MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

APPROVED
by Academic Council of
Odesa National Medical University
June 27, 2024
Record No. 10

IMPLEMENTED
By Order of the
Rector of Odesa National Medical University
Valerii ZAPOROZHAN

June 27, 2024
No. 312-0

EDUCATIONAL AND PROFESSIONAL PROGRAM

"PHARMACY, INDUSTRIAL PHARMACY"

FOR TRAINING OF SPECIALISTS OF THE SECOND (MASTER'S) LEVEL OF HIGHER EDUCATION

specialty 226	"Pharmacy, Industrial Pharmacy"
specialization 226.01	"Pharmacy"
branch of knowledge 22	"Health care"
educational qualification	"Master of Pharmacy"
professional qualification	"Pharmacist"

Odesa-2024

LETTER OF APPROVAL

FOR EDUCATIONAL AND PROFESSIONAL PROGRAM

"PHARMACY, INDUSTRIAL PHARMACY"

1. SUBMITTED:

by the Subject-cycle Methodological Commission for Pharmaceutical Disciplines - Record No. 5 dated June 18, 2024

2. APPROVED:

by the Central Qualification Methodical Council of Odesa National Medical University

Record No. 7 dated June 26, 2024

The Head _____ Nina MATSEHORA

INTRODUCTION

Developed by the project group consisting of:

Guarantor of the Educational and Professional Program: Unhurian L.M. - Dean of the Faculty of Pharmacy of Odesa National Medical University, Doctor of Pharmaceutical Sciences, Professor

Project group:

1. Buriachkivskyi E.S. - Ph.D. in Medical Sciences, Associate Professor, Vice-Rector for Scientific and Pedagogical Work
2. Borshch V.I. - Doctor of Economic Sciences, Associate Professor, Vice-Rector for Prospective Development
3. Kotiuzhynska S.H. - Doctor of Medical Sciences, Professor, Vice-Rector for Scientific and Pedagogical Work
4. Annenkova I.P. - Doctor of Pedagogical Sciences, Associate Professor, Head of the Educational Department
5. Usychenko K.M. - Ph.D. in Medical Sciences, Associate Professor, Head of the Education Quality Assurance Department
6. Helmboldt V.O. - Doctor of Chemical Sciences, Professor, Head of the Department of Pharmaceutical Chemistry
7. Rozhkovskyi Y.V. - Doctor of Medical Sciences, Professor, Head of the Department of Pharmacology and Pharmacognosy
8. Beliayeva O.I. - Ph.D. in Pharmaceutical Sciences, Associate Professor, Head of the Department Organization and Economics of Pharmacy
9. Antonenko P.B. - Professor of the Department of Pharmacology and Pharmacognosy
10. Fizor N.S. - Ph.D. in Pharmaceutical Sciences, Associate Professor of the Department of Drug Technology
11. Krylova A.I. - student of the specialty "Pharmacy, Industrial Pharmacy", Student Council President of the Faculty of Pharmacy

The professional expertise of the educational and professional program was carried out by:

1. Liashenko-Shcherbakova V.V., Head of the territorial body of the State Service of Ukraine on Medicines and Drugs Control in the Odesa region
2. Lipkina A.N., General Director of PJSC "Pharmacy Chain ‘Farmacia’"
3. Bushuieva I.V., Head of the Department of Pharmacy Management and Economics, and Pharmaceutical Technology of Zaporizhzhia State Medical University, Doctor of Pharmaceutical Sciences, Professor

1. PROFILE OF THE EDUCATIONAL AND PROFESSIONAL PROGRAM IN SPECIALTY 226 PHARMACY, INDUSTRIAL PHARMACY

1.1. General Information	
Full name of the institution of higher education	Odesa National Medical University
Degree of higher education and the title of the qualification in the original language	The degree of higher education — Магістр/Master Educational qualification — Магістр фармації/Master of Pharmacy Specialization — 226.01 Фармація/Pharmacy Professional qualification — Фармацевт/Pharmacist
The official name of the educational and professional program	Pharmacy, Industrial Pharmacy
Type of diploma and scope of the educational and professional program	Master's degree, single. Scope of the educational program: - Based on complete general secondary education — 300 ECTS credits. The term of study is 4 years and 10 months - Based on a professional junior bachelor's degree and junior bachelor's degree in the educational program 226.01 Pharmacy and master's degree in the branch of knowledge 22 Health care — 300 ECTS credits. Program duration is 4 years and 10 months for full-time education and 4 years and 5 months for extramural education (shortened study term: re-crediting no more than 60 ECTS credits received within the previous educational program)
Accreditation	NAQAHE Accreditation Certificate No. 15487, date of issuance of the educational program accreditation certificate - May 21, 2021. Certificate validity period: July 7, 2026 HAAP IAAR Accreditation Minutes of the NAAR Accreditation Council No. 64 dated December 23, 2021 Certificate: РД-IV No. 1626447 dated December 23, 2021 Certificate validity period: December 23, 2021 - December 22, 2026
Cycle/level	NQF (National Qualification Framework) of Ukraine - level 7 FQ-EHEA – the second cycle EQF-LLL – level 7
Prerequisites	A person is eligible to obtain a master's degree in a full-time form of education based on a complete general secondary education or on the basis of an educational and professional degree of a professional junior bachelor, an education degree of a junior bachelor, an education and qualification level of a junior specialist in the specialty 226 Pharmacy, Industrial Pharmacy, a master in specialties of the field of knowledge 22 Health care (based on certificates of external independent assessment or results of NMT). Extramural education is only provided based on the obtained educational degree of a professional junior bachelor, junior bachelor, educational program 226.01 Pharmacy and a master's degree in the field of knowledge 22 Health care. Admission rules are developed annually by the University based on the

	Admission Requirements for obtaining higher education approved by the Order of the Ministry of Education and Science of Ukraine.
Language(s)	Ukrainian, English
The term of validity of the educational and professional program	4 years and 10 months
Internet address of the permanent placement of the description of the educational and professional program	https://onmedu.edu.ua/osvita/osvitni-programi/

1.2. Purpose of the Educational and Professional Program

Acquisition of specialized conceptual knowledge, including modern scientific achievements in the field of professional activity of a pharmacist; ability/skills for solving complex problems, including those of a research and innovation nature, and conveying professional information to the target audience; the ability to continue learning with a high degree of autonomy.

