the Erasmus+ programme, 1 student had part of his State placement in a pharmacy in Germany. 3 guest students developed a research paper within the

framework of the Erasmus+ programme (Portugal, Spain, the Czech Republic).

**9.3. Cooperation with local and foreign institutions of higher education and colleges that implement similar study programmes by indicating whether the institution has cooperation with libraries of other institutions of higher education or colleges.**

Currently there is no cooperation with a similar study programme implemented by the University of Latvia, but the RSU students and LU pharmacy students jointly participate in the work of the Latvian Pharmaceutical Students association and its organised events. There is also cooperation with RTU in the implementation of particular study courses. The cooperation with the RSU Red Cross Medical College has been started in connection with the establishment of the study programme “Pharmacist Assistant“.

**9.4. International certificates, accreditation and similar.**

The Rīga Stradiņš University has been certified in conformity with international standard ISO 9001:2008 “Quality management system, Requirements” since 2002. Fields: higher education, lifelong learning, research, assessment of research results, assessment of knowledge and skills, issue of documents certifying the acquisition of the degree of education, higher professional education, academic degree, scientific degree.

At the end of 2014, re-certification took place that testifies to the fact that Rīga Stradiņš University keeps continuously developing and fitting in unified European Higher Education Area by improving the quality of education and raising the prestige of the university so that RSU’s academic staff and students would be eager to work and study at Rīga Stradiņš University.

Document certifying the conformity to the requirements of ISO 9001:2008 is available on RSU website: [http://www.rsu.lv/images/stories/dokumenti/sertifikati/ISO\\_LV\\_2014.pdf](http://www.rsu.lv/images/stories/dokumenti/sertifikati/ISO_LV_2014.pdf)

On February 2016, PASCL experts paid a visit to RSU, within the frame whereof RSU is recognised as a student-centred university (see Paragraph 9.2. of the Description of Study Direction).

**10. Conformity of the study programme to the needs of the labour market, employer survey results.**

On 8 June 2016 The Latvian Association of Pharmaceuticals Wholesalers, Association of Pharmacy Owners, Society of Pharmacists turned to the Ministry of Health of the Republic of Latvia (MH) with a joint application by specifying that more than a half of pharmacists in Latvia are older than 50 years but a lot of pharmacists continue their work after reaching the retirement age. The submitters think that more attention should be paid to the training programmes of the young pharmacists so that the young specialists could ensure proper change of generations. The submitters consider that the whole potential of the education institutions is not used in preparation of the young pharmacists and asks the MH to organise a discussion in order to prevent the lack of pharmacists in Latvia. According to the data of the Society of Pharmacists of Latvia the number of the recorded pharmacists is sufficient for the needs of Latvian pharmacies, however, employers are of the opinion that competition among pharmacists is not sufficient. There is disproportion between regions – there is a lack of pharmacists in the regions with little population density and in the Kurzeme region both; in private and chain pharmacies. There is also lack of pharmacists in closed-type pharmacies mainly due to the non-competitive remuneration.

It is mentioned in the Public Health Guidelines 2014 – 2020 (available at <http://polsis.mk.gov.lv/documents/4965>): “Irrespective of the fact that availability of pharmacies in terms of their number may be evaluated as good, insufficiency of specialists (pharmacists) is observed as compared to the current number of pharmacies in the country and in the coming years decrease in the number of pharmacies is expected just due to the lack of specialists. However, the situation may not be considered as critical because the average statistical indicators show that the number of pharmacies is sufficient in the country taking into account the population indicator per one pharmacy in Latvia and other European Union member states.

The role of a pharmacist in the primary healthcare is related to a pharmacist’s support to the family physician’s team. A pharmacist must find an individual approach to every patient by supporting physicians in ensuring rational medical treatment and solving those problems of patients which are foreseeable or have appeared due to the use of medications, including chronic patient care.”

Employers are satisfied with the graduates of the study programme and take part in the State placement supervision of the 5th year students on a regular basis and are inviting the students to implement the State placement in their pharmacies. In the academic year 2015/2016, SIA “Benu aptiekas” participated in the supervision of State placement instruction, while AS “Mēness aptiekas” established a placement grant.

**11. Prospective evaluation of study programmes taking into account priorities specified in development planning documents at national level, Latvia's tasks in implementing the strategy of the European Union, as well as conformity of the study programme to the recommendations for the development of the European Higher Education Area.**

The study programme meets the requirements of the laws and regulations of the Republic of Latvia in the area of higher professional education- the law “On Regulated Professions and Recognition of Professional Qualifications”, the Regulations of the Cabinet of Ministers of the Republic of Latvia No.68 of 19 February 2002 “Minimum Requirements of Educational Programmes for the Acquisition of the Professional Qualification of Dentist, Pharmacist, Nurse and Midwife”, the Directive 2005/36/EC of 7 September 2005 “On the Recognition of Professional Qualifications” and the Directive 2013/55/EU of 20 November 2013.

Head of Study Programme: \_\_\_\_\_ /Baiba Mauriņa/

*Signature, deciphering*

Date: \_\_\_\_\_

AGREED ON:

Rīga Stradiņš University

Meeting of the Council of the Faculty of Pharmacy

of 14 September 2016