APPROVED BY

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Education and Science of the
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DESCRIPTOR OF THE STUDY FIELD OF PHARMACY

CHAPTER I

GENERAL PROVISIONS

1. The Descriptor of the study field of Pharmacy (hereinafter referred to as the "Descriptor") establishes special requirements applied to the college and integrated university study programmes of the study field of Pharmacy (hereinafter referred to as the study programmes of Pharmacy).

2. The Descriptor has been prepared in accordance with the Law on Higher Education and Research of the Republic of Lithuania, Law on Pharmacy of the Republic of Lithuania and Law on the Recognition of Regulated Professional Qualifications of the Republic of Lithuania taking into account Resolution No 535 of the Government of the Republic of Lithuania of 4 May 2010 "On the Approval of the Descriptor of the Lithuanian Qualifications Framework", Order No V-2212 of the Minister of Education and Science of the Republic of Lithuania of 21 November 2011 "On the Approval of the Descriptor of Study Cycles", Order No V-501 of the Minister of Education and Science of the Republic of Lithuania of 9 April 2010 "On the Approval of the Descriptor of General Requirements for Degree-Awarding First Cycle and Integrated Study Programmes", Order No V-826 of the Minister of Education and Science of the Republic of Lithuania of 3 June 2010 "On the Approval of the Descriptor of General Requirements for Master's Study Programmes", Order No V-2463 of the Minister of Education and Science of the Republic of Lithuania of 15 December 2011 "On the Approval of Recommendations for Developing the Descriptor of a Study Field or Study Fields" and considering Recommendation 2006/962/EC of the European Parliament and of the Council on key competences for lifelong learning, Statement of the International Pharmaceutical Federation (FIP) of Policy on Good Pharmacy Education Practice, approved by the FIP Council in September, 2000, in Vienna.

3. Study programmes of the study field of Pharmacy can be conducted in colleges as first cycle professional Bachelor's studies or in universities as integrated studies.

4. Purposes of the Descriptor are as follows:

4.1. To help higher education schools in preparing, updating, implementing and assessing study programmes of the study field of Pharmacy;

4.2. To orient experts assessing the study programmes of the study field of Pharmacy;

4.3. To inform students, social partners and society about knowledge and abilities acquired at the studies of the study field of Pharmacy.

5. The Descriptor applies to the study field of Pharmacy, and branch of Pharmacy Techniques.

6. Upon completion of the study programmes of the study field of Pharmacy, the graduates acquire following higher education qualification:

6.1. Upon completion of college study programmes of the study field of Pharmacy, higher college education and qualification degree of professional Bachelor of Pharmacy are acquired, with the diploma of professional Bachelor of Pharmacy issued to certify the qualifications acquired;

6.2. Upon completion of integrated study programmes of the study field of Pharmacy, higher university education and qualification degree of Master of Pharmacy are acquired, with the Master's diploma issued to certify the qualifications acquired.

7. Granted qualification degree of professional Bachelor corresponds to the sixth, while the qualification degree of Master to the seventh level of the Lithuanian Qualifications Framework and European Qualifications Framework for Life-Long Learning.

8. College studies train pharmacy specialists for practical activities in the field of pharmacy. During college studies, students acquire theoretical knowledge and practical skills of biomedicine, social and natural sciences needed for pharmacy activities in various fields of health promotion, by applying the latest technologies on professional practice conditions in pharmacies and other companies engaged in pharmaceutical activities.

9. College study programme can be major studies leading to qualification degree of professional Bachelor of the study field (branch) and pharmacist assistant's qualification, or studies of two fields – the major study field of Pharmacy and the minor study field established by the higher education school and chosen by the student leading to double qualification degree of Professional Bachelor of the major study field (branch) of Pharmacy and the minor study field (branch) and qualification of pharmacist's assistant. Requirements for the studies of the minor study field (branch) are subject to approval by the higher education school.

