MINISTRY OF HEALTH OF UKRAINE
IVANO-FRANKIVSK NATIONAL MEDICAL UNIVERSITY

EDUCATIONAL AND PROFESSIONAL PROGRAMME "PHARMACY, INDUSTRIAL PHARMACY"

Second (Master's) Level of Higher Education

Field of Knowledge: I Healthcare and Social Welfare
Specialty: I8 Pharmacy
Specialization: I8.01 Pharmacy
Educational Qualification: Master of Pharmacy
Professional Qualification: Pharmacist

Edition 2020–09

APPROVED BY
THE ACADEMIC COUNCIL OF IFNMU
Chair of the Academic Council _____ Mykola OSTROVSKYI
(Minutes No. 5 dated April 28, 2025)

The Educational and Professional Programme shall be enacted from September 1, 2025.

RECTOR OF IFNMU _____ Roman YATSYSHYN
(Order No. 595-d dated April 29, 2025)

Ivano-Frankivsk – 2025

APPROVAL SHEET
of the Educational and Professional Programme

Proposed by:

Guarantor of the Educational Programme: Iryna Fediak, Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Forensic Medicine, Medical and Pharmaceutical Law, Dean of the Faculty of Pharmacy.

Members of the working group:

1. Andrii Hrytsyk – Doctor of Pharmaceutical Sciences, Professor, Head of the Department of Pharmaceutical Management, Drug Technology and Pharmacognosy;
2. Iryna Kupnovytska – Doctor of Medical Sciences, Professor, Head of the Department of Clinical Pharmacology and Clinical Pharmacy;
3. Andrii Stetskiv – Doctor of Chemical Sciences, Professor, Head of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education;
4. Iryna Ivanchuk – Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education;
5. Dmytro Melnyk – Candidate of Chemical Sciences, Associate Professor of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education, ECTS Coordinator of the Faculty of Pharmacy;
6. Mariia Melnyk – Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Pharmaceutical Management, Drug Technology and Pharmacognosy;
7. Nataliia Leochko – Candidate of Technical Sciences, Associate Professor of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education, Academic Secretary of the Academic Council of IFNMU;
8. Svitlana Maliuvanchuk – Doctor of Philosophy, Associate Professor of the Department of Pharmaceutical Management, Drug Technology and Pharmacognosy, Methodologist of the Academic Affairs Department;
9. Tetiana Senychak – full-time student, group monitor.

Submitted by:

Methodological Commission of the Faculty of Pharmacy of IFNMU
Chair of the Methodological Commission
of the Faculty of Pharmacy Associate Professor Iryna FEDIAK

Approved by:

Central Methodological Council of IFNMU
Chair of the
Central Methodological Council Professor Serhii HERASHCHENKO

PREAMBLE

The Educational and Professional Programme was developed in accordance with the requirements of Article 1, Clause 17, Article 10, Clause 3 of the Law of Ukraine "On Higher Education", the Law of Ukraine "On Amendments to Certain Laws of Ukraine Regarding the Development of Individual Educational Trajectories and Improvement of the Educational Process", the National Classifier of Ukraine: "Classifier of Professions" DK 003:2010, and the Resolution of the Cabinet of Ministers of Ukraine dated April 29, 2015 No. 266 "On Approval of the List of Fields of Knowledge and Specialties in Which Higher Education Applicants Are Trained".

The Educational and Professional Programme was developed by the working group of specialty I8 "Pharmacy, Industrial Pharmacy" of IFNMU consisting of:

- Iryna Fediak – Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Forensic Medicine, Medical and Pharmaceutical Law, Dean of the Faculty of Pharmacy, Guarantor of the Educational and Professional Programme;
- Andrii Hrytsyk – Doctor of Pharmaceutical Sciences, Professor, Head of the Department of Pharmaceutical Management, Drug Technology and Pharmacognosy;
- Iryna Kupnovytska – Doctor of Medical Sciences, Professor, Head of the Department of Clinical Pharmacology and Clinical Pharmacy;
- Andrii Stetskiv – Doctor of Chemical Sciences, Professor, Head of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education;
- Iryna Ivanchuk – Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education, Deputy Dean of the Faculty of Pharmacy;
- Dmytro Melnyk – Candidate of Chemical Sciences, Associate Professor of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education, ECTS Coordinator of the Faculty of Pharmacy;
- Mariia Melnyk – Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Pharmaceutical Management, Drug Technology and Pharmacognosy;
- Nataliia Leochko – Candidate of Technical Sciences, Associate Professor of the Department of Chemistry, Pharmaceutical Analysis and Postgraduate Education, Deputy Dean of the Faculty of Pharmacy;
- Svitlana Maliuvanchuk – Doctor of Philosophy, Associate Professor of the Department of Pharmaceutical Management, Drug Technology and Pharmacognosy, Methodologist of the Academic Affairs Department;
- Tetiana Senychak – full-time student, group monitor.

Feedback from the academic community:

1. Svitlana Marchyshyn – Doctor of Pharmaceutical Sciences, Professor, Head of the Department of Pharmacognosy with Medical Botany, I. Horbachevsky Ternopil National Medical University, Ternopil.

Review feedback from external stakeholders:

1. Nadiia Shpur – Head of the State Service of Ukraine on Medicines and Drugs Control in Ivano-Frankivsk Region, pharmacist of the highest qualification category, Ivano-Frankivsk;
2. Yaroslava Samborska – Head of TzOV "Centoriia", pharmacist of the highest qualification category, Ivano-Frankivsk;

3. Olha Kravchuk – graduate of the Faculty of Pharmacy, class of 2011, Head of Staff Training Department of the pharmacy chain "Zdorova Rodyna";
4. Ihor Oktysiuk – graduate of the Faculty of Pharmacy, class of 2012, Head of Pharmacy No. 9 of TzOV "Apteka Nyzkykh Tsin Volyn";
5. Artur Pustovit – graduate of the Faculty of Pharmacy, class of 2013, Magister farmacji, Solispharm spółka z ograniczoną odpowiedzialnością (Warsaw, Poland).

Profile of the Educational Programme in Specialty I8 Pharmacy

1 – General Information	
1 – General Information Full name of the higher education institution and structural unit	Ivano-Frankivsk National Medical University (IFNMU), Faculty of Pharmacy.
Degree of higher education and qualification title in the original language	Higher Education Degree – Master Educational Qualification – Master of Pharmacy Professional Qualification – Pharmacist Qualification stated in the diploma – Master of Pharmacy, Pharmacist.
Official title of the Educational Programme (EP)	Educational and Professional Programme (EP) "Pharmacy, Industrial Pharmacy" of the second (Master's) level of higher education.
Type of diploma and volume of the EP	Master's diploma, single. 300 ECTS credits. Duration of study: 4 years 10 months (full-time mode of study) on the basis of complete general secondary education. Duration of study: 3 years 10 months (full-time mode of study) and 4 years 6 months (part-time mode of study) on the basis of the educational and qualification level of Junior Specialist, educational degree of Professional Junior Bachelor, Junior Bachelor in specialty I8 "Pharmacy" / 226 "Pharmacy, Industrial Pharmacy", and Master's degree in specialties of field of knowledge I "Healthcare and Social Welfare" / 22 "Healthcare". On the basis of the educational and qualification level of Junior Specialist, educational degree of Professional Junior Bachelor, Junior Bachelor in specialty I8 "Pharmacy" / 226 "Pharmacy, Industrial Pharmacy", and Master's degree in specialties of field of knowledge I "Healthcare and Social Welfare" / 22 "Healthcare", the University has the right to recognize and transfer no more than 60 ECTS credits obtained within the framework of a previous educational programme.

Accreditation status	Accredited.
Cycle / level	National Qualifications Framework of Ukraine (NQF) – Level 7; European Qualifications Framework (EQF) – Level 7; Qualifications Framework of the European Higher Education Area (QF-EHEA) – Second Cycle.
Prerequisites	Requirements for prior education – complete general secondary education (Level 3 of the NQF or a higher level) (based on the results of the National Multi-Subject Test), or the educational and qualification level of Junior Specialist, educational degree of Professional Junior Bachelor, Junior Bachelor in specialty I8 "Pharmacy" / 226 "Pharmacy, Industrial Pharmacy", and Master's degree in specialties of field of knowledge I "Healthcare and Social Welfare" / 22 "Healthcare" (based on the results of entrance examinations) – https://www.ifnmu.edu.ua/admission_committe_2025/.
Language(s) of instruction	Ukrainian, English.
Validity period of the EP	The educational programme is valid until July 1, 2026, with annual scheduled updating.
Permanent web address of the EP description	https://www.ifnmu.edu.ua/educational-programs/

2 – Purpose of the Educational Programme

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

Ensuring highly efficient activity in the national and international educational and scientific space with the purpose of training highly qualified pharmacists with moral and spiritual values, competitive in the domestic and international labor markets.