1.3. Characteristics of the Educational and Professional Program

Subject area (field of knowledge, specialty, specialization)	Field of knowledge - 22 Health care Specialty - 226 Pharmacy, Industrial Pharmacy Specialization – 226.01 Pharmacy
Description of the subject area	*Object of activity* : development, production, quality control, wholesale and retail sale of medicines, pharmaceutical service, pharmaceutical assistance. *Theoretical content of the subject area*: principles, concepts, theories of development, production, quality control, wholesale and retail sales of medicinal products, pharmaceutical services, pharmaceutical assistance. *Methods, techniques and technologies*: organoleptic, physical, chemical, physico-chemical, biopharmaceutical, pharmaco-technological, microbiological, biochemical, pharmacological, clinical, calculation-economic, pharmaco-economic methods; methods of marketing research, modeling, data analysis, forecasting; pharmaceutical production technologies and modern digital technologies. *Tools and equipment*: tools and equipment of pharmaceutical (pharmacy) healthcare institutions; technological equipment for pharmaceutical development and production of medicines; analytical equipment for quality control of medicinal products; specialized information systems and software.
Orientation of the educational and professional program	The educational and professional program “Pharmacy, Industrial Pharmacy” is oriented to the modern requirements of the WHO regarding the role, vision and mission of the pharmacist in the health care system. The educational and professional program is an applied program with a professional focus on the theory and practice of pharmacy.
The main focus of the educational and professional program and	Special higher education in the field of knowledge 22 Health care, specialty 226 Pharmacy, Industrial Pharmacy, specialization – 226.01 Pharmacy

specialization	Keywords: master's degree, pharmacy, health care, complete higher pharmaceutical education.
Features of the program	Full-time and extramural forms of education. The educational program ensures the acquisition of high-level knowledge and skills based on modern scientific achievements in the field of pharmacy and the principles of evidence-based medicine. EPP allows for gaining a thorough knowledge of the use of drugs in medical practice, as well as primary management experience. It provides for the possibility of internship and industrial pharmaceutical practices at pharmaceutical enterprises; focused on the application of special information technologies to optimize and increase the effectiveness of pharmaceutical research. The program is implemented in small groups through a combination of theoretical and practical training and aimed at acquiring competencies required for specialists in the pharmaceutical industry. The educational process is based on student-centered, practice-oriented and competency-based approaches, in compliance with the principle of "lifelong learning" - continuous professional development. Taught in Ukrainian and English.
1.4. Graduates' employability and further education	
Employability	Graduates of the specialization educational program 226.01 Pharmacy, who have the professional qualification of a pharmacist, after completing the internship (if specialization is necessary) have the right to work in positions corresponding to the professions of managers and professionals in the field of pharmacy. According to the Classifier of Professions ДК 003:2010, the following positions can be held: 2224.2 pharmacist; 2224.2 pharmacist-analyst; 2224.2 pharmacist-toxicologist; 2224.1 junior researcher (pharmacy); 2224.1 researcher (pharmacy); 2224.1 scientific consultant-consultant (pharmacy) and relevant managerial positions at pharmaceutical (pharmacy) health care institutions and their structural divisions. Moreover, the master of pharmacy can work at enterprises of the chemical and pharmaceutical industry, in forensic chemical and toxicological laboratories, research institutes, clinical health care institutions, institutions of higher education and branch institutions of various departments, performing professional functions in accordance with their position responsibilities.
Further education	After completing the educational and professional program, a graduate can enter a postgraduate education program (the primary specialization - internship in the specialty 226 Pharmacy, Industrial Pharmacy) and acquire a secondary pharmaceutical specialization. Continuing education at the third (educational and scientific) level of higher education (Doctor of Philosophy). Acquiring additional qualifications in the system of postgraduate education as a part of continuous professional development
1.5. Teaching and Assessment	
Teaching and learning	The foundation for the organization of the educational process is a competency-based, student-centered, problem-oriented approach to learning, as well as learning through pharmaceutical practice. Methods, techniques and technologies: organoleptic, physicochemical, biopharmaceutical, pharmaco-technological, microbiological,

	biochemical and pharmacological, clinical, laboratory, calculation and economic, and others. The main forms of organization of the educational process: lectures, seminars, practical classes in small groups, independent work, industrial practices, and consultations with teachers.
Assessment	In each discipline, the system of assessing student knowledge includes diagnostic, current and final (semester) assessment, self-assessment, assessment of practical training results, defense of course work and certification of graduates. Forms of current control: current survey, computer-based tests, skills assessment. Forms of final control: credit tests, graded tests, oral and written exams. Attestation of applicants of the second (master's) level of higher education in the specialty 226 Pharmacy, Industrial Pharmacy, specialization 226.01 Pharmacy is conducted in the form of the Unified State Qualification Examination (USQE), which includes: integrated test exam Step-1 and Step-2; professional English language exam; preparation and defense of qualification project. Assessment and control of the learning outcomes of higher education applicants is carried out in accordance with the Regulation "On the organization of the educational process at the Odesa National Medical University".
1.6. Program Competencies	
Master's integral competency (level 7) in accordance with the requirements of the NQF (National Qualification Framework)	The ability to solve problems of a research and/or innovative nature in the field of pharmacy; to comprehend critically and solve practical problems in professional pharmaceutical activity using the provisions, theories, and methods of fundamental, chemical, technological, biomedical, and socio-economic sciences; integrate knowledge and solve complex issues, formulate judgments based on insufficient or limited information; clearly and unambiguously convey one's own knowledge, conclusions and their validity to a professional and non-professional audience. The ability to continue learning with a high degree of autonomy.
General competencies according to the NQF requirements	GC01. Ability to abstract thinking; ability to analyze and synthesize, study, and be up-to-date educated GC02. Knowledge and understanding of the subject area and understanding of professional activity GC03. Ability to communicate in the national language both orally and in writing GC04. Ability to communicate in a foreign language (mainly English) at the level that ensures effective professional activity GC05. Ability to evaluate and ensure the quality of the work performed GC06. Ability to work in a team GC07. Ability to realize one's rights and responsibilities as a member of society; to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, and the rights and freedoms of a person and a citizen in Ukraine GC08. Ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and

