

MINISTRY OF EDUCATION AND SCIENCE

KYIV NATIONAL UNIVERSITY OF TECHNOLOGIES AND DESIGN

APPROVED BY THE SCIENTIFIC COUNCIL OF KNUTD
Chairman of the Scientific Council of KNUTD

 Ivan Gryshchenko

Protocol dated June 22, 2022 No. 8

EDUCATIONAL AND PROFESSIONAL PROGRAM
Industrial Pharmacy

Level of higher education First (bachelor's)

Degree of higher education Bachelor

Field of knowledge 22 Health

Specialty 226 Pharmacy, industrial pharmacy

Qualification Bachelor of Pharmacy, industrial Pharmacy

Kyiv 2022

LETTER OF AGREEMENT

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Vice-Rector for Scientific and Pedagogical Activities (Educational Activities)

16.05.22  Oksana MORGULETS

Director of the Educational and Methodical Center for Management of Training

 Olena HRYHOREVSKA

Approved by the Academic Council of the Faculty of Chemical and Biopharmaceutical Technologies

« 16 » 05 2022, protocol No. 12

Discussed and recommended at the meeting of the Department of Industrial Pharmacy

" 15 " 05 2022, protocol No. 11

Head of the Department of Industrial Pharmacy

15.05.22  Vladyslav STRASHNYI

Guarantor of the educational program

15.05.22  Olena SALIY

Entered into force by order of KNUITD of June 29, 2022 No. 135

DEVELOPED: Kyiv National University of Technology and Design

DEVELOPERS:

Guarantor of the educational program **Olena Oleksandrivna Saliy**, Candidate of Pharmaceutical Sciences, Associate Professor, Associate Professor of the Department of Industrial Pharmacy of the Kyiv National University of Technology and Design.

Members of the working group:

Hanna Viktorivna Tarasenko, Ph.D., Associate Professor, Associate Professor of the Department of Industrial Pharmacy of the Kyiv National University of Technology and Design;

Hanna Ihorivna Kharitonenko, PhD, Associate Professor of the Department of Industrial Pharmacy of the Kyiv National University of Technology and Design.

REVIEWS OF EXTERNAL STAKEHOLDERS:

- 1) [Gureeva S.M., head of the technological development department of the Department of Research and Development JSC "Farmak";](#)
- 2) [Rayenko G. F., deputy director for scientific work of the L. M. Lytvynenko Institute of Physical-Organic Chemistry and Carbon Chemistry of the National Academy of Sciences of Ukraine;](#)
- 3) [Veselovsky M.S., director of the Institute of Physiology named after O.O. Bogomolets National Academy of Sciences of Ukraine;](#)
- 4) [Kachan R.V., head of production of "Interdez" LLC;](#)
- 5) [Vakhitova L.M., production director of Kovlar Group LLC.](#)

1. Profile of the educational and professional program in specialty 226 Pharmacy, industrial pharmacy

1 – General information	
Full name of the institution of higher education and structural unit	Kyiv National University of Technologies and Design, Department of Industrial Pharmacy.
Higher education degree and qualification in the original language	Level of higher education – First (bachelor's). Higher education degree (Foreign Degree) – Bachelor. Field of knowledge – 22 Health. Specialty code – 226 Pharmacy, Industrial Pharmacy.
The official name of the educational program	Industrial Pharmacy.
Type of diploma and scope of educational program	Bachelor's degree, single, 240 ECTS credits.
Cycle / level	The National Qualifications Framework of Ukraine – sixth level.
Availability of accreditation	Certificate of accreditation of the specialty, series УД No 11005612, 03/09/2018.
Prerequisites (Duration of study and degree certificate)	Complete general secondary education, professional higher education or a bachelor's degree (junior specialist). In accordance with the Standard of Higher Education in the specialty based on the degree of junior bachelor (EQL junior specialist), the University recognizes and recalculates ECTS credits received under the previous educational program for junior bachelor (junior specialist).
Language (s) of training	Ukrainian
Term of the educational program	Until July 1, 2028
Internet address of the permanent post of the description of the educational program	http://knutd.edu.ua/ekts/
2 – The purpose of the educational program (Training Objectives)	
<p>Training of specialists with in-depth knowledge, as well as general and professional competences for carrying out professional activities in a relevant position in the field of industrial production of medicinal products, including pharmaceutical development of medicines (drugs), technologies of medicinal products and active pharmaceutical ingredients, conducting quality control of raw materials, semi-finished products and finished pharmaceuticals in their production process, as well as implementation of international standards and other good practices in institutions, establishments and enterprises of the pharmaceutical sector.</p> <p><i>The main objectives of the program are:</i> formation of the ability to apply the acquired knowledge, abilities and skills in fundamental and applied sciences to solve typical tasks of professional activity in the relevant position in the field of industrial production (manufacturing) of pharmaceuticals</p>	
3 – Characteristics of the educational program	
Subject area	The program focuses on the fundamental and applied scientific foundations of industrial production (manufacture) of drugs and active pharmaceutical ingredients, which form knowledge and skills on promising areas and tasks of the pharmaceutical sector of health care. Compulsory educational components – 75%, of which: disciplines of general training – 27.5%, vocational training – 27.5%, practical training – 10%, learning a foreign language – 10%. Disciplines of free choice of students – 25% are selected from the university catalog in accordance with the approved procedure at the University.