Formation of the ability to apply acquired knowledge, skills, abilities and understanding from humanities, fundamental and professionally oriented disciplines for professional activity in the relevant pharmaceutical position with the purpose of supplying the population and healthcare institutions with medicines and related goods: development, production, quality assurance, distribution of medicines and related goods, provision of pharmaceutical care.

3 – Characteristics of the Educational Programme

Official title of the EP	Educational and Professional Programme "Pharmacy, Industrial Pharmacy" of the second (Master's) level of higher education.

Subject area (field of knowledge, specialty, specialization)	Field of knowledge – I Healthcare and Social Welfare; Specialty – I8 Pharmacy; Specialization – I8.01 Pharmacy. Object of activity: development, production, quality control, wholesale and retail sale of medicines, pharmaceutical servicing, pharmaceutical service, pharmaceutical care. Theoretical content of the subject area: principles, concepts, theories of development, production, quality control, wholesale and retail sale of medicines, pharmaceutical servicing, pharmaceutical service, pharmaceutical care. Methods, methodologies and technologies: organoleptic, physical, chemical, physicochemical, biopharmaceutical, pharmacotechnological, microbiological, biochemical, pharmacological, clinical, economic-calculation, pharmacoeconomic methods; marketing research methodologies, modelling, data analysis, forecasting; technologies of medicinal product manufacturing and modern digital technologies. Tools and equipment: instruments, equipment and facilities of pharmaceutical (pharmacy) healthcare institutions; technological equipment for pharmaceutical development and compounding / manufacturing of medicines; analytical equipment for quality control of medicinal products; specialized information systems and software.
Orientation of the EP	The EP "Pharmacy, Industrial Pharmacy" is oriented toward modern WHO requirements regarding the role and mission of the pharmacist in the healthcare system and organically combines the theoretical and practical components of training both at practice sites and in conditions максимально наближених до реальних. The EP is aimed at forming the ability to solve typical and complex specialized tasks and to critically comprehend and resolve practical problems in professional pharmaceutical and/or research-innovation activity through application of provisions, theories and methods of fundamental, chemical, technological, biomedical and socio-economic sciences; the ability to apply acquired knowledge, skills and abilities from disciplines of general and professional training to solve typical tasks of a specialist's activity in the relevant position, including medicine compounding, storage, quality control, delivery, distribution, dispensing, regulation of medicinal supply, as well as

	counselling, providing information about medicines, and monitoring adverse reactions and/or treatment inefficacy; the ability to integrate knowledge and resolve complex issues, formulate judgments under conditions of insufficient or limited information; and to clearly and unambiguously communicate one's knowledge, conclusions and their substantiation to professional and non-professional audiences.
Main focus of the EP and specialization	The focus of the EP is oriented toward training modern specialists capable of solving complex specialized tasks and practical problems through acquiring general and special competencies for professional activity in the relevant position, including provision of pharmaceutical care; ensuring safe and rational use of medicines; monitoring the effectiveness of pharmacotherapy and/or adverse reactions; readiness to bear (or share) responsibility for the results of pharmacotherapy, storage of medicines, quality control, delivery, distribution, promotion, regulation, supply of medicines and other pharmacy assortment goods, taking into account modern international trends; and provision of pharmaceutical care on the basis of pharmaceutical ethics and deontology. Special higher education in the field of knowledge I Healthcare and Social Welfare, specialty I8 Pharmacy, specialization I8.01 Pharmacy. Key words: healthcare, pharmacy, higher education, master.
Features of the EP	The programme combines theoretical and practical training of students, is based on modern scientific results and the principles of pharmaceutical science and the set of good pharmaceutical practices, is implemented in a logical sequence of disciplines of the curriculum, and involves practitioner specialists in working with students, including supervision of professional practice placement and delivery of lectures and practical classes of the professional training cycle. Practice placements are mandatory for all students and are conducted at the educational and practical centers (EPCs) of IFNMU and pharmacy institutions. The volume of practice / practical training is 46 ECTS credits. One hundred percent of the EP volume is aimed at ensuring general and professional competencies of specialization I8.01 Pharmacy of specialty I8 Pharmacy. The programme is also delivered in English.
4 – Graduates' Employability and Further Education	
Employability	In accordance with the Professional Standard "Pharmacist", the specialist is prepared for work according to

	NACE DK 009:2010: Section C Manufacturing Division 21 Manufacture of basic pharmaceutical products and pharmaceutical preparations Group 21.1 Manufacture of basic pharmaceutical products Class 21.10 Manufacture of basic pharmaceutical products Group 21.2 Manufacture of pharmaceutical preparations and materials Class 21.20 Manufacture of pharmaceutical preparations and materials Section G Wholesale and retail trade; repair of motor vehicles and motorcycles Division 46 Wholesale trade, except of motor vehicles and motorcycles Class 46.46 Wholesale of pharmaceutical goods Division 47 Retail trade, except of motor vehicles and motorcycles Group 47.7 Retail sale of other goods in specialized stores Class 47.73 Retail sale of pharmaceutical goods in specialized stores Section P Education Division 85 Education Group 85.4 Higher education Class 85.41 Professional pre-higher education Class 85.42 Higher education Section Q Human health and social work activities Division 86 Human health activities Group 86.9 Other human health activities Class 86.90 Other human health activities Upon completion of the educational programme, the specialist is capable of performing the following professional work: • Pharmacist-intern (Classifier of Professions code – 3228); • Junior Research Associate (Pharmacy) (code – 2224.1); • Research Associate (Pharmacy) (code – 2224.1); • Higher Education Institution Lecturer (code – 2310.2); • Lecturer-Trainee (code – 3340). Graduates of specialization I8.01 Pharmacy who have obtained the professional qualification of Pharmacist, after completing internship training (and specialization, if necessary), are entitled to work in positions corresponding to managerial and

	professional occupations in the field of pharmacy, according to the Classifier of Professions DK 003:2010: 2 Professionals 22 Professionals in Life Sciences and Medical Sciences 222 Professionals in Medicine (except nursing professionals) 2224 Professionals in Pharmacy 2224.2 Pharmacists: • 2224.2 Pharmacist • 2224.2 Pharmacist-Analyst • 2224.2 Pharmacist-Toxicologist • 2224.2 Pharmacist-Organizer and in corresponding managerial positions in pharmaceutical (pharmacy) healthcare institutions and their structural subdivisions. This list is not exhaustive. The professional qualification of Pharmacist is awarded upon completion of this Master's-level EP. Subsequent awarding / confirmation of professional qualifications is carried out in accordance with the regulatory legal acts of the Ministry of Health of Ukraine. Therefore, in accordance with the Professional Standard "Pharmacist", the professional qualification of Pharmacist enables the student / graduate of the EP (after internship training and, where necessary, specialization) to work in pharmacies, wholesale pharmaceutical enterprises, chemical-pharmaceutical industry enterprises, medicine quality control laboratories, hospitals, other healthcare institutions, forensic-chemical and toxicological laboratories, research institutes, higher education institutions, and sectoral institutions of the relevant profile.
Further education	Internship training and acquisition of a secondary pharmaceutical specialization. In addition, all graduates of specialty I8 Pharmacy, specialization I8.01 Pharmacy, have sufficient qualification for occupation 2224.1 "Research Associates (Pharmacy) and teaching specialized disciplines in professional pre-higher and higher education institutions in the corresponding positions". Such a specialist has the right to: • undergo specialization and perform the corresponding professional work of a pharmacist of a certain specialty specified in the current National Classifier of Ukraine

	"Classifier of Professions", and occupy the corresponding pharmaceutical position; • continue education at the third (educational and scientific) level of higher education to obtain the degree of Doctor of Philosophy in the field of knowledge I Healthcare and Social Welfare, specialty I8 Pharmacy; • acquire another specialty that provides the opportunity to occupy the corresponding pharmaceutical position and perform the corresponding professional work; • improve qualifications in the system of continuous postgraduate education in specialty I8 Pharmacy, and also acquire additional qualifications in the system of postgraduate education.
5 – Teaching and Assessment	
Teaching and learning	Teaching in the form of lectures, practical classes, seminar classes in small groups at the Educational and Practical Centers "Pharmacy" and "Medicine"; completion of professional practice placement in pharmacy institutions, manufacturing enterprises, and at the interdepartmental educational and rehabilitation center "Arnika" (Yaremche); consultations with teachers (including distance consultations); and independent extracurricular work of students. Learning: student-centered, initiative-based self-learning, competence-based and problem-oriented; learning through practice; blended learning (e-learning), which makes it possible to implement the purpose and the right to an individual organization of learning.
Assessment	Assessment of learning outcomes is carried out on the principles of objectivity, consistency and systematicity, planning, uniformity of requirements, openness, transparency, accessibility and clarity of assessment methodologies, and consideration of students' individual capabilities. The system of assessment of students' knowledge in each discipline includes current and final knowledge control, assessment of practice results, and attestation of graduates. Current assessment means verification of knowledge during practical and seminar classes, presentations, and projects; demonstration of practical skills; and monitoring of students' independent extracurricular work. Final knowledge control is conducted in the form of a final module assessment and an examination.