	patterns of development of the subject area, its place in the general system of knowledge about nature and society, and in the development of society, technique, and technologies; use various types and forms of motor activity for active recreation and leading a healthy lifestyle GC09. Ability to use information and communication technologies GC10. Ability to act socially responsibly and consciously GC11. Ability to apply knowledge in practical situations GC12. The desire to conserve the environment GC13. Ability to show initiative and entrepreneurship GC14. Ability to adapt and act in a new situation GC15. Knowledge and understanding of the subject area and understanding of professional activity GC16. Ability to conduct experimental research at the appropriate level GC17. Ability to make decisions and act in accordance with the principle of non-acceptance of corruption and any other manifestations of dishonesty
Special (professional, subject) competencies	Special (professional) competences are formed taking into account the Standard of higher education in the specialty 226 Pharmacy, Industrial Pharmacy, specialization 226.01 Pharmacy, the field of knowledge 22 Health care for the second (master's) level of education. SC01. Ability to integrate knowledge and solve complex pharmacy problems in broad or multidisciplinary contexts SC02. Ability to collect, interpret and apply data necessary for professional activity, research and implementation of innovative projects in the field of pharmacy SC03. Ability to solve pharmacy problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility SC04. Ability to clearly and unambiguously convey one's own knowledge, conclusions and arguments in the field of pharmacy to specialists and non-specialists, in particular to people who are studying SC07. Ability to carry out sanitary and educational work among the population aimed at the prevention of common diseases, dangerous infectious, viral and parasitic diseases, as well as for promoting timely detection and support of adherence to the treatment of these diseases according to their medico-biological characteristics and microbiological features SC08. Ability to consult on prescription and non-prescription drugs and other products of the pharmacy assortment; pharmaceutical care during the selection and sale of medicinal products of natural and synthetic origin by assessing the risk/benefit ratio, compatibility, taking into account biopharmaceutical, pharmacokinetic, pharmacodynamic and physicochemical and chemical features, indications/contraindications for use guided by data on the health status of a particular patient SC09. Ability to provide pre-medical assistance to the sick and injured in extreme situations and emergencies SC10. Ability to monitor the effectiveness and safety of the population's use of medicines according to data on their clinical and pharmaceutical characteristics SC11. The ability to identify medicinal products, xenobiotics, toxins and their metabolites in biological fluids and tissues of the body; to conduct chemical and toxicological studies for diagnosing acute poisoning, drug

	and alcohol intoxication SC12. Ability to ensure proper storage of medicinal products of natural and synthetic origin and other products of the pharmacy assortment in accordance with their physicochemical properties and the rules of Good Storage Practice (GSP) in healthcare facilities SC13. Ability to organize the activities of the pharmacy to supply the population and health care facilities with medicines and other products of the pharmacy assortment and to implement appropriate reporting and accounting systems, to carry out product analysis and administrative record keeping in accordance with the requirements of pharmaceutical legislation; SC14. Ability to analyze and forecast the main economic indicators of the activity of pharmacies, calculate the main taxes and fees, form prices for medicines and other products of the pharmacy assortment in accordance with the current legislation of Ukraine; SC15. Ability to analyze socioeconomic processes in pharmacy, forms, methods and functions of the system of pharmaceutical provision of the population and its components in global practice, indicators of the need, effectiveness and availability of pharmaceutical care in terms of medical insurance and reimbursement of the cost of medicines; SC16. Ability to organize and carry out the production activities of pharmacies for the manufacture of drugs in various dosage forms according to the prescriptions of doctors and the requirements (orders) of medical and preventive institutions, including the justification of technology and the selection of excipients in accordance with the rules of Good Pharmacy Practice (GPP); SC17. Ability to carry out pharmaceutical development and participate in the production of medicinal products of natural and synthetic origin in the conditions of pharmaceutical enterprises in accordance with the requirements of Good Manufacturing Practice (GMP); SC18. Ability to organize and carry out general and marketing management of assortment, product and innovation, price, sales and communication policies of pharmaceutical market subjects based on the marketing research and considering market processes at the national and international levels to manage risks in the pharmaceutical supply system. SC19. Ability to organize and carry out quality control of medicinal products of natural and synthetic origin in accordance with the requirements of the current edition of the State Pharmacopoeia of Ukraine, quality control methods (QC), technological instructions, etc.; prevent the distribution of low-quality, falsified and unregistered medicinal products; SC20. Ability to develop and evaluate methods of quality control of medicinal products of natural and synthetic origin, including active pharmaceutical ingredients, medicinal plant raw materials and auxiliary substances using physical, chemical, physicochemical, biological, microbiological, and pharmaco-technological methods; carry out standardization of medicinal products in accordance with current requirements; SC21. Ability to ensure the rational use of prescription and non-prescription drugs considering the physicochemical, pharmacological characteristics, biochemical, and pathophysiology features of a particular disease and pharmacotherapeutic schemes of its treatment;

	SC22. Ability to monitor the effectiveness and safety of the use of medicinal products by the population according to data on their clinical and pharmaceutical characteristics, as well as taking into account subjective signs and objective clinical, laboratory and instrumental criteria for the examination of the patient; SC23. Ability to develop, implement and apply management approaches in the professional activity of pharmacies, wholesale brokers, manufacturing enterprises and other pharmaceutical organizations; argue the principles of HR management and self-management, and demonstrate leadership skills; SC24. Ability to use knowledge of regulatory and legislative acts of Ukraine and recommendations of proper pharmaceutical practices in professional activity; SC25. Ability to demonstrate and apply in practice communication skills and fundamental principles of pharmaceutical ethics and deontology based on moral obligations and values, ethical standards of professional behavior and responsibility in accordance with the Code of Ethics of pharmaceutical workers of Ukraine and WHO guidelines; SC26. Ability to organize and participate in the production of medicinal products in the conditions of pharmaceutical enterprises, in particular, the selection and justification of the technological process and equipment in accordance with the requirements of the Good Manufacturing Practice (GMP) with the appropriate development and execution of the necessary documentation. Determine the stability of medicines; SC27. Ability to organize and carry out the procurement of medicinal plant raw materials following the rules of the Good Agricultural and Collection Practice (GACP) as a guarantee of the quality of medicinal plant raw materials and medicines based on them; SC28. Ability to predict and substantiate ways of solving the problem of preservation and protection of wild medicinal plants in accordance with current legislation; SC29. Ability to develop and implement a quality management system for pharmaceutical enterprises in accordance with the requirements of current Standards, to conduct quality audits and risk management for the quality of pharmaceutical products; SC30. Ability to diagnose emergency conditions; SC31. Ability to carry out medical evacuation measures; SC32. Ability to perform medical manipulations.
	1.7. Program Learning Outcomes
	PLO01. Have and apply specialized conceptual knowledge in the branch of pharmacy and related fields, taking into account modern scientific achievements. PLO02. Critically comprehend scientific and applied problems in the field of pharmacy. PLO03. Have specialized knowledge and skills for solving professional problems and tasks, including the further development of knowledge and procedures in pharmacy. PLO04. Communicate in the national and English languages fluently, both orally and in writing, to discuss professional problems and results of professional activities and present scientific research and innovative