10. Professional and research activities of pharmaceutical students of integrated studies of Pharmacy must be based on provision and practical application of the latest pharmaceutical knowledge and methods, understanding of health policy, coordination and management of provision of pharmaceutical services, preparation for academic and research work. Integrated study programme must contain methodological subjects of the science and subjects of the study field of Pharmacy. Study programme must be oriented to development of pharmacist's practical, managerial and leadership, educative and research competences.

11. Integrated study programme of the study field of Pharmacy is major study programme leading to Master's degree of the field and pharmacist's qualification. Master's Degree of the study field of Pharmacy certifies that its holder is trained to carry out pharmaceutical activities, scientific researches and to continue university studies in the post-graduate studies of his/her chosen speciality.

12. The study field of Pharmacy may not be the minor study field in university study programmes.

13. The study programmes of the study field of Pharmacy are conducted in the mode of full-time studies only.

14. Proof of pharmacist's formal qualification must certify completion of at least five years pharmacist's training studies satisfying the following minimum requirements:

14.1. theoretical and practical training of four years duration in the mode of full-time studies at university or equivalent higher education or under supervision by university;

14.2. practical training of six months duration in a public pharmacy or hospital pharmacy under supervision of the manager of pharmaceutical activities.

15. Persons with at least secondary education will be admitted to the first cycle and integrated study programmes of the study field of Pharmacy in an admission contest, taking into account their learning outcomes, entrance examinations or other criteria established by the higher education institution. Higher education institutions will establish a list of competitive subjects by study fields and principles for the award of contest points, the lowest admission score and other criteria, having received the assessment of student representation, and will publish them at least 2 years before the beginning of the respective academic year.

CHAPTER II

CONCEPT AND SCOPE OF THE STUDY FIELD

16. Pharmacy is a system of theoretical knowledge, practical skills and means designed for development and manufacture of quality, safe and effective medicines, for research, proper storage, supply, application in treating and preventing illnesses, public consultation on pharmaceutical substances and medicines, management and disposal of unused medicines and implementation of pharmaceutical care.

17. The main purpose of pharmaceutical specialists' activities is to ensure rational use of safe, effective and quality medicines through practical application of modern pharmaceutical knowledge.

18. Elements of the content of the study programmes of the study field of Pharmacy are as follows:

18.1. Theoretical field of study held of Pharmacy including practical reasoning of general knowledge, information analysis, synthesis and spread, assessment of diversity, multicultural and international space, social responsibility, decision-making;

18.2. Professional field of the study field of Pharmacy including planning and implementation of professional activities, assessment of results, communication and co-operation, practical activity development, professional behaviour and self-development, quality of services provided.

CHAPTER III

GENERAL AND SPECIAL LEARNING OUTCOMES

19. Learning outcomes presented in this Chapter are aspired learning outcomes of the study field of Pharmacy, but they are not specification of the comprehensive content of the study programme of course units.

20. Learning outcomes of the study field of Pharmacy of college studies are the following:

20.1. Knowledge and its application:

20.1.1. Knowledge and abilities to apply it when planning and conducting search for professional information needed for pharmaceutical activities in various fields of health promotion;

20.1.2. Knowledge of properties of finished pharmaceutical products and medicinal substances used in their production, ability to apply the acquired knowledge in practice;

20.1.3. Knowledge of production technologies of medicinal products and ability to carry out physical, chemical, biological and microbiological testing;

20.1.4. Knowledge of effect of medicinal products on human body and ability to explain safe use of medicinal products and medicinal goods.