Orientation of the program	Educational and professional for bachelor's degree training.	
Them ainfocus of the program and specialization	Emphasis is placed on the formation and development of professional competencies in the pharmaceutical industry; study of theoretical and methodological provisions, organizational and practical tools, taking into account the specifics of pharmaceutical companies, including the development of new and improvement of existing technologies, production technology (manufacturing), quality control of medicines.	
Features of the educational program	The program creates conditions for employment of graduates in related fields: pharmaceutical industry, chemical biotechnology engineering, perfume and cosmetics industry; gives the opportunity to carry out scientific and practical activities in the pharmaceutical industry at all stages of the circulation of medicines, taking into account the development of science and the requirements of the labor market. Performed in an active research environment, gives the opportunity to continue studying abroad in related fields.	
4 – Suitability of graduates for employment and further study		
Suitability for employment	The graduate is suitable for employment in institutions, establishments and enterprises of the pharmaceutical, chemical, perfume-cosmetic and biotechnological industries in the positions of laboratory technician, technician-technologist, technologist and similar positions according to the qualification requirements.	
Further education	Opportunity to study according to the educational-scientific and / or educational-professional program of the second (master's) level of higher education.	
5 – Teaching and assessment		
Teaching and learning	Student-centered and problem-oriented learning, learning through internships and self-study are used. The system of teaching methods is based on the principles of purposefulness, binary - active direct participation of research and teaching staff and students of higher education. Forms of organization of the educational process: lecture, seminar, practical, laboratory classes, practical training, independent work, consultation, development of professional projects (works).	
Assessment	Exams, tests, tests, professional projects (works), presentations, reports.	
6 – Program competencies		
Integral competence (IC)	Ability to solve complex specialized problems in the pharmaceutical field of professional activity.	
General competencies (GC)	GC 1	Ability to act socially responsible and civic conscious.
	GC 2	Ability to apply knowledge in practical situations, make informed decisions..
	GC 3	The desire to preserve the environment.
	GC 4	Ability to think abstractly, analyze and synthesize, learn and be modernly educated.
	GC 5	Ability to show initiative and entrepreneurship.
	GC 6	Knowledge and understanding of the subject area and understanding of professional activity.
	GC 7	Ability to adapt and act in a new situation.
	GC 8	The ability to communicate in the state language both orally and in writing, the ability to communicate in a foreign language (mainly English) at a level that ensures effective professional activity.

	GC 9	Ability to use information and communication technologies.
	GC 10	The ability to choose a communication strategy, the ability to work in a team and with experts from other fields of knowledge/types of economic activity.
	GC 11	The ability to evaluate and ensure the quality of the work performed.
	GC 12	The 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, the rights and freedoms of a person and a citizen in Ukraine.
Professional competencies (PC)	PC 1	The ability to determine promising directions and tasks of the pharmaceutical sector of the health care and social priorities in providing the population with medicines for the implementation of affordable and effective pharmacotherapy and prevention of public diseases.
	PC 2	The ability to identify the needs of the healthcare in order to develop and produce vital, affordable, high-quality, effective and safe medicines.
	PC 3	The ability to provide regulatory requirements in the field of health care for state regulation of the circulation of medicinal products throughout all stages of the life cycle.
	PC 4	The ability to develop and apply organizational measures implemented at a pharmaceutical enterprise in order to guarantee compliance of the quality of medicinal products with their purpose.
	PC 5	Ability to manage integrated quality systems in a pharmaceutical enterprise (QA, GMP, ISO, etc.).
	PC 6	Ability to plan and organize stages of pharmaceutical drug development and technology transfer approaches.
	PC 7	The ability to organize the production of medicinal products at the enterprise, including the choice of dosage form, justification of technology and choice of equipment, in accordance with the rules of Good Practices.
	PC 8	The ability to manage knowledge about pharmaceutical products and processes from the development of drugs to their medical use.
	PC 9	Ability to perform regulatory measures regarding licensing, inspection, registration, certification and pharmacovigilance of medicinal products and prevention of circulation of falsified products.
	PC 10	Ability to develop and manage the documentation of a pharmaceutical enterprise in accordance with the requirements of good documentation practices
	PC 11	Ability to manage changes in the production of medicinal products based on a systematic approach for continuous improvement of product quality and process efficiency.
	PC 12	The ability to use the regulatory and legal framework of Ukraine, international and European standards, requirements of good practices in pharmacy in professional activities.
	PC 13	Ability to apply knowledge and skills to develop the composition of medicinal products based on relevant active

		pharmaceutical ingredients, dosage form, production technology, process validation, stability tests.
	PC 14	The ability to apply knowledge and skills in the implementation of the production of active pharmaceutical ingredients and finished medicines at pharmaceutical enterprises, including the choice of technological process and equipment, taking into account the requirements of good manufacturing practice and life safety.
	PC 15	The ability to organize and carry out quality control of medicinal products in accordance with the requirements of the current State Pharmacopoeia of Ukraine and good practices in pharmacy, to determine sampling methods for the control of medicinal products and to carry out their standardization in accordance with current requirements, to prevent the distribution of falsified medicinal products.
	PC 16	Ability to develop methods of quality control of medicinal products, including active pharmaceutical ingredients, medicinal plant raw materials and excipients using physical, chemical, physico-chemical, biological, microbiological, pharmaco-technological and pharmaco-organoleptic control methods.