	Final attestation of students of the Educational and Professional Programme is carried out in the form of the Unified State Qualification Examination (USQE), defence of the qualification (master's) thesis, and the Objective Structured Practical Examination (OSPE). The USQE consists of two separate testing stages and includes: the integrated test examination STEP, which assesses whether the quality of the specialist's theoretical training complies with the higher education standard; and the professionally oriented English language examination, which assesses the student's competence in professional English. The defence of the completed qualification thesis demonstrates the graduate's level of scientific qualification, the ability to conduct independent scientific inquiry, and to solve research and/or innovation-oriented tasks in the field of pharmacy. The OSPE assesses the graduate's readiness to carry out professional activity through demonstration of practical components of professional competence, as close as possible to the realities of professional practice. Attestation of graduates is conducted in five disciplines: Management and Economics in Pharmacy, Drug Technology, Pharmacognosy, Pharmaceutical Chemistry, and Clinical Pharmacy and Pharmaceutical Care.
6 – Software competencies	
Integral competence	Ability to solve problems of a research and/or innovative nature in the field of pharmacy.
General competences (GC)	GC 1. Ability to abstract thinking, analysis, and synthesis.
	GC 2. Subject area knowledge and understanding; professional activity understanding.
	GC 3. Ability to communicate in the national language both orally and in writing.
	GC 4. Ability to communicate in a foreign language.
	GC 5. Ability to evaluate and ensure the performed works quality.
	GC 6. Ability to work in a team.
	GC 7. Ability to realize one's rights and responsibilities as a society member; the value awareness of a civil (free democratic) society and the need for its sustainable development, the law rule, person and citizen rights and freedoms in Ukraine.
	GC 8. Ability to preserve and multiply moral, cultural, scientific values and society achievements based on understanding the history and patterns of pharmacy development, its place in the

	general system of knowledge about nature and society and in the society, equipment, and technologies development, to use various motor activity types and forms for active recreation and leading a healthy lifestyle.
	GC 9. Ability to use information and communication technologies.
	GC 10. Ability to make decisions and act in compliance with the principle of zero tolerance for corruption and any other forms of misconduct.
Professional specialty competencies (PC)	PC 1. Ability to integrate knowledge and solve complex pharmacy problems in broad or multidisciplinary contexts.
	PC 2. Ability to collect, interpret and apply data necessary for professional activity, research, and innovative projects implementation in the pharmacy field.
	PC 3. Ability to solve pharmacy problems in new or unfamiliar environments in the incomplete or limited information presence, considering social and ethical responsibility aspects.
	PC 4. Ability to convey one's own knowledge, conclusions, and arguments clearly and unambiguously in the pharmacy field to specialists and non-specialists, to people who are studying.
	PC 5. Ability to conduct sanitary and educational work among the population for the purpose of common, dangerous infectious, viral, and parasitic diseases prevention, timely detection promotion and support of adherence to these diseases' treatment according to their medical and biological characteristics and microbiological features.
	PC 6. Ability to consult on prescription and non-prescription drugs and other pharmacy assortment products, pharmaceutical care during the selection and sale of natural and synthetic origin drugs by assessing the risk/benefit ratio, compatibility, considering their biopharmaceutical, pharmacokinetic, pharmacodynamic and physico-chemical and chemical features, indications/contraindications for use, guided by data on the patient health state.
	PC 7. Ability to provide pre-medical assistance to the sick and injured in extreme situations and emergencies.
	PC 8. Ability to monitor the effectiveness and safety of the population's use of medicinal products according to data on their clinical and pharmaceutical characteristics.
	PC 9. Ability to determine medicinal products, xenobiotics, toxins and their metabolites in biological fluids and body tissues,

	to conduct chemical and toxicological studies for the purpose of diagnosing acute poisoning, drug, and alcohol intoxication.
	PC 10. Ability to ensure the natural and synthetic drugs and other pharmacy products proper storage in accordance with their physico-chemical properties and Good Storage Practice (GSP) rules in healthcare facilities.
	PC 11. Ability to organize the pharmacy institutions activities to provide the population, health care institutions with drugs and other pharmacy assortment products and to implement appropriate reporting and accounting systems in it, to conduct product analysis, administrative records considering the pharmaceutical legislation requirements.
	PC 12. Ability to analyze and forecast the main economic indicators of the pharmacy's activity, to calculate the main taxes and fees, to form prices for drugs and other pharmacy assortment products in accordance with Ukraine legislation.
	PC 13. Ability to conduct an analysis of socio-economic processes in pharmacy, forms, methods, and functions of the population pharmaceutical provision system and its components in global practice, indicators of the pharmaceutical care need, effectiveness, and availability in terms of medical insurance and the drugs cost reimbursement.
	PC 14. Ability to organize and conduct the pharmacies production activities for the drugs manufacture in various dosage forms according to the doctors' prescriptions and the medical and preventive institutions requirements (orders), including the technology justification and auxiliary materials selection in accordance with the Good Pharmacy Practice (GPP) rules.
	PC 15. Ability to conduct pharmaceutical development and participate in the production of medicinal products of natural and synthetic origin in the pharmaceutical enterprises conditions in accordance with the Good Manufacturing Practice (GMP) requirements.
	PC 16. Ability to organize and conduct general and marketing management of assortment, product and innovation, price, sales, and communication policies of pharmaceutical market subjects based on the marketing research results and considering market processes at the national and international levels, manage risks in the pharmaceutical supply system .
	PC 17. Ability to organize and conduct 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.; to prevent the low-quality, falsified, and unregistered medicinal products distribution.
	PC 18. 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, physico-chemical, biological, microbiological, and pharmaco-technological methods; conduct medicinal products standardization in accordance with current requirements.
7 – Program learning outcomes	
Program learning outcomes (PLO)	PLO 1. To have and apply specialized conceptual knowledge in the pharmacy field and related fields, considering modern scientific achievements.
	PLO 2. To critically consider scientific and applied problems in the pharmacy field.
	PLO 3. To have specialized knowledge and skills for solving professional problems and tasks, including for the purpose of further knowledge development and procedures in the pharmacy field.
	PLO 4. To communicate freely in the Ukrainian and English languages orally and in writing to discuss professional problems and activities results, scientific research and innovative projects presentation.
	PLO 5. To evaluate and ensure the activities quality and efficiency in the pharmacy field.
	PLO 6. Develop and make effective decisions to solve complex pharmacy problems personally and based on the joint discussion results; formulate the goals of one's own activity and the team activity, considering public and industrial interests, the general strategy, and existing limitations, determine the optimal ways to achieve goals.
	PLO 7. To collect the necessary information on the medicinal products development and production, using professional literature, patents, databases, and other sources; systematize, analyze, and evaluate it using statistical analysis.
	PLO 8. Develop and implement innovative projects in the pharmacy field, as well as related interdisciplinary projects, considering technical, social, economic, ethical, legal, and environmental aspects.
	PLO 9. To formulate, argue, clearly and concretely convey to specialists and non-specialists, including to higher education students, information based on one's own knowledge and