20.2. Research skills:

20.2.1. To carry out applied scientific researches oriented to pharmaceutical activities and to analyse research findings;

20.2.2. To apply research findings in dealing with pharmaceutical issues.

20.3. Special abilities:

20.3.1. Under pharmacist’s supervision, to produce, pack and label produced extemporaneous medicinal products ensuring their quality;

20.3.2. Under pharmacist’s supervision, to determine if prescriptions are properly issued, and to decide on possibility to sell (issue) a medicinal product, to select non-prescription medicinal products, to provide pharmaceutical information about medicinal products, to select pharmaceutical goods according to consumer’s needs;

20.3.3. To apply legal and professional ethics requirements concerning pharmaceutical activities;

20.3.4. To implement decisions related with marketing and communication goals.

20.4. Social abilities:

20.4.1. To co-operate with health care specialists and other persons;

20.4.2. To work individually and in a team, to assume responsibility for their own and subordinate staff's performance following the principles of professional ethics and citizenship;

20.4.3. To render knowledge of professional practice and science to students in clear and reasoned manner.

20.5. Personal abilities:

20.5.1. To make decisions and to realise moral responsibility for impact of their activities and their outcomes on social welfare, its economic and cultural development and environment;

20.5.2. To make critical judgement of their professional practice, to reflect their professional self-improvement by realising the importance of lifelong learning.

21. Learning outcomes of the study field of Pharmacy of integrated studies are the following:

21.1. Knowledge and its application:

21.1.1. Specific knowledge of pharmaceutical sciences and skills to plan and carry out search independently, to find, systemise and master the latest specific knowledge of pharmaceutical sciences;

21.1.2. Knowledge and abilities to make critical judgement of theories, to develop and analyse modern ideas, new production technologies of medicinal products, their models, activity plans, to foresee potential solutions of methodology problems encountered in interdisciplinary pharmaceutical sciences;

21.1.3. Knowledge and abilities to work independently in all fields of pharmaceutical activities, to deal with strategic development matters;

21.1.4. Knowledge and abilities to manage pharmaceutical activities, to teach the latest achievements of pharmaceutical science and practice.

21.2. Research skills:

21.2.1. To co-ordinate planning and implementation of pharmaceutical scientific research, to form demand for new pharmaceutical research, to initiate pharmaceutical scientific research and projects, to attract partners;

21.2.2. Independently and with the team of health care specialists, to prepare and conduct pharmaceutical scientific research, to make practical application of theoretical and experimental methods of pharmaceutical sciences, foreseeing applied value of conducted research and applying their results to improve professional practice;

21.2.3. To analyse, synthesise data needed for scientific activities, to assess credibility of scientific research and to shape decisions of pharmaceutical science;

21.2.4. To integrate knowledge and to control complex situations, to make decisions when thorough and definite information is missing, to assess alternative options and potential environmental impact.

21.3. Special abilities:

21.3.1. Special knowledge regarding medicines and substances used in their production and ability to select pharmaceutical technologies and to manufacture pharmaceutical dosage forms;

21.3.2. To carry out physical, chemical, biological and microbiological research of substances when manufacturing pharmaceutical goods and researching them in pharmaceutical laboratory;

21.3.3. To organise storage, warehousing and distribution of medicines and medicinal substances through wholesale trade or supply;

21.3.4. To organise preparation of medicines for use, research, storage and dispensing (sale) at public pharmacies;

21.3.5. To organise preparation of medicines for use, research, storage and dispensing or distribution in hospitals;

21.3.6. To assess scientific data about medicines, to provide information and consulting on medicines;

21.3.7. To know medicine metabolism processes and their impact, effect of toxic substances, intended purpose and use of medicines and to apply the possessed knowledge in practice;

21.3.8. To identify, describe, register adverse reactions and to provide information about such cases to competent institutions;

21.3.9. To provide individual consulting to patients using the prescribed medicines;

21.3.10. To apply special legal and other requirements regarding implementation of pharmaceutical activities, when implementing local, national and international social health programmes;

21.3.11. To determine if the right prescription was issued, to select, sell (dispense) prescribed medicines and non-prescription medicines according to individual’s needs and complaints, to provide pharmaceutical information about medicines for population and health care specialists, to select pharmaceutical goods according to the health care specialists’ prescription and individual’s needs.