	projects. PLO05. To assess and ensure the quality and efficiency of activities in the field of pharmacy. PLO06. Develop and make effective decisions to solve complex problems in the field of pharmacy personally and based on the results of joint discussion; formulate the goals of one's activity and the activity of the team, taking into account public and industrial interests, the general strategy and existing limitations, determine the optimal ways to achieve goals. PLO07. Collect the necessary information on the development and production of medicinal products, using such sources as special literature, patents, databases, and others; systematize, analyze, and evaluate the information using statistical analysis. PLO08. Develop and implement innovative projects in pharmacy and related interdisciplinary projects accounting technical, social, economic, ethical, legal and environmental aspects. PLO09. Formulate, argue, clearly and in detail convey to specialists and non-specialists, including those seeking higher education, information based on one's own knowledge and professional experience, the main trends in the development of world pharmacy and related industries. PLO10.Carry out sanitary and educational work among the population for prevention and in case of outbreaks of dangerous infectious, viral and parasitic diseases. PLO11. Determine the advantages and disadvantages of drugs of natural and synthetic origin of various pharmacological groups, taking into account their chemical, physicochemical, biopharmaceutical, pharmacokinetic, and pharmacodynamic features and the type of dosage form. Recommend to consumers medicinal products and other products of the pharmacy assortment with the provision of advisory assistance and pharmaceutical care. PLO12. Provide pre-medical care to emergency patients and victims in extreme situations. PLO13. Record cases of side effects when using medicinal products of natural and synthetic origin; evaluate factors that can affect absorption, distribution, deposition, metabolism, and excretion of drugs and that are determined by the condition and characteristics of the human organism and the pharmaceutical characteristics of drugs. PLO14. Choose biological objects for analysis by determining xenobiotics, toxins and the metabolites; evaluate the results. PLO15. Predict and determine the influence of environmental factors on the quality and consumer characteristics of medicinal products of natural and synthetic origin and other products of the pharmacy assortment; organize their storage in accordance with their physical and chemical properties and the standards of Good Storage Practice (GSP). PLO16. Implement appropriate organizational and management measures to provide the population and health care institutions with medicines and other products of the pharmacy assortment; carry out all types of reporting and accounting in pharmacy institutions,

	administrative record-keeping, and commodity analysis. PLO17. Calculate the main economic indicators of pharmacy establishments, as well as taxes and fees. Form all types of prices (wholesale, purchase and retail) for medicinal products and other products of the pharmacy assortment. PLO18. Use data from the analysis of socio-economic processes in society for the pharmaceutical supply of the population; determine the effectiveness and availability of pharmaceutical care in terms of medical insurance and reimbursement of the cost of medicines. PLO19. Develop technological documentation for manufacturing medicinal products, choose a rational technology, manufacture medicinal products in various dosage forms according to doctors' prescriptions and the requirements (orders) of medical and prevention institutions, and prepare them for dispensing. PLO20. Conduct pharmaceutical development of medicinal products of natural and synthetic origin in conditions of industrial manufacture. PLO21. Ensure competitive positions and effective development of pharmaceutical organizations based on the results of marketing research and market processes at the national and international levels. PLO22. Ensure and carry out quality control of medicinal products of natural and synthetic origin and document its results; draw up quality certificates and analysis certificates taking into account the requirements of the current edition of the State Pharmacopoeia of Ukraine, quality control methods (QC), technological instructions, etc.; take measures to prevent the distribution of low-quality, falsified and unregistered medicinal products. PLO23. Determine the main chemical and pharmaceutical characteristics of medicinal products of natural and synthetic origin; select and/or develop quality control methods for their standardization using physical, chemical, physicochemical, biological, microbiological, and pharmaco-technological methods under current requirements. PLO24. Conduct professional activities in social interaction based on humanistic and ethical principles; identify future professional activity as socially significant for human health. PLO25. Adhere to the norms of the sanitary and hygienic regime and the requirements of safety equipment when carrying out professional activities. PLO26. Argue information for decision-making, bear responsibility for them in standard and non-standard professional situations and adhere to the principles of deontology and ethics in professional activity. PLO27. Perform professional activities using creative methods and approaches. PLO28. Carry out professional communication in the state language, use oral communication skills in a foreign language while analyzing specialized texts and translating foreign language information sources. PLO29. Carry out professional activities using information technologies, databases, navigation systems, Internet resources, software, and other information and communication technologies.

	PLO30. Adhere to the norms of communication in professional interaction with colleagues, management, and consumers; work effectively in a team. PLO31. Use methods of evaluating performance quality indicators; identify reserves for increasing labor efficiency. PLO32. Analyze information obtained from scientific research, summarize, systematize, and use it in professional activities. PLO33. Determine the influence of factors that affect the processes of absorption, distribution, deposition, metabolism, and excretion of the medicinal product and that are determined by the condition and features of the human organism and the physicochemical properties of medicinal products. PLO34. Use the data of clinical, laboratory and instrumental studies to monitor the effectiveness and safety of the use of medicinal products. PLO35. Carry out the management of pharmaceutical organizations and determine its effectiveness using management functions. Make managerial decisions regarding the strategic planning of enterprise activities based on personnel's developed leadership and communication skills. PLO36. Plan and implement professional activities under normative legal acts of Ukraine and according to guidelines of proper pharmaceutical practices. PLO37. Contribute to the preservation of health, in particular, the prevention of disease and the rational administration and use of medicinal products. Fulfill one's professional duties faithfully and comply with the legislation on promoting and advertising medicinal products. Possess psychological communication skills to achieve trust and mutual understanding with colleagues, medical doctors, patients and consumers. PLO38. Substantiate the technology and organize the production of medicinal products at pharmaceutical enterprises and draw up technological documentation for the production of medicinal products at pharmaceutical enterprises. PLO39. Organize and carry out rational procurement of medicinal plant raw materials. Develop and implement measures for the protection, reproduction and rational use of wild species of medicinal plants. PLO40. Ensure quality control of medicinal products and document the results; carry out quality risk management at all stages of the life cycle of medicinal products. PLO41. Determine the main clinical syndrome or symptom, which determines the severity of the victim's/sufferer's condition by making a reasonable decision about the person's condition under any circumstances (both in the conditions of a health care facility and outside), including emergencies and hostilities, field conditions and conditions of lack of information and limited time. PLO42. Organize and provide medical aid and evacuation measures to the civilian population and military personnel in emergencies and hostilities, including field conditions.