	professional experience, the main trends in the world pharmacy development and related industries.
	PLO 10. To conduct sanitary and educational work among the population for the prevention purpose and in the event of dangerous infectious, viral, and parasitic diseases outbreaks.
	PLO 11. To determine the advantages and disadvantages of drugs of natural and synthetic origin of various pharmacological groups, considering their chemical, physicochemical, biopharmaceutical, pharmacokinetic and pharmacodynamic features and the dosage form type. To recommend to consumers medicinal products and other pharmacy assortment products with the advisory assistance and pharmaceutical care provision.
	PLO 12. To provide pre-medical assistance to patients with urgent conditions and victims in extreme situations.
	PLO 13. To record side effects cases when using medicinal products of natural and synthetic origin; to evaluate factors that can affect the drugs absorption, distribution, deposition, metabolism, and excretion processes and are determined by the human body condition and characteristics and the drugs pharmaceutical characteristics.
	PLO 14. To select biological analysis objects, to determine xenobiotics, toxins, and their metabolites in it; to evaluate the obtained results.
	PLO 15. To predict and determine the environmental factors impact on the quality and consumer characteristics of medicinal products of natural and synthetic origin and other pharmacy assortment products, organize their storage in accordance with their physical and chemical properties and the Good Storage Practices (GSP) rules.
	PLO 16. To implement appropriate organizational and management measures to provide the population and health care institutions with drugs and other pharmacy assortment products; to conduct all reporting and accounting types in pharmacy institutions, administrative record-keeping, and commodity analysis.
	PLO 17. To calculate the main pharmacy institutions activity economic indicators, as well as taxes and fees. To form all price types (purchasing, wholesale and retail) for medicinal products and other pharmacy assortment products.
	PLO 18. To use the analysis data of socio-economic processes in society for the population pharmaceutical supply, to determine the pharmaceutical assistance effectiveness and availability in terms of medical insurance and the drugs cost reimbursement.

	PLO 19. To develop technological documentation for the manufacture of medicinal products, to choose rational technology, to manufacture medicinal products in various dosage forms according to the doctors' prescriptions and the medical and preventive institutions requirements (orders), prepare it for release.
	PLO 20. To conduct pharmaceutical development of medicinal products of natural and synthetic origin in the industrial production conditions.
	PLO 21. To ensure pharmaceutical organizations competitive positions and effective development, considering the marketing research results and market processes at the national and international levels.
	PLO 22. To ensure and conduct quality control of medicinal products of natural and synthetic origin and to document its results; to draw up quality certificates and analysis certificates considering the requirements of the current edition of the State Pharmacopoeia of Ukraine, quality control methods (QC), technological instructions, etc.; to take measures to prevent the low-quality, falsified and unregistered medicinal products distribution.
	PLO 23. To determine the main chemical and pharmaceutical characteristics of medicinal products of natural and synthetic origin; to choose and/or develop quality control methods for its standardization purpose using physical, chemical, physico-chemical, biological, microbiological, and pharmaco-technological methods in accordance with current requirements.
8 – Resources for Programme Implementation	
Staffing	All academic and teaching staff involved in the implementation of the Educational and Professional Programme possess qualifications relevant to the specialty and demonstrate a confirmed level of scientific and professional activity. Ninety percent of academic staff are full-time academic staff of IFNMU. The staffing of departments and the programme development team complies with the Licensing Conditions for Educational Activities in accordance with the requirements of the Resolution of the Cabinet of Ministers of Ukraine No. 1187 dated December 30, 2015. The group responsible for the implementation of the EP includes teaching staff with the following academic degrees: Doctor of Sciences (Dr.Sc., higher doctoral degree) – 17%, PhD (Candidate of Sciences equivalent) – 64%, PhD – 3%, and

	without an academic degree – 16%. The academic specialization of teaching staff corresponds to the disciplines they teach. Among academic staff, 26% hold certificates in accordance with the Common European Framework of Reference for Languages (CEFR) at levels B1–C1 or qualification documents (higher education diploma, academic degree) related to the use of English; of these, 23% possess a level not lower than B2. Professional development is carried out systematically in accordance with the Regulations on Professional Development of Academic and Teaching Staff of IFNMU; the frequency is once per year over a five-year period (https://www.ifnmu.edu.ua/educational-work/). Over the past five years, 100% of teaching staff have completed professional development courses. In addition, 100% of academic staff delivering lectures in educational disciplines of specialty I8 Pharmacy and working on a full-time basis hold an academic degree of Doctor or PhD. Graduate departments are headed by Doctors of Sciences. All academic and teaching staff are employed under contracts following a competitive selection process. The Faculty of Pharmacy closely cooperates with future employers of graduates: joint scientific and practical conferences are held; practicing pharmacists of the Prykarpattia region are members of the examination board for graduate attestation; they deliver lectures, conduct practical classes at enterprise sites, participate in student scientific society meetings, supervise professional practice placement and the part-time internship component; their recommendations are taken into account when forming elective components of the curriculum.
Material and Technical Resources	IFNMU has sufficient material and technical resources to provide training of Master's degree students under the EP. An appropriate infrastructure has been created with a material and technical base that meets current requirements. In 2002, a separate building of the Faculty of Pharmacy was constructed for 400 seats with a total area of 3,836.1 m². A teaching and training pharmacy with the right to compound medicines was established (reorganized into the Educational and Practical Center "Pharmacy" in 2019), as well as educational and research plots adjacent to the faculty building, and the interdepartmental educational and rehabilitation center "Arnika" (Yaremche). In 2023, a major renovation of the "Pharmacy" café was carried out, which provides students with full meals.

	The educational process utilizes modern teaching equipment, the Educational and Practical Centers "Pharmacy" and "Medicine", and computer classrooms. The teaching visualization fund includes multimedia presentations, tables, educational films, samples of medicinal plants, medicinal plant raw materials, pharmaceutical substances for compounding and analysis, instruments and devices, reagents, chemical and laboratory glassware, documentation forms for pharmaceutical activities, etc. Professional practice placement is conducted at pharmacy institutions in the city and region in accordance with concluded agreements. Since May 2022, the volunteer project "Medicines for the Military Made by the Hands of Students, Interns, Teachers, and Staff of the Faculty of Pharmacy of IFNMU" has been operating. Within this project, medicines are manufactured at the experimental pharmacy of the Educational and Practical Center "Pharmacy" for the Armed Forces of Ukraine and civilians in frontline areas, including products with antifungal, drying, anti-inflammatory, wound-healing, anti-cold, and warming effects. All students of this Educational and Professional Programme may participate in this initiative, contributing to medicine production and improving their practical skills in technological disciplines. Students have access to 5 reading halls with 300 seats; a network of catering facilities operates; a modern sports complex with a swimming pool and tennis court is available for physical education and sports; the University Clinic of IFNMU is functioning; students are provided with accommodation in dormitories. The University has approved and implemented the "Procedure for Accompanying (Providing Assistance to) Persons with Disabilities and Persons with Reduced Mobility at IFNMU", which defines staff actions to ensure convenience and comfort for these categories of students within university buildings and premises.
Information and Educational-Methodological Support	The official website of IFNMU (https://www.ifnmu.edu.ua/) provides core information about its activities, including structure, licenses and accreditation certificates, educational / educational-scientific / publishing activities, samples of educational documents, academic and research structural units and their composition, the list of

	academic disciplines, admission rules, and other relevant information. The University operates 37 computer classrooms, and 100% of educational workplaces are provided with Internet access. Information support is based on the use of cloud technologies via the Microsoft Office 365 system. All academic staff and students of the University are fully (100%) provided with licensed Microsoft OfficeProPlus software, and all IFNMU computers are fully covered by Microsoft licenses. Modern interactive learning technologies are actively implemented in the educational process, including: a blended learning model (e-learning) based on the University cloud infrastructure; an interactive learning комплекс based on the EDX-IFNMU platform; Microsoft Teams software for conducting online classes. Electronic educational materials (virtual programmes) are used both for students' independent work and for multimedia-supported lectures, practical and seminar classes, as well as for distance learning. The University's electronic resources contain educational and methodological materials for all academic disciplines of the curriculum, including those integrated into the distance learning system. The IFNMU library is equipped with national and international professional periodicals relevant or related to the specialty, including electronic and English-language publications. Library collections are updated annually, and the library provides access to databases of English-language scientific periodicals in the relevant field. Educational and methodological support of the educational process at IFNMU includes: • the curriculum and its explanatory note; • working curricula, syllabi, and educational-methodological комплекси for each academic discipline; • practical training programmes and working programmes of practices; • banks of test items; methodological materials for students for all forms of current and final assessment, including final attestation of students.
9 – Academic Mobility	
National Credit Mobility	National credit mobility is implemented in accordance with the Law of Ukraine "On Higher Education". Recognition of learning outcomes obtained at other higher education institutions within Ukraine under academic mobility is carried

	out in accordance with agreements concluded by IFNMU. Individual agreements on academic mobility for studying and conducting research at universities and research institutions of Ukraine are permitted. ECTS credits obtained within academic mobility programmes are recognized in accordance with the Regulations on the Organization of the Educational Process at IFNMU (https://www.ifnmu.edu.ua/home/public-information/founding-documents).
International Credit Mobility	International mobility and recognition of learning outcomes obtained within international mobility programmes (including Erasmus+) are implemented in accordance with the Law of Ukraine "On Higher Education", agreements between IFNMU and foreign higher education institutions, the Regulations on the Organization of the Educational Process at IFNMU, and the Regulations on Recognition of Academic Disciplines (Individual Study Plans) and Determination of Academic Differences at IFNMU (https://www.ifnmu.edu.ua/home/public-information/founding-documents).
Education of International Students	Education of international students is carried out in accordance with the requirements of current legislation. Admission is conducted in accordance with the "Admission Rules" and includes relevant professional entrance examinations (https://www.ifnmu.edu.ua/admission_committe_2025/). Instruction is provided in Ukrainian and English.