21.4. Social abilities:

21.4.1. To think creatively and to rely on democratic and ethical values acting for social welfare, feeling responsible for development of motherhood’s science and culture;

21.4.2. To work in teams of various health care specialists both on national and international level;

21.4.3. To render knowledge of pharmaceutical practice and science to specialists and other persons in clear and reasoned manner, to make critical judgements;

21.4.4. To assume responsibility for improvement of activities of their own and their subordinate staff, to enhance the image of pharmaceutical profession – to take care of its value and relevance in social life.

21.5. Personal abilities:

21.5.1. To apply abilities of systematic and strategic thinking in teambuilding and effective management of its activities and scientific research work, to choose the direction for personal and team improvement;

21.5.2. To develop own competences independently and to promote improvement of colleagues' competences, to improve professional qualification, to design own professional career;

21.5.3. To work in ever-changing environment, to foresee and manage changes, to plan solutions of tasks;

21.5.4. To have analytical thinking, to base professional activities on the latest findings of scientific research, to understand and act creatively at the juncture of pharmacy and various scientific fields;

21.5.5. To make innovative decisions independently, following assessment of potential social and ethical consequences, to realise and assume moral responsibility for impact of own activities on society, scientific development, welfare and environment.

CHAPTER IV

TEACHING, LEARNING AND ASSESSMENT

22. Teaching, learning and evaluation must be organised to ensure achievement of the learning outcomes established in the study programme of the study field of Pharmacy by the students.

23. At the beginning of the studies students must be acquainted, in detail, with the programme of the course unit, its purposes and links with the general purposes of the study programme, learning outcomes, learning load, procedure and criteria of assessment of learning achievements.

24. Teaching and learning methods applied must be clearly defined, revised and improved on a regular basis according to the latest achievements in pharmacy science, requirements of modern didactics and changing needs of labour market.

25. Teaching methods must conform to the lifelong learning concept. Students must be trained and encouraged to take responsibility for their lifelong learning and learning outcomes. Didactic system must orientate the study process to development of student's ability to study in pursuit of the latest pharmaceutical knowledge and its motivated application.

26. Didactic concept of teaching and learning must comprise application of various teaching and learning methods in search of integrated didactic solutions.

27. Different methods of studies can be applied in the study process, including:

27.1. Passive – lectures, workshops, seminars, structured or open-type laboratory works, case studies and other methods attributed to traditional concept of studies;

27.2. Active – group discussion, brainstorm, situation modelling, role-playing games, problem analysis and solution workshops, practical training in real workplaces, preparation of reports or speeches, individual and team projects, reflection, research study and other methods oriented to active independent student's studies.

28. In different cycles of studies of Pharmacy, the same teaching and learning methods can be applied, which would differ by the content of a task, complexity degree, student's independence level.

29. Studies must be linked with scientific research and its spread in practice, carried out through the following modes: scientific-practical seminars, students' researches carried out in scientific laboratories or practical placement institutions, presentation of the findings of final theses by graduates, joint publications by students, teachers and practitioners and speeches at scientific conferences.

30. Higher education schools must establish the procedure of assessment of learning outcomes. The description of such procedure must establish specific assessment criteria by joint agreement of teachers of the study programme, students, experts, employers, right assessment methods must be chosen to ensure unbiased assessment allowing to determine if the learning outcomes have been achieved.

31. Procedures of assessment of learning outcomes must be based on clearly-defined criteria enabling reliable assessment of the level of knowledge, abilities and practical skills acquired by the student during his/her studies. Various methods can be applied to assess learning outcomes, including: written or oral examination, laboratory work report and defence, solution of tasks, oral and written reports, report on individual or team project, practical training report, reflection journals, tests with open-ended and/or closed-ended questions, essays, defence of final (diploma) thesis (project).