	PLO43. Organize the required level of individual safety (one's own and the persons they care for) in case of common dangerous situations in the individual field of activity.
1.8. Resource Support for Program Implementation	
Staffing	All scientific-pedagogical emloyees involved in the implementation of the educational component of the educational-professional program have qualifications corresponding to their specialty, a scientific degree or an academic title, a confirmed level of scientific and professional activity. The staffing of the project group and the departments that train students of higher education meet the licensing requirements for conducting educational activities. The teaching of disciplines under the educational and professional program 226 Pharmacy, Industrial Pharmacy is provided by 14 departments. All scientific and pedagogical emloyees involved in the implementation of the educational program are full-time employees of ONMedU.
Material and technical provision	The material and technical base of ONMedU allows to ensure the educational process in all educational disciplines at the appropriate scientific and methodological level. ONMedU is equipped with premises for conducting training sessions and control events. Lecture halls and training rooms are equipped with modern multimedia equipment, technical teaching aids, computer equipment; computer classes are set up at the departments. Appropriate laboratories, as well as the Training Pharmacy, are used to train skills. The educational base of the faculty allows us to organize and conduct educational classes in all disciplines at the appropriate scientific and methodical levels. Industrial pharmaceutical practice is carried out on the basis of pharmaceutical enterprises, the laboratory of the territorial body of the State Service for Medicines and Drugs Control in the Odesa region, under the terms of current agreements for conducting practice in health care institutions. The Educational and Production Complex of Innovative Technologies of Learning, Informatization and Continuous Education (EPC ITLICE) of ONMedU operates at the University providing technical support for testing.
Informational and educational and methodological support	Educational and methodological support of educational disciplines includes methodological instructions for lectures, practical classes, laboratory workshops, methodological instructions for independent work of students; methodical materials for practicals, tasks for knowledge control. Educational and methodological support is available electronically at https :// info . odmu _ edu . ua / . ONMedU has modern information sources and computer equipment. The official website (https://onmedu.edu.ua) contains information about educational programs, educational, scientific and educational activities, structural subdivisions, admission rules, contacts. The ONMedU library is a modern innovation center of the university, whose library fund includes over 900,000 documents of scientific and educational literature in Ukrainian and foreign languages, where modern educational literature, scientific, reference and professional periodicals are presented. The electronic library consists of more than 5,000 documents, mostly

	with educational content. The electronic catalog https://library.odmu.edu.ua/catalog/ contains over 170,000 records and operates 24/7 with options for authorized use of all digital documents. Access to international bibliographic and scientific-metric databases (Hinari, Scopus, WebofScience, etc.) and annual subscription to scientific publications, in particular, in English.
1.9. Academic Mobility	
National credit mobility	National credit mobility is carried out on the basis of the Law of Ukraine "On Higher Education". Recognition of study results by other institutions of higher education within the framework of academic mobility is carried out in accordance with the ONMedU agreements.
International credit mobility	International mobility and crediting the results of international mobility within the Erasmus+ program is carried out on the basis of the Law of Ukraine "On Higher Education" and cooperation agreements, as well as other international programs (British Council, DAAD, etc.) and travel grants.
Training foreign seekers of higher education	Training foreign students is carried out in accordance with the requirements of current legislation. Training is carried out in Ukrainian and/or English at the applicant's request.

2. LIST OF EDUCATIONAL AND PROFESSIONAL PROGRAM COMPONENTS AND THEIR LOGICAL SEQUENCE

2.1. List of the Educational and Professional Program Components

Code	Components of the educational and professional program (educational disciplines, course projects (works), practices. Qualification work)	Number of credits	Forms of final control
1. COMPULSORY COMPONENTS			
1.1. Cycle of general training disciplines			
CC 1	History of Ukraine and Ukrainian culture	3,0	Credit test
CC 2	Information technologies in pharmacy	4,0	Graded test
CC 3	Foreign language (for professional purposes)	3,0	Graded test
CC 4	Ukrainian language (for professional purposes)	4,0	Graded test
CC 5	Higher mathematics	3,0	Graded test
CC 6	Biological physics with physical methods of analysis	4.0	Graded test
CC 7	Philosophy with a cycle of academic integrity	3.0	Graded test
CC 8	Biology with the basics of genetics	4.0	Graded test
CC 9	Human anatomy	3.0	Graded test
CC 10	Human physiology	3.0	Graded test
CC 11	Latin	3,0	Graded test
CC 12	Microbiology with the basics of immunology	5,0	Exam
CC 13	Pathological physiology	5,0	Exam
CC 14	Organic chemistry	8,0	Exam
CC 15	General and inorganic chemistry	6,0	Exam
CC 16	Analytical chemistry	8,0	Exam
CC 17	Pharmaceutical botany	5,0	Exam
CC 18	Biological chemistry	5,0	Exam
CC 19	Basics of consumer behavior in pharmacy	4.0	Credit test
CC 20	English	3.0	Credit test
Total volume of general training disciplines		**85**	
1.2. Cycle of professional training disciplines			
CC 21	Introduction to pharmacy	3,0	Credit test
CC 22	Ethics and deontology in pharmacy	3,0	Credit test
CC 23	Drug technology	12,0	Exam
CC 24	Pharmacognosy	8,0	Exam
CC 25	Pharmacotherapy with pharmacokinetics	3,0	Graded test
CC 26	Pharmacology	8,0	Exam
CC 27	Pharmaceutical chemistry	13,0	Exam
CC 28	Physical and colloidal chemistry	4,0	Exam
CC 29	Extreme medicine	3,0	Credit test
CC 30	Training of reserve officers of the field of knowledge "Health care". Specialty 226 "Pharmacy, industrial pharmacy"	3,0	Credit test
CC 31	Pharmacoeconomics	3,0	Graded test
CC 32	Toxicological and forensic chemistry	3,0	Graded test
CC 33	Organization and economics of pharmacy	7,0	Exam
CC 34	Clinical pharmacy and pharmaceutical care	8,0	Exam
CC 35	Pharmaceutical and medical commodity science	5,0	Graded test
CC 36	Pharmaceutical law and legislation	3,0	Graded test
CC 37	Occupational Health	3,0	Credit test