2. The educational program components list and its logical sequence

2.1. The educational and professional program components list

Educational discipline code	The educational program components (educational disciplines, practices)	Credits amount	Final assessment form
1	2	3	4
The educational and professional program mandatory components			
General training			
MCG 1	Ukrainian language (professional)[1]	3	Final modular control–FMC
MCG 2	Foreign language	3	FMC
MCG 3	History of Ukraine and Ukrainian culture	3	FMC
MCG 4	Biology with the genetics basics	3	FMC
MCG 5	Latin	3	FMC
MCG 6	Life safety, bioethics, and biosafety basics	3	FMC
MCG 7	Methods and organization of scientific research in pharmacy	3	FMC
MCG 8	Philosophy	3	FMC
MCG 9	Physical education	2	FMC
Total			
Professional training			
MCP 1	Human anatomy and physiology	5	FMC
MCP 2	Biological physics with physical analysis methods	4,5	FMC
MCP 3	Higher mathematics and statistics	3,5	FMC
MCP 4	Introduction to pharmacy	3	FMC
MCP 5	General and inorganic chemistry	6	FMC
MCP 6	Ethics and deontology in pharmacy	3	FMC
MCP 7	Physical and colloidal chemistry	4	FMC
MCP 8	Pathophysiology	5	FMC
MCP 9	Pharmaceutical botany	5	FMC
MCP 10	Microbiology with the immunology basics	5	FMC
MCP 11	Organic chemistry	8	FMC
MCP 12	Analytical chemistry	8	FMC
MCP 13	Computer technologies in pharmacy	4	FMC
MCP 14	Foreign language (professional)	3	FMC
MCP 15	Hygiene in pharmacy and ecology	3	FMC
MCP 16	Occupational health and safety in the industry	3	FMC
MCP 17	Biological chemistry	6	FMC
MCP 18	Pharmacology	8,5	FMC
MCP 19	Pharmacognosy	8,5	FMC
MCP 20	Drug technology	12	FMC
MCP 21	Pharmaceutical chemistry	12	FMC

MCP 22	Pharmaceutical law and legislation	3	FMC	
MCP 23	Extreme medicine	3	FMC	
MCP 24	Immunoprophylaxis and infection control in pharmacy practice	3	FMC	
MCP 25	Computer modeling in pharmacy	3	FMC	
MCP 26	Reserve officers training of the knowledge field «Health care». Specialty «Pharmacy»[2]	3	FMC	
MCP 27	Integrated course in fundamental disciplines	3	exam	
MCP 28	Clinical pharmacy and pharmaceutical care	9	FMC	
MCP 29	Pharmacotherapy with pharmacokinetics	3	FMC	
MCP 30	Laboratory diagnostics	3	FMC	
MCP 31	Medicinal toxicology	3	FMC	
MCP 32	Pharmacy organization and economy	6	FMC	
MCP 33	Pharmacoeconomics	3	FMC	
MCP 34	Pharmaceutical and medical commodity science	4	FMC	
MCP 35	Pharmaceutical management and marketing	6	FMC	
MCP 36	Toxicological chemistry	4	FMC	
MCP 37	Drugs pharmaceutical analysis	3	FMC	
MCP 38	Medical cosmetics technology	3	FMC	
MCP 39	Medicinal plants resource science	3	FMC	
MCP 40	Biopharmacy	3	FMC	
MCP 41	Good pharmaceutical practices	3	FMC	
MCP 42	Social pharmacy	3	FMC	
Total		**197**		
Practice / Practical training				
MPT 1	Pre-medical assistance in the pharmacist's work	3	FMC	
MPT 2	Systematics, geobotany and phytoecology basics	4	FMC	
MPT 3	Pharmacognosy with the phytotherapy basics	4	FMC	
MPT 4	Pharmaceutical manufacturing technology in compliance with good practice requirements	5	FMC	
MPT 5	Manufacturing pharmaceutical practice/Practical training, including:	30	Manufacturing pharmaceutical practice	Practical training
	Pharmaceutical chemistry	5	FMC	exam
	Pharmacognosy	5	FMC	
	Pharmacy organization and economy	5	FMC	
	Pharmaceutical management and marketing	5	FMC	
	Drug technology	5	FMC	
	Clinical pharmacy and pharmaceutical care	5	FMC	
Total: Practice / Practical Training		**46**		
Total Volume of Mandatory Components of the Educational and Professional Programme		**269**		

Catalogue of elective components of the educational and professional programme			
Block 1			
EC 1.1	Modern world history	3	FMC
EC 1.2	Scientific language culture fundamentals		FMC
EC 1.3	Medical local history		FMC
Block 2			
EC 2.1	Academic integrity	3	FMC
EC 2.2	Valeology		FMC
EC 2.3	Molecular biology modern problems		FMC
EC 2.4	Chemical research effective and safe methods		FMC
EC 2.5	Applied genetics		FMC
Block 3			
EC 3.1	System analysis fundamentals	3	FMC
EC 3.2	Computer literacy. European standards		FMC
EC 3.3	Work with information sources		FMC
EC 3.4	Web design in pharmacy		FMC
Block 4			
EC 4.1	English in the health care system	3	FMC
EC 4.2	French in the health care system		FMC
EC 4.3	Foreign language professional communication: English		FMC
EC 4.4	Foreign language professional communication: German		FMC
Block 5			
EC 5.1	Communication psychology	3	FMC
EC 5.2	Basics of consumer behavior in pharmacy		FMC
EC 5.3	Pharmacist professional culture		FMC
EC 5.4	World civilization and culture		FMC
EC 5.5	Medical personnel basics		FMC
EC 5.6	Latin and Greek languages in pharmaceutical terminology		FMC
EC 5.7	Theoretical training of basic general military training[3]		FMC
Block 6			
EC 6.1	Medicinal plants: introduction, biology, and cultivation	3	FMC
EC 6.2	Dosage forms technology theoretical foundations		FMC
EC 6.3	Computational chemistry and molecular modeling principles		FMC
EC 6.4	Theoretical bases of cosmetic products composition development and manufacturing technology		FMC

Block 7			
EC 7.1	Toxicomania and drug addiction: pharmaceutical aspects	3	FMC
EC 7.2	Functional biochemistry		FMC
EC 7.3	Biological systems research modern methods		FMC
EC 7.4	Anti-corruption and integrity		FMC
Block 8			
EC 8.1	Economics basics	3	FMC
EC 8.2	Homeopathic drugs		FMC
EC 8.3	Basic principles of cosmetics rational use		FMC
EC 8.4	Perfumery and cosmetic products		FMC
Block 9			
EC 9.1	International marketing in pharmacy	3	FMC
EC 9.2	Insurance medicine basics		FMC
EC 9.3	Drugs side effects		FMC
EC 9.4	Nutrition and bromatology		FMC
EC 9.5	Perfumery and cosmetic products technology		FMC
EC 9.6	Drugs standardization		FMC
EC 9.7	Medicinal plants and phytotherapy		FMC
EC 9.8	Pharmaceutical biotechnology		FMC
Block 10			
EC 10.1	Preparation of the qualification thesis in Management and economics in pharmacy	3	FMC
EC 10.2	Preparation of the qualification thesis in Drug technology		FMC
EC 10.3	Preparation of the qualification thesis in Pharmacognosy		FMC
EC 10.4	Preparation of the qualification thesis in Pharmaceutical chemistry		FMC
EC 10.5	Preparation of the qualification thesis in Clinical pharmacy and pharmaceutical care		FMC
Total Volume of Elective Components of the Educational and Professional Programme			**30**
Attestation		1	*
Total Volume of the Educational and Professional Programme:			**300**