32. Final examination and final thesis (project), its defence and assessment must summarise the general and special knowledge and abilities acquired by the student, which satisfy the qualification requirements established for the degree of professional Bachelor or Master.

CHAPTER V

REQUIREMENTS FOR THE IMPLEMENTATION OF STUDY PROGRAMMES

33. The study programme is based on competent and qualified teaching staff. Teachers must be selected and their qualifications and competences must be assessed by their scientific, pedagogical and practical experience, such as: participation in scientific applied researches, application of advanced teaching methods, interest and enthusiasm about development of more effective teaching methods, scientific activity level, recognition by professional, scientific and public communities, participation in educational programmes, ability to communicate fluently in at least one foreign language used in international co-operation activities, professional insight and personal interest in students' academic and leisure matters. Teacher must know and understand criteria, on which study programmes are accredited.

34. Requirements for teachers' competences:

34.1. It is recommended that teachers with Doctor's degree should account for at least 70% of all teachers of the integrated studies of Pharmacy. It is recommended that at least 70% of teachers of course units of integrated studies of Pharmacy should hold Doctor's degree in biomedical sciences of Pharmacy, while the field of their academic activities should conform to their taught course units. At least 20 percent of the scope of study field subjects must be taught by teachers holding professor's position;

34.2. Teachers with Doctor's degree must teach at least 10% of the total scope of college studies. At least half of the teachers of the college study programme of Pharmacy must have at least three years experience of teaching subjects of Pharmacy or pharmaceutical practice.

35. The below-stated material and methodical facilities meeting the following requirements must be available to ensure successful implementation of the study programme:

35.1. The number of classrooms must be adequate to deliver all lectures, other than optional subjects, during the first half of a day. Classrooms must satisfy hygienic and occupational safety requirements, fitted with modern sound and video equipment and display equipment;

35.2. Laboratories must meet hygienic, occupational safety requirements and be marked by flammability class code. For college study programme, pharmaceutical (medicines) chemistry, pharmaceutical technology, pharmacognosy, pharmacology laboratories must be available, fitted with equipment and apparatuses meeting the safety requirements and quality standards, and enabling students to acquire skills to carry out chemical and physical-chemical, microbiological analysis of active ingredients and excipients, finished pharmaceuticals, to manufacture various pharmaceutical dosage forms of extemporaneous and industrial pharmaceuticals. The level of laboratory equipment and apparatuses intended for integrated study programme must be adequate to provide students with a possibility to learn applying modern methods of pharmaceutical product analysis, synthesis, technology, biological researches. Every student must be given an opportunity to use modern (up-to-date) equipment directly or with the assistance of staff in any laboratory;

35.3. Library with sufficient number of pharmaceutical studies and scientific literature, textbooks, directories and other publications in Lithuanian and foreign languages for implementation of the study programme. Library must be fitted with computers with internet access to international databases;

35.4. Adequate number of computers with text, qualitative and quantitative data processing and innovative teaching software, internet access.

36. In college study programmes, practical training and any other practical workshops must account for minimum one third of the volume of the study programme. The scope of practical training must be at least 30 credits. Final placement of practical training must be co-ordinated with the theme of the final thesis and similar to the workplaces for which the graduate is being trained for.

37. The college study programme ends with the assessment of student's learning outcomes through defence of the final thesis (project) and final examinations, for which at least nine credits are granted. If the study programme ends with double professional Bachelor's degree granted, final theses (projects) of the major field (branch) and minor field (branch) must be stipulated, as well as final examinations, for which at least 12 credits in total are granted.

38. Qualification commission (hereinafter referred to as the "Commission") of minimum five members must be formed to assess learning outcomes of the college study programme. The Commission must include employers' representatives (at least half of the Commission members), one of whom is appointed to chair the Commission, and at least one teacher responsible for implementation of the study programme. The Commission may also include biomedical scientists and teachers from other higher education schools.