CC 38	Pharmaceutical management and marketing	6.0	Exam
CC 39	Social pharmacy	3.0	Exam
CC 40	Biopharmacy	3.0	Graded test
CC 41	Quality systems in pharmacy	3.0	Credit test
CC 42	Methodology of scientific research on the topic of qualification work	3.0	Defense of qualification work
Total volume of professional training disciplines		**110.0**	
1.3. Cycle of practical training disciplines			
CC 43	First pre-hospital aid (with introductory medical practice)	3.0	Credit test
CC 44	Industrial practice in drug technology	4.0	Graded test
CC 45	Industrial practice in the organization and economics of pharmacy	4.0	Graded test
CC 46	Industrial practice in pharmaceutical management and marketing	4.0	Graded test
CC 47	Industrial practice in pharmaceutical chemistry	4.0	Graded test
CC 48	Industrial practice in clinical pharmacy	3.0	Graded test
CC 49	Industrial practice in pharmacognosy	4.0	Graded test
CC 50	Pre-diploma practice	4.0	Graded test
Total volume of practical training disciplines		**30.0**	
TOTAL VOLUME OF COMPULSORY COMPONENTS – 225.0 ECTS credits			
2. ELECTIVE COMPONENTS			
2.1. Disciplines of elective block 1			
Block of general training disciplines			
A seeker of higher education (full-time) must choose 6.0 ECTS credits			
EC 1.1	Work with information sources	3.0	Credit test
EC 1.2	Fundamentals of system analysis	3.0	Credit test
EC 1.3	Modeling of scientific research	3.0	Credit test
EC 1.4	Pharmaceutical informatics and statistics	3.0	Credit test
EC 1.5	Life safety	3.0	Credit test
EC 1.6	Bioactivity of inorganic compounds	3.0	Credit test
EC 1.7	Chemistry of elements	3.0	Credit test
EC 1.8	Introduction to organic chemistry	3.0	Credit test
EC 1.9	Physical education	3.0	Credit test
EC 1.10	Conflictology	3.0	Credit test
EC 1.11	Basics of logic	3.0	Credit test
EC 1.12	Basics of bioethics and biosafety	3.0	Credit test
EC 1.13	Theory of cognition and pharmacy	3.0	Credit test
EC 1.14	Foreign language	3.0	Credit test
Block of historical, cultural and patriotic training			
A seeker of higher education (full-time) must choose 6.0 ECTS credits			
EC 1.15	History of domestic pharmacy	3.0	Credit test
EC 1.16	Folk psychology	3.0	Credit test
EC 1.17	Fundamentals of democracy	3.0	Credit test
EC 1.18	History of national philosophical thought	3.0	Credit test
EC 1.19	History of Ukraine	3.0	Credit test
EC 1.20	History of Ukrainian culture	3.0	Credit test
EC 1.21	History of Ukrainian political doctrines	3.0	Credit test
EC 1.22	Ukrainian national idea	3.0	Credit test
EC 1.23	Politology	3.0	Credit test

2.2. Disciplines of elective block 2			
A seeker of higher education (full-time) must choose 18.0 ECTS credits *A seeker of higher education (extramural) must choose 15.0 ECTS credits*			
EC 2.1	European standard of computer literacy	3.0	Credit test
EC 2.2	Hygiene in pharmacy	3.0	Credit test
EC 2.3	Dietetics	3.0	Credit test
EC 2.4	Theoretical foundations of the technology of dosage forms	3.0	Credit test
EC 2.5	Psychology of communication	3.0	Credit test
EC 2.6	Psychology of conflict	3.0	Credit test
EC 2.7	Global pharmaceutical distribution	3.0	Credit test
EC 2.8	Leadership	3.0	Credit test
EC 2.9	Academic writing	3.0	Credit test
EC 2.10	The image of a pharmacist	3.0	Credit test
EC 2.11	Sociology and medical sociology	3.0	Credit test
EC 2.12	Theory and practice of professional language communication	3.0	Credit test
EC 2.13	Cosmetic products in the pharmacy assortment	3.0	Credit test
EC 2.14	Practical trining in pharmaceutical botany	3.0	Credit test
EC 2.15	Modern analytical laboratory pharmaceutical practice	3.0	Credit test
EC 2.16	Physico-chemical research methods in analytical chemistry	3.0	Credit test
EC 2.17	Identification of organic compounds	3.0	Credit test
EC 2.18	Valeology	3.0	Credit test
EC 2.19	Aerobic types of health fitness	3.0	Credit test
EC 2.20	Anthropology	3.0	Credit test
EC 2.21	Temporal aspects of human existence	3.0	Credit test
2.3. Disciplines of elective block 3			
A seeker of higher education (full-time) must choose 15.0 ECTS credits *A seeker of higher education (extramural) must choose 15.0 ECTS credits*			
EC 3.1	Physico-chemical analysis in the creation of medicines	3.0	Credit test
EC 3.2	Instrumental methods of analysis	3.0	Credit test
EC 3.3	Globalization of the pharmaceutical industry	3.0	Credit test
EC 3.4	Ethical problems in pharmacy	3.0	Credit test
EC 3.5	Management decision-making methods	3.0	Credit test
EC 3.6	Intellectual business and innovation development	3.0	Credit test
EC 3.7	Organization and regulation of pharmaceutical industry enterprises	3.0	Credit test
EC 3.8	Basics of pharmacy economics	3.0	Credit test
EC 3.9	Risk management in the pharmaceutical business	3.0	Credit test
EC 3.10	Basics of medical communications	3.0	Credit test
EC 3.11	World civilizations	3.0	Credit test
EC 3.12	Ukrainian medical terminology	3.0	Credit test
EC 3.13	Ukrainian as a foreign language	3.0	Credit test
EC 3.14	Cosmetology recipe	3.0	Credit test
EC 3.15	Technology of veterinary drugs	3.0	Credit test
EC 3.16	Homeopathic medicines	3.0	Credit test
EC 3.17	Mechanism of pharmacological activity and toxicity of drugs	3.0	Credit test