* Unified State Qualification Examination (USQE), Stage I:
- Integrated test examination “STEP 1”,
- Professionally oriented English language examination

Unified State Qualification Examination (USQE), Stage II:
- Integrated test examination “STEP 2”

Defence of the Qualification (Master’s) Thesis
Objective Structured Practical Examination (OSPE)

1 – International students study MCG 1 “Ukrainian Language”
2 – International students study “Tactical Medicine” within MCP 26 “Reserve officers training in the field of knowledge ‘Healthcare’, Specialty Pharmacy”
3 – Students study EC 5.7 “Theoretical training of basic general military training”

2.2. Structural and Logical Scheme of the Educational and Professional Programme by Years of Study

Educational Components	Years of Study / Credits				
	1	2	3	4	5
Mandatory Components of the Educational and Professional Programme					
General Training					
MCG 1	3				
MCG 2	3				
MCG 3	3				
MCG 4	3				
MCG 5	3				
MCG 6	3				
MCG 7				3	
MCG 8	3				
MCG 9	2				
Professional (Specialized) Training					
MCP 1	5				
MCP 2	4,5				
MCP 3	3,5				
MCP 4	3				
MCP 5	6				
MCP 6	3				
MCP 7	1	4			
MCP 8		4			
MCP 9		5			
MCP 10		5			
MCP 11		8			
MCP 12		8			
MCP 13		4			
MCP 14		3			
MCP 15		3			
MCP 16		2	1		
MCP 17			6		
MCP 18			8,5		
MCP 19			8,5		
MCP 20			6	6	
MCP 21			6	4	2
MCP 22			3		
MCP 23			3		
MCP 24			3		
MCP 25			3		
MCP 26			3		
MCP 27			3		
MCP 28				6	3
MCP 29				3	
MCP 30				3	
MCP 31				3	
MCP 32				6	
MCP 33				3	
MCP 34				4	
MCP 35				3	3
MCP 36				4	
MCP 37					3
MCP 38					3
MCP 39					3
MCP 40					3
MCP 41					3
MCP 42					3
Practice / Practical training					
MPT 1		3			
MPT 2		4			
MPT 3				4	
MPT 4				5	
MPT 5					30
Attestation					1
Elective Components of the Educational and Professional Programme					
EC 1	3				
EC 2	3				
EC 3	3				
EC 4	3				
EC 5		3			
EC 6		3			
EC 7			3		
EC 8			3		
EC 9				3	
EC 10					3

3 – Form of Attestation of Higher Education Applicants

Attestation of graduates (CG) of the second (Master's) level of higher education in the field of knowledge I Healthcare and Social Welfare, specialty I8 Pharmacy, is carried out in the form of the Unified State Qualification Examination (USQE), defence of the qualification (Master's) thesis, and the Objective Structured Practical Examination (OSPE). The USQE consists of two separate testing stages and includes: the integrated test examination "STEP", which assesses compliance of the specialist's theoretical training with the higher education standard; the professionally oriented English language examination, which assesses the student's competence in professional English. The defence of the completed qualification thesis demonstrates the graduate's level of scientific qualification, the ability to conduct independent scientific inquiry, and to solve research and/or innovation-oriented tasks in the field of pharmacy. The OSPE assesses the graduate's readiness to perform professional activities through demonstration of practical components of professional competence: as close as possible to real professional practice conditions. Attestation of graduates studying under the EP is conducted in five disciplines: Management and Economics in Pharmacy, Drug Technology, Pharmacognosy, Pharmaceutical Chemistry, Clinical Pharmacy and Pharmaceutical Care. The qualification thesis is a mandatory component of attestation for both full-time and part-time students. It is completed at the final stage of study within one of the attestation disciplines. The qualification (Master's) thesis demonstrates the ability of the Master's degree applicant to solve research and/or innovation-oriented tasks in the field of pharmacy. It must not contain academic plagiarism, fabrication, or falsification; therefore, it is subject to mandatory plagiarism screening in accordance with the Regulations on Prevention and Detection of Academic Plagiarism at the University (https://www.ifnmu.edu.ua/home/public-information/founding-documents/). The defence of the Master's thesis is conducted openly and publicly. The thesis is published in the DSpace institutional repository.

Documents Awarded upon Successful Completion of the EP

Graduates who have successfully completed the Educational and Professional Programme of the second (Master's) level of higher education in specialty I8 Pharmacy, specialization I8.01 Pharmacy, and have successfully passed final attestation are awarded a diploma indicating "Master of Pharmacy, Pharmacist". The Master of Pharmacy diploma (Level 7 of the National Qualifications Framework), indicating the educational qualification "Master of Pharmacy" and the professional qualification "Pharmacist", provides eligibility for obtaining each of the professional qualifications defined by the Professional Standard "Pharmacist". Graduates who have demonstrated high academic performance, having obtained at least 75% of grades "Excellent" (A) in all educational components and practical training, and grades "Good" (B, C) in the remaining components, as well as having passed the attestation of graduates with grades "Excellent" (A), are awarded a Master of Pharmacy, Pharmacist diploma with honours. An integral part of the Master of Pharmacy, Pharmacist diploma (including the diploma with honours) is the European-style Diploma Supplement (DIPLOMA SUPPLEMENT).

4. Compliance Matrices in accordance with the Standard of Specialty I8 Pharmacy / Specialization I8.01 Pharmacy

4.1. Matrix of Correspondence between Competencies Defined by the Standard and the National Qualifications Framework (NQF) for Specialty I8 Pharmacy / Specialization I8.01 Pharmacy

Classification of Competencies according to the NQF	Knowledge **KN1** Specialized conceptual knowledge, including modern scientific achievements in the field of professional activity or area of knowledge, which serves as a basis for original thinking and conducting research; critical understanding of problems within the field and at the interface of different fields of knowledge	Skills / Abilities **SK1** Specialized skills/abilities for problem-solving required for conducting research and/or implementing innovative activities aimed at developing new knowledge and procedures **SK2** Ability to integrate knowledge and solve complex tasks in broad multidisciplinary contexts **SK3** Ability to solve problems in new or unfamiliar environments under conditions of incomplete or limited information, taking into account aspects of social and ethical	Communication **COM1** Clear and unambiguous communication of one's knowledge, conclusions, and arguments to specialists and non-specialists, including learners	Responsibility and Autonomy **RA1** Management of work or learning processes that are complex, unpredictable, and require new strategic approaches **RA2** Responsibility for contributing to professional knowledge and practice and/or for evaluating the performance of teams and groups **RA3** Ability to continue learning with a high degree of autonomy
General competences (GC)				
GC 1		SK2		
GC 2	KN1	SK1		
GC 3			COM1	
GC 4			COM1	
GC 5	KN1	SK 1, SK 2, SK 3	COM1	RA1, RA2, RA3
GC 6		SK 3	COM1	RA1, RA2
GC 7		SK 3	COM1	RA3
GC 8		SK 3	COM1	RA3
GC 9		SK 1		RA1
Professional specialty competencies (PC)				
PC 1	KN1	SK 1, SK 2		RA1, RA2
PC 2	KN1	SK 1		RA3
PC 3		SK 3		RA1, RA2
PC 4	KN1	SK 1	COM1	RA1, RA2
PC 5	KN1	SK 2	COM1	RA2
PC 6	KN1	SK 1, SK 2, SK 3	COM1	RA1, RA2
PC 7	KN1	SK 1		RA2
PC 8	KN1	SK 1, SK 2, SK 3	COM1	RA1, RA2, RA3
PC 9	KN1	SK 1, SK 2, SK 3		RA1
PC 10	KN1	SK 1, SK 2		RA1, RA2
PC 11	KN1	SK 1, SK 2, SK 3	COM1	RA1, RA2
PC 12	KN1	SK 1, SK 2, SK 3		RA1
PC 13	KN1	SK 1, SK 2, SK 3		RA1, RA2
PC 14	KN1	SK 1, SK 2		RA1, RA2
PC 15	KN1	SK 1, SK 2		RA1, RA2, RA3
PC 16	KN1	SK 1, SK 2, SK 3		RA1, RA2, RA3
PC 17	KN1	SK 1, SK 2, SK 3	COM1	RA1, RA2
PC 18	KN1	SK 1, SK 2, SK 3		RA1, RA2, RA3