39. Final professional Bachelor's thesis (project) must reveal student's abilities to carry out scientific applied research oriented to pharmaceutical activities, to analyse and summarise empiric research material, to foresee possibilities of pharmaceutical activity improvement. Final thesis (project) must reveal abilities in accordance with the learning outcomes of the programme.

40. In integrated study programme, practical training in public or hospital pharmacy must have the scope of at least 18 credits.

41. The integrated study programme ends with the assessment of student's knowledge and abilities through defence of the final thesis (project) and final examinations, for which at least 30 credits are granted.

42. Final thesis (project) must be based on independent scientific research or applied researches, application of knowledge or developed as a project revealing the abilities in accordance with the learning outcomes of the study programme. Final thesis (project) must demonstrate the level of student's knowledge and understanding, ability to analyse the chosen theme, to assess projects of the study field of Pharmacy conducted by other persons, to learn and carry out pharmaceutical research independently, to describe their conducted research work, to formulate research conclusions in clear and reasoned manner meeting the requirements approved by the higher education school.

43. Commission for defence and assessment of the final thesis (project) of integrated studies must include competent scientists working in the study field of pharmacy, expert pharmaceutical

practitioners who graduated from the integrated study programme, other social partners' representatives. At least one member of the Commission (Chair of the Commission, recommended) must be from a different research and educational institution. If a final examination is included into the study programme, then final examination commission must have the same composition as the final thesis (project) defence and assessment commission.

CHAPTER VI

DESCRIPTOR OF THE LEVELS OF ACHIEVED LEARNING OUTCOMES

44. Learning outcomes achieved by the students of the study field of Pharmacy are divided into the following levels: typical (standard, average achievements) and excellent (above-the-average achievements).

45. Learning outcomes of the first cycle college studies are divided into the following levels:

45.1. Typical level. Knowledge and practical skills of the study field of Pharmacy are good, but limited to the contents of the study programme. Graduates can identify and assess problems of pharmaceutical practice and science can clearly show practical application of problem-solving methods. Good special competences, good understanding of appropriate facts and technologies. Ability to plan project and practical work, but external assistance may be needed when describing it. Ability to analyse and discuss work outcomes. Good understanding of pharmaceutical practice, ability to make suggestions on activity content and performance methods. Good general, social and personal abilities, which are demonstrated by implementing practical activities;

45.2. Excellent achievement level. Comprehensive knowledge and practical skills of the study field of Pharmacy, exceeding information provided during studies. Graduates demonstrate ability to apply knowledge and practical skills in dealing with unfamiliar situations. Ability to acquire new knowledge quickly and firmly. Planning and describing project and practical work with minor external assistance. Original analysis and discussion of work outcomes. Excellent understanding of pharmaceutical practice, ability to make suggestions on activity content and performance methods. Excellent general, social and personal abilities, which are demonstrated by implementing practical activities.

46. Learning outcomes of integrated university studies are divided into the following levels:

46.1. Typical level. Good knowledge of Pharmacy but limited to the contents of the study programme. Activities are based on independent scientific and applied researches. Ability to give reasoned validation of research methods and to apply them in applied scientific researches, to analyse outcomes and to draw conclusion, but comparative analysis of research results may represent some difficulties. Quite quick acquisition of new knowledge. Demonstration of knowledge and abilities that are needed to recognise, formulate, handle and assess problems encountered in pharmaceutical practice and science. Good general, social and personal abilities, which are showed in professional activities;

46.2. Excellent achievement level. Comprehensive knowledge of Pharmacy, exceeding information provided during the studies. Graduates show the ability of flexible and critical application of knowledge in dynamic situations. Graduates show excellent knowledge and abilities that are needed to deal with complicated pharmaceutical practice tasks and carry out scientific research. Ability to acquire new knowledge in a quick and confident manner. Expert understanding. Career perspectives embrace scientific research, development of innovations in national and international context, application of technologies. Demonstration of excellent special, general social and personal abilities.

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