EC 3.18	Computer modeling in pharmacy	3.0	Credit test
EC 3.19	Pharmaceutical aspects of toxicomania and drug addiction	3.0	Credit test
EC 3.20	Computer technologies in drug research	3.0	Credit test
EC 3.21	Practical training in pharmacognosy	3.0	Credit test
EC 3.22	Theoretical foundations of synthesis, the relationship between the structure and action of medicinal products	3.0	Credit test
EC 3.23	Classic massage	3.0	Credit test
EC 3.24	Fitness with elements of martial arts	3.0	Credit test
EC 3.25	Logic and systemology	3.0	Credit test
2.4. Disciplines of elective block 4			
A seeker of higher education (full-time) must choose 15.0 ECTS credits *A seeker of higher education (extramural) must choose 15.0 ECTS credits*			
EC 4.1	Dermatology	3.0	Credit test
EC 4.2	Venereology	3.0	Credit test
EC 4.3	The influence of medicinal products on changing medicinal clinical-laboratory and instrumental indicators	3.0	Credit test
EC 4.4	Laboratory diagnostics	3.0	Credit test
EC 4.5	Biochemistry of essential nutrients	3.0	Credit test
EC 4.6	Marketing research in pharmacy	3.0	Credit test
EC 4.7	International marketing in pharmacy	3.0	Credit test
EC 4.8	Basics of standardization and certification in pharmacy	3.0	Credit test
EC 4.9	International aspects of pharmaceutical law	3.0	Credit test
EC 4.10	Modern medical products	3.0	Credit test
EC 4.11	Technology of biological preparations	3.0	Credit test
EC 4.12	Small-scale production of finished pharmaceutical product (FPP)	3.0	Credit test
EC 4.13	Development of pharmaceutical products	3.0	Credit test
EC 4.14	Production and application of cosmetic preparations	3.0	Credit test
EC 4.15	Nutrition and bromatology	3.0	Credit test
EC 4.16	Pharmaceutical aspects of food products	3.0	Credit test
EC 4.17	Modern antimicrobial drugs	3.0	Credit test
EC 4.18	Medicinal toxicology	3.0	Credit test
EC 4.19	Medicinal plants and phytotherapy	3.0	Credit test
EC 4.20	Therapeutic and sports massage	3.0	Credit test
EC 4.21	Mentally regulating types of health-improving fitness	3.0	Credit test
EC 4.22	Hydrotherapy, SPA procedures	3.0	Credit test
2.5. Disciplines of elective block 5			
A seeker of higher education (full-time) must choose 15.0 ECTS credits *A seekerof higher education (extramural) must choose 15.0 ECTS credits*			
EC 5.1	The interaction of medicinal products in pharmasist's practice	3.0	Credit test
EC 5.2	Standardization of medicines	3.0	Credit test
EC 5.3	Pharmaceutical market research	3.0	Credit test
EC 5.4	Economic management of the company	3.0	Credit test
EC 5.5	Basics of financial management in pharmacy	3.0	Credit test
EC 5.6	Assessment of medical technologies	3.0	Credit test
EC 5.7	Management of public procurement in pharmacy	3.0	Credit test

EC 5.8	Pharmaceutical logistics	3.0	Credit test
EC 5.9	Pricing in pharmacy	3.0	Credit test
EC 5.10	Pharmaceutical biotechnology	3.0	Credit test
EC 5.11	Technology of medical cosmetics	3.0	Credit test
EC 5.12	Resource science of medicinal plants	3.0	Credit test
EC 5.13	Basics of pharmacogenetics	3.0	Credit test
EC 5.14	Home care for the sick and disabled	3.0	Credit test
EC 5.15	Kinesio taping in medicine and sports	3.0	Credit test
EC 5.17	Cosmetic and Anti- age massage	3.0	Credit test
EC 5.18	Manual methods of physical therapy. Postisometric relaxation	3.0	Credit test
EC 5.19	Strength fitness	3.0	Credit test
EC 5.20	Sports nutricitology	3.0	Credit test
2.6. Disciplines of elective block 6 *A seeker of higher education (extramural) must choose 6.0 ECTS credits*			
EC 6.1	Comprehensive analysis of the activity of pharmaceutical institutions	3.0	Credit Test
EC 6.2	Gender specifics of the professional development of a successful medical (pharmaceutical) specialist	3.0	Credit Test
EC 6.3	Good practices in pharmacy	3.0	Credit Test
EC 6.4	Personnel management and labor law	3.0	Credit Test
EC 6.5	Audit of quality management systems	3.0	Credit Test
EC 6.6	Pharmaco-technological research of medicines	3.0	Credit Test
EC 6.7	Technology of preparations of animal origin	3.0	Credit Test
EC 6.8	Modern pharmaceutical technologies	3.0	Credit Test
EC 6.9	Basics of pharmaconutritiology	3.0	Credit Test
EC 6.10	Side effects of drugs	3.0	Credit Test
EC 6.11	Peculiarities of pharmaceutical analysis of drugs of heterocyclic structure.	3.0	Credit Test
EC 6.12	Peculiarities of pharmaceutical analysis of medicinal products of natural origin	3.0	Credit Test
TOTAL VOLUME OF ELECTIVE COMPONENTS		**75 ECTS credits**	
TOTAL VOLUME OF THE EDUCATIONAL AND PROFESSIONAL PROGRAM 300 ECTS credits			

2.2. The sequence of educational activities of the higher education seeker by educational components

No.	The name of the academic discipline	Distribution by years of study				
		1	2	3	4	5
1.	History of Ukraine and Ukrainian culture	*				
2.	English	*				
3.	Information technologies in pharmacy		*			
4.	Foreign language (for professional purposes)			*		
5.	Ukrainian language (for professional purposes)	*				
6.	Higher mathematics	*				
7.	Biological physics with physical methods of analysis	*				
8.	Philosophy with a cycle of academic integrity	*				
9.	Biology with the basics of genetics	*				
10.	Human anatomy	*				

11.	Human physiology	*				
12.	Latin	*				
13.	Microbiology with the basics of immunology		*			
14.	Pathological physiology		*			
15.	Organic chemistry		*			
16.	General and inorganic chemistry	*				
17.	Analytical chemistry		*			
18.	Pharmaceutical botany		*			
19.	Biological chemistry			*		
20.	Basics of consumer behavior in pharmacy	*				
21.	Introduction to pharmacy	*				
22.	Ethics and deontology in pharmacy	*				
23.	Drug technology			*	*	
24.	Pharmacognosy			*		
25.	Pharmacotherapy with pharmacokinetics				*	
26.	Pharmacology			*		
27.	Pharmaceutical chemistry			*	*	*
28.	Physical and colloidal chemistry		*			
29.	First pre-hospital aid (with introductory medical practice)		*			
30.	Extreme medicine			*		
31.	Training of reserve officers of the field of knowledge "Health care". Specialty 226 Pharmacy, Industrial Pharmacy			*		
32.	Pharmacoeconomics				*	
33.	Toxicological and forensic chemistry				*	
34.	Organization and economy of pharmacy				*	
35.	Clinical pharmacy and pharmaceutical care				*	*
36.	Pharmaceutical and medical commodity science				*	
37.	Pharmaceutical law and legislation			*		
38.	Occupational health				*	
39.	Pharmaceutical management and marketing				*	*
40.	Social pharmacy				*	
41.	Biopharmacy					*
42.	Quality systems in pharmacy					*
43.	Industrial practice in drug technology					*
44.	Industrial practice in the organization and economy of pharmacy					*
45.	Industrial practice in pharmaceutical management and marketing					*
46.	Industrial practice in pharmaceutical chemistry					*
47	Industrial practice in clinical pharmacy					*
48.	Industrial practice in pharmacognosy					*
49.	Pre-diploma practice					*
50.	Methodology of scientific research on the topic of qualification work					*