4.2. Matrix of Correspondence between Learning Outcomes Defined by the Standard and Competencies for Specialty I8 Pharmacy / Specialization I8.01 Pharmacy

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12	PLO13	PLO14	PLO15	PLO16	PLO17	PLO18	PLO19	PLO20	PLO21	PLO22	PLO23
GC 1	●	●					●														●		
GC 2	●		●		●	●					●				●	●		●	●	●		●	●
GC 3				●		●			●	●	●					●			●	●		●	●
GC 4				●	●	●			●	●	●											●	●
GC 5						●		●															
GC 6						●		●															
GC 7		●	●			●		●	●														
GC 8		●	●			●		●	●														
GC 9																							
GC 10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PC 1	●		●		●	●		●			●			●	●			●	●	●	●	●	●
PC 2							●	●	●	●	●			●		●			●	●	●	●	●
PC 3					●	●												●	●	●	●		●
PC 4				●					●	●	●												
PC 5	●	●	●	●			●		●	●													
PC 6	●	●	●	●			●		●		●												
PC 7	●	●	●									●											
PC 8	●	●	●		●		●						●										
PC 9	●	●	●				●	●						●									
PC 10	●	●	●												●								
PC 11	●	●	●			●									●	●							
PC 12	●	●	●		●	●	●	●									●						
PC 13	●	●	●		●	●	●	●										●					
PC 14	●	●	●				●									●			●			●	●
PC 15	●	●	●			●	●	●												●			●
PC 16	●	●	●		●	●		●													●		
PC 17	●	●	●		●	●	●									●						●	
PC 18	●	●	●				●	●						●									●

5. Matrix of Correspondence between Programme Competencies and Mandatory Components of the Educational and Professional Programme

** \ *	MCG 1	MCG 2	MCG 3	MCG 4	MCG 5	MCG 6	MCG 7	MCG 8	MCG 9	MCP 1	MCP 2	MCP 3	MCP 4	MCP 5	MCP 6	MCP 7	MCP 8	MCP 9	MCP 10	MCP 11	MCP 12	MCP 13	MCP 14	MCP 15	MCP 16	MCP 17	MCP 18	MCP 19	MCP 20
General competences (GC 1 – GC 10)																													
1				*		*	*	*			*	*				*	*		*			*		*		*	*	*	*
2					*		*			*	*	*	*	*	*	*	*	*	*	*	*	*		*		*	*	*	*
3	*													*						*	*								
4		*																					*						
5				*			*				*			*		*		*		*	*			*	*	*		*	*
6		*				*		*	*				*		*	*	*	*	*				*	*	*	*		*	*
7			*			*		*							*														
8			*	*		*	*	*	*	*	*		*		*		*	*	*					*				*	*
9							*							*		*				*	*	*	*						
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Professional specialty competencies (ФК 1 – PC 18)																													
1				*		*	*						*				*	*	*			*		*	*	*	*	*	*
2				*		*	*		*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*
3						*	*	*							*									*					
4	*	*			*	*	*	*					*		*								*				*		
5				*		*											*		*					*			*		
6					*												*		*								*	*	
7						*			*	*							*												
8						*																					*	*	*
9																			*							*			
10											*		*			*												*	*
11													*									*			*				
12																						*							
13																													
14													*																*
15																													*
16																													
17													*															*	*
18											*			*		*			*	*	*					*		*	*

** \ *	MCP 21	MCP 22	MCP 23	MCP 24	MCP 25	MCP 26	MCP 27	MCP 28	MCP 29	MCP 30	MCP 31	MCP 32	MCP 33	MCP 34	MCP 35	MCP 36	MCP 37	MCP 38	MCP 39	MCP 40	MCP 41	MCP 42	MPT 1	MPT 2	MPT 3	MPT 4	MPT 5
General competences (GC 1 – GC 10)																											
1	*		*	*	*		*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*
2	*	*			*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3							*																				
4																											
5	*						*			*		*		*	*	*	*	*	*	*	*			*	*	*	*
6			*	*		*		*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
7		*				*																*					*
8		*				*		*	*		*		*					*	*	*	*	*	*	*	*	*	*
9					*		*																				*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Professional specialty competencies (ФК 1 – PC 18)																											
1			*	*	*	*	*	*	*	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	*
2		*			*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*		*	*	*	*
3		*				*									*							*	*				*
4								*				*			*							*					*
5			*	*		*	*	*															*				*
6			*				*	*	*	*	*	*		*						*			*		*		*
7			*			*		*	*		*												*				*
8								*	*	*	*		*					*		*					*		*
9								*	*	*	*					*											*
10						*						*		*							*				*	*	*
11		*			*	*						*	*	*	*							*					*
12		*			*							*										*					*
13		*										*	*									*					*
14						*						*						*			*					*	*
15																		*		*	*					*	*
16					*										*							*					*
17	*											*					*	*			*				*	*	*
18	*					*	*										*	*		*	*				*	*	*

Note: * – Mandatory educational components: MCG – Mandatory components general (MCG 1 – MCG 9), MCP – Mandatory components professional (MCP 1 – MCP 42), MPT – Mandatory practical training (MPT 1 – MPT 5); ** – Competences.

6. Matrix of Provision of Programme Learning Outcomes by Mandatory Components of the Educational and Professional Programme

* / **	MCG 1	MCG 2	MCG 3	MCG 4	MCG 5	MCG 6	MCG 7	MCG 8	MCG 9	MCP 1	MCP 2	MCP 3	MCP 4	MCP 5	MCP 6	MCP 7	MCP 8	MCP 9	MCP 10	MCP 11	MCP 12	MCP 13	MCP 14	MCP 15	MCP 16	MCP 17	MCP 18	MCP 19	MCP 20	MCP 21	MCP 22	MCP 23	MCP 24	MCP 25	MCP 26	MCP 27	MCP 28	MCP 29	MCP 30	MCP 31	MCP 32	MCP 33	MCP 34	MCP 35	MCP 36	MCP 37	MCP 38	MCP 39	MCP 40	MCP 41	MCP 42	MPT 1	MPT 2	MPT 3	MPT 4	MPT 5
1				*	*	*	*			*	*		*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2			*	*		*	*	*			*	*	*		*		*	*	*			*		*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*
3			*	*	*	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*		*	*		*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
4	*	*																					*																																	
5						*	*				*		*				*		*						*			*	*	*					*		*				*	*	*	*		*	*	*	*	*				*	*	*
6			*	*		*	*	*	*		*	*	*		*		*		*			*		*	*			*	*			*	*	*	*	*	*		*		*	*	*	*			*	*	*	*	*	*		*	*	*
7						*	*					*										*					*	*	*		*			*	*							*		*			*	*	*	*				*	*	*
8			*	*		*	*	*			*	*			*			*				*	*	*	*				*		*			*							*	*		*	*		*		*	*	*		*	*	*	*
9	*		*	*	*	*	*	*					*		*			*				*	*	*			*		*		*			*	*		*	*		*	*	*	*	*			*			*	*		*			*
10				*		*			*				*		*		*		*					*			*						*			*	*	*	*												*	*				*
11											*					*	*		*							*	*	*	*							*	*	*	*	*		*					*		*	*		*		*	*	*
12																	*		*													*			*		*	*														*				*
13																	*		*								*										*	*	*	*		*							*					*	*	*
14											*						*		*							*													*						*											
15											*		*			*								*		*		*	*						*						*		*				*	*		*				*	*	*
16																						*									*			*	*						*		*	*							*					*
17												*																			*										*										*					*
18																															*										*	*									*					*
19													*																*																		*			*					*	*
20																													*																		*		*	*					*	*
21																																		*							*			*							*					*
22													*															*	*	*											*					*	*		*	*				*	*	*
23											*			*		*				*	*					*		*	*	*						*					*					*	*		*	*				*	*	*

Note: * **–** Mandatory educational components: MCG – Mandatory components general (MCG 1 – MCG 9), MCP – Mandatory components professional (MCP 1 – MCP 42), MPT – Mandatory practical training (MPT 1 – MPT 5); ** – Program learning outcomes (PLO 1 – PLO 23)

7 – Requirements for the Internal Quality Assurance System in Higher Education

In accordance with the Law of Ukraine "On Higher Education", the University has developed and implemented an internal quality assurance system, which is based on the principles set out in the "Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)" of the European Association for Quality Assurance in Higher Education, as well as the national standard of Ukraine "Quality Management Systems" DSTU ISO 9001:2015.