2.3. COMPLIANCE MATRIX OF PROGRAM COMPETENCIES

	CC 1	CC 2	CC 3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10	CC 11	CC 12	CC 13	CC 14	CC 15	CC 16	CC 17	CC 18	CC 19	CC 20	CC 21	CC 22	CC 23	CC 24	CC 25	CC 26	CC 27
GC 1	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+		+			+	+	+	+	+
GC 2		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+		+		+	+	+	+	+	+	+
GC 3		+		+				+	+		+						+						+	+	+	+	
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GC 5	+	+		+	+	+			+		+	+		+	+	+	+						+	+		+	+
GC 6		+		+	+	+		+		+	+										+	+	+		+	+	
GC 7		+		+			+				+	+					+	+						+	+	+	
GC 8	+			+			+				+														+	+	
GC 9	+	+	+														+		+	+				+	+	+	
GC 10		+					+	+	+		+	+					+	+				+	+	+	+	+	
GC 11		+	+		+	+	+	+	+		+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+
GC 12		+					+	+	+		+	+	+				+	+					+	+			
GC 13	+	+										+						+	+				+		+		
GC 14	+	+	+										+							+			+		+		
GC 1 5	+	+		+	+	+	+	+		+	+	+	+				+						+	+	+	+	
GC 16		+			+	+		+				+	+	+	+	+	+	+					+	+		+	+
GC 17							+															+					
SC 1	+	+			+	+	+	+	+	+	+	+											+	+	+	+	
SC 2		+			+	+	+	+		+	+	+					+		+		+	+	+	+	+	+	
SC 3							+										+					+		+	+	+	
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	CC 28	CC 29	CC 30	CC 31	CC 32	CC 33	CC 34	CC 35	CC 36	CC 37	CC 38	CC 39	CC 40	CC 41	CC 42	CC 43	CC 44	CC 45	CC 46	CC 47	CC 48	CC 49	CC 50				
GC 1	+	+	+				+							+	+	+				+	+	+	+				
GC 2	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+				
GC 3	+	+	+		+		+						+	+	+						+	+	+				
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GC 11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+				
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IC – INTEGRAL COMPETENCE
GC - GENERAL COMPETENCIES
SC – SPECIAL COMPETENCIES

2.4. MATRIX OF PROVIDING PROGRAM LEARNING OUTCOMES (PLO) BY RELEVANT COMPONENTS OF THE EDUCATIONAL AND PROFESSIONAL PROGRAM

	CC 1	CC 2	CC 3	CC 4	CC 5	CC 6	CC 7	CC 8	CC 9	CC 10	CC 11	CC 12	CC 13	CC 14	CC 15	CC 16	CC 17	CC 18	CC 19	CC 20	CC 21	CC 22	CC 23	CC 24	CC 25	CC 26
PLO 1		+		+	+	+		+	+	+	+	+	+				+	+					+	+	+	+
PLO 2		+			+	+	+	+			+	+	+				+							+	+	+
PLO 3		+						+	+		+	+		+	+	+	+	+	+		+	+	+	+	+	+
PLO 4	+	+	+	+							+						+			+			+	+	+	+
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PLO 6	+	+																						+	+	+
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PLO 10								+				+													+	+
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	CC 27	CC 28	CC 29	CC 30	CC 31	CC 32	CC 33	CC 34	CC 35	CC 36	CC 37	CC 38	CC 39	CC 40	CC 41	CC 42	CC 43	CC 44	CC 45	CC 46	CC 47	CC 48	CC 49	CC 50
PLO 1		+						+							+	+	+					+	+	+
PLO 2		+						+							+	+						+	+	+
PLO 3	+	+			+		+	+	+	+	+	+	+		+	+			+	+	+	+	+	+
PLO 4								+							+	+						+	+	+
PLO 5							+	+				+			+	+			+	+		+		+
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PLO 26						+		+					+		+	+						+	+	+
PLO 27								+						+	+	+						+	+	+
PLO 28	+							+							+	+		+			+	+	+	+
PLO 29	+						+	+		+		+		+	+	+			+	+	+	+	+	+
PLO 30			+	+			+	+						+	+	+			+			+	+	+
PLO 31												+			+	+				+				+
PLO 32						+		+						+	+	+						+	+	+
PLO 33						+		+								+						+		+
PLO 34						+		+							+	+						+		+
PLO 35												+				+				+				+
PLO 36	+						+	+	+	+				+	+	+		+	+		+	+	+	+
PLO 37								+				+			+	+				+		+	+	+
PLO 38																+								+
PLO 39																+							+	+
PLO 40															+	+					+			+
PLO 41			+	+				+								+	+					+		+
PLO 42			+	+				+								+	+					+		+
PLO 43			+	+		+		+			+					+						+		+

PLO - PROGRAM LEARNING OUTCOMES

3. Forms of Certification of Higher Education Seekers

Forms of certification of seekers of higher education	Attestation of graduates of the educational program (master's degree holders) in the specialty 226 Pharmacy, industrial pharmacy of the field of knowledge 22 Health care is carried out in the form of a unified state qualification exam (USQE) and defense of the qualification work. USQE is carried out in accordance with the Resolution of the Cabinet of Ministers of Ukraine No. 334 dated March 28, 2018 "On adoption of the Unified State Qualification Exam Procedure for the students enrolled in the Master's academic program and majoring in "22 Healthcare" branch of knowledge" and dated May 19, 2021 No. 497 "On the attestation of seekers of professional pre-higher education degrees and higher education degrees at the first (bachelor) and second (master) levels in the form of a Unified State Qualification Exam". Graduates who successfully completed the educational and professional program and successfully passed the State Certification are issued a document on higher education of the established form awarding him/her a master's degree with the qualification: "Master of Pharmacy. Pharmacist".
Requirements for qualification work	Qualification work involves generalized independent research and experimental work in the specialty . The qualification work must demonstrate the ability of the master's degree seeker to solve problems of a research and/or innovative nature in the field of pharmacy. The qualification work must not contain academic plagiarism, signs of fabrication and falsification. The qualification work must be published in the repository of the institution of higher education. Defense of qualification work is public and open.

Guarantor of Educational and Professional Program,
Doctor of Pharmaceutical Sciences,
Professor

Liana UNHURIAN