The University has undergone scheduled external surveillance audits and received confirmation that the Quality Management System (QMS) of IFNMU complies with the valid internationally recognized attestation.

Main approaches and mechanisms for ensuring the quality of education at IFNMU:

- development of educational programmes exclusively on a competency-based approach, with a transition to the pan-European understanding of the content of education in the field of healthcare;
- monitoring trends in the global educational and scientific space in order to respond promptly to global challenges, changes in conditions in the educational services market, and the introduction of new technologies;
- alignment of educational programmes with the needs of educational institutions and healthcare institutions through their involvement in the educational process;
- development and implementation of intensive student-centered learning technologies (individualization of learning);
- implementation of distance learning technologies in the educational process;
- promotion of students' acquisition of communicative competence in a foreign language at the required level;
- expansion of the University's participation in international academic mobility programmes for students and academic staff;
- integration with educational institutions of various levels and healthcare institutions, including pharmaceutical ones;
- involvement of employers and leading practitioners in the development of educational programme content, participation in the educational process, and attestation of graduates;
- provision of appropriate conditions for students' practical training;
- marketing of educational services and development of proposals for the introduction of new educational programmes; systematic analysis of graduates' employment and career development;
- improvement of measures aimed at increasing the objectivity of student assessment;
- control of feedback mechanisms between participants in the educational process as a key systemic component of quality assurance in higher education in the field I Healthcare and Social Welfare;

- creation of organizational and technical conditions and tools for graduates of previous years to evaluate the quality of the educational process;
- participation in activities aimed at building a positive institutional reputation;
- continuous improvement of the system for monitoring and ensuring the quality of training of higher education applicants;
- implementation of a system for evaluating the performance effectiveness of academic staff in delivering educational programmes;
- approval and implementation of professional development programmes for academic staff both within and outside the University.

Monitoring and Periodic Review of Educational Programmes

At the University, the review of educational programmes is carried out based on monitoring of their effectiveness.

The criteria for reviewing educational programmes are formed both through feedback from external and internal stakeholders and through forecasting the development of the field (in this case, pharmacy) and societal needs.

Educational programmes are reviewed and re-approved at least once a year, typically prior to the beginning of a new academic year.

Annual Assessment of Higher Education Applicants

Annual assessment of higher education applicants is conducted in accordance with the Regulations on the Organization of the Educational Process at IFNMU and is published on the University website: https://www.ifnmu.edu.ua/home/public-information/founding-documents/

Professional Development of Academic and Teaching Staff

Professional development and internships of academic and teaching staff are carried out in accordance with the regulatory legal acts of Ukraine and the Regulations on Professional Development of Academic and Teaching Staff of IFNMU: https://www.ifnmu.edu.ua/educational-work/

The results of professional development are taken into account in the rating-based evaluation of academic staff performance.

The rating of teaching staff is presented at meetings of the Academic Council and Rectorate and communicated to departments.

Public Availability of Information on Educational Programmes, Degrees, and Qualifications

Information subject to mandatory disclosure in accordance with the Laws of Ukraine “On Higher Education” and “On Access to Public Information” is published on the official website of the University: https://www.ifnmu.edu.ua/.

Prevention and Detection of Academic Plagiarism

Prevention of plagiarism in the academic environment of IFNMU is regulated by the “Regulations on Detection and Prevention of Academic Plagiarism at the University”: https://www.ifnmu.edu.ua/home/public-information/founding-documents/

8 – List of References

1. Law of Ukraine "On Higher Education" dated July 1, 2014 No. 1556-VII.
2. Law of Ukraine "On Education" dated September 5, 2017 No. 2145-VIII.
3. Law of Ukraine "On Amendments to Certain Laws of Ukraine on the Development of Individual Educational Trajectories and Improvement of the Educational Process" dated April 23, 2024 No. 3642-IX.
4. Law of Ukraine "Fundamentals of the Legislation of Ukraine on Healthcare" dated November 19, 1992 No. 2801-XII.
5. Law of Ukraine "On Medicinal Products" dated April 4, 1996 No. 123/96-VR.
6. Resolution of the Cabinet of Ministers of Ukraine dated November 23, 2011 No. 1341 "On Approval of the National Qualifications Framework".
7. Resolution of the Cabinet of Ministers of Ukraine dated April 29, 2015 No. 266 "On Approval of the List of Fields of Knowledge and Specialties for Higher Education Applicants Training".
8. Resolution of the Cabinet of Ministers of Ukraine dated December 30, 2015 No. 1187 "On Approval of the Licensing Conditions for Conducting Educational Activities".
9. Resolution of the Cabinet of Ministers of Ukraine dated March 28, 2018 No. 334 "On Approval of the Procedure for Conducting the Unified State Qualification Examination for Applicants for the Master's Degree in the Field of Knowledge 'Healthcare'".
10. Resolution of the Cabinet of Ministers of Ukraine dated May 10, 2018 No. 354 "On Approval of the List of Specialties Subject to the Unified State Qualification Examination for Obtaining a Master's Degree".
11. Resolution of the Cabinet of Ministers of Ukraine dated May 19, 2021 No. 497 "On Attestation of Applicants for Professional Pre-Higher Education and Higher Education Degrees at the First (Bachelor's) and Second (Master's) Levels in the Form of the Unified State Qualification Examination".
12. Standard of Higher Education of the Second (Master's) Level in the Field of Knowledge 22 Healthcare, Specialty 226 Pharmacy, Industrial Pharmacy, Specializations 226.01 Pharmacy; 226.02 Industrial Pharmacy, approved and enacted by Order of the Ministry of Education and Science of Ukraine dated November 4, 2022 No. 981. Available at: https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2022/11/11/226-Farmatsiya.promyslova.farmatsiya.mahistr-981-04.11.2022.pdf
13. National Classifier of Ukraine: "Classification of Occupations" DK 003:2010. Available at: https://zakon.rada.gov.ua/rada/show/va327609-10
14. Order of the Ministry of Economic Development and Trade of Ukraine dated November 18, 2014 No. 1361 "On Approval of Amendments to the National Classifier of Ukraine DK 003:2010" (Amendment No. 2).

15. Order of the Ministry of Education and Science of Ukraine dated July 11, 2019 No. 977 “On Approval of the Regulations on Accreditation of Educational Programmes for Higher Education Applicants Training”.
16. Order of the Ministry of Health of Ukraine dated August 14, 1998 No. 251 “On Approval of the Regulations on the System of Licensing Integrated Examinations for Specialists with Higher Education in the Fields of ‘Medicine’ and ‘Pharmacy’”.
17. Order of the Ministry of Health of Ukraine dated April 4, 2022 No. 621 “On Approval of the List of Specializations for Training Higher Education Applicants for the Master’s Degree in Specialty 226 ‘Pharmacy, Industrial Pharmacy’”.
18. Order of the Public Association “Union of Employers’ Organizations of the Medical and Microbiological Industry of Ukraine” dated March 23, 2023 No. 02-23 “On Approval of the Professional Standard ‘Pharmacist”. Available at: https://register.nqa.gov.ua/uploads/0/492-do_nakazu_02_23_profstandart_farmacevt.pdf
19. Concept “Seven-Star Pharmacist”, “Good Pharmacy Education Practice”, 2000.
20. World Federation for Medical Education (WFME) Global Standards Trilogy for Quality Improvement: – Basic Medical Education; – Postgraduate Medical Education; – Continuous Professional Development; and Standards for PhD Education in Biomedicine and Health Sciences in Europe.
21. FIP Education Initiatives. Pharmacy Education Taskforce. A Global Competency Framework, Version 1, 2012.
22. State Pharmacopoeia of Ukraine: in 3 volumes / State Enterprise “Ukrainian Scientific Pharmacopoeial Center for Quality of Medicines”. 2nd edition. Kharkiv, 2015.
23. Recommendations of the National Agency for Higher Education Quality Assurance on the Implementation of Internal Quality Assurance Systems (Decision of NAQA dated June 26, 2019, Protocol No. 6). Available at: https://naqa.gov.ua/2019/07/
24. Recommendations for Higher Education Institutions on the Development and Implementation of Institutional Systems for Academic Integrity (Decision of NAQA dated October 29, 2019, Protocol No. 11). Available at: https://naqa.gov.ua/wp-content/uploads/2019/10/