7 – Program learning outcomes

Knowledge and understanding:

PLO 1	Know the theoretical foundations and be able to apply the methods of chemical, physico-chemical, biological and pharmaceutical analyses, know the fundamental sections of mathematics, physics and be able to apply mathematical methods for the development of medicinal products and technologies for their industrial production (manufacturing) in accordance with the basic principles and requirements of good manufacturing practices to the pharmaceutical quality system at the enterprise.
PLO 2	Know the norms of sanitary and hygienic regime and requirements of safety and environmental protection during professional activities.

Application of knowledge and understanding (skills):

PLO 3	Demonstrate the ability to business communications in the professional sphere, knowledge of the basics of business communication, teamwork skills.
PLO 4	Demonstrate the ability to independently search, analyze and synthesize information from various sources and use these results to solve typical and complex specialized tasks of professional activity.
PLO 5	Perform professional activities using creative methods and approaches.
PLO 6	Conduct professional activities in social interaction based on humanistic and ethical principles; to identify future professional activity as socially significant for human health.
PLO 7	Carry out professional communication in the state language, use oral communication skills in a foreign language, analyze specialized texts and translate foreign language information sources.
PLO 8	Apply knowledge of general and professional disciplines in professional activities.
PLO 9	To be able to draw up prescriptions, recipes and material balance according to the stages of the technological process of production (manufacturing) of the medicinal product, the balance of the time of execution of individual stages (operations) and production as a whole, heat and electricity consumption during the implementation of professional activities.
PLO 10	Compile and describe the chemical, technological and equipment production schemes with the application of material communications and positions of control and management of the technological parameters of the production of drugs.

PLO 11	Choose a rational technology, develop and issue technological documentation for the production (manufacturing) of medicinal products, including the choice of dosage form, justification of technology and choice of equipment in accordance with the rules of good pharmaceutical practices.
PLO 12	Demonstrate the ability to perform calculations of production capacities, loading of technological equipment, based on the data of calculations of material and energy flows of production (manufacturing), as well as typical calculation methods, scientific and technical and reference sources, computer technologies..
PLO 13	Be able to determine the parameters of the control of the stages (operations) of the technological process, choose the storage conditions of raw materials, intermediate products, materials and finished products, control the preparation of production premises, equipment, personnel and the air of the premises during the implementation of professional activities.
PLO 14	Perform pharmaco-technological tests of control of raw materials and finished products; draw up protocols for technological process control, quality control, validation; carry out validation of the technological process and analytical methods; prepare reviews of the quality of medicinal products; carry out a risk assessment in the production of medicinal products; work with complaints and recall low-quality products.
PLO 15	Develop technological, analytical and registration documentation; carry out quality control of finished medicinal products using analytical methods.
PLO 16	Determine the influence of environmental factors: moisture, temperature, light, etc. on the stability and storage conditions of medicines and medical devices at different stages of their circulation.
PLO 17	Prepare protocols, dossiers, drawings, compile standard operating procedures, specifications, information, tables using the necessary equipment, computer equipment and technology.
PLO 18	Apply the principles and rules of good pharmaceutical practices (Good Manufacturing Practices (GMP), Good Laboratory Practices (GLP), Good Clinical Practices (GCP), Good Distribution Practices (GDP), Good Pharmaceutical Practices (GPP), Good Regulatory Practices (GRP)) at the appropriate stages of the life cycle of medicinal products in order to ensure their quality.
PLO 19	Identify and assess factors that affect professional activities in accordance with the requirements of sanitation, labor protection, safety and fire safety.
Formation of views:	
PLO 20	Argue information for decision-making, bear responsibility for them in standard and non-standard professional situations.
PLO 21	To position one's professional activity and personal qualities on the pharmaceutical labor market; formulate the goals of one's own activity taking into account public and industrial interests.
PLO 22	Demonstrate the ability to take responsibility for the development of professional knowledge and demonstrate proficiency in both state and foreign languages.
PLO 23	Argue and evaluate the factors that affect the technology of manufacturing drugs, demonstrate skills to choose excipients for the production of dosage forms, taking into account their impact on production technology, as well as the speed and completeness of the release of biologically active substances from the dosage form.
PLO 24	Perform professional functions taking into account the safety of life, social protection of the population.
PLO 25	Demonstrate independence and responsibility in work, professional respect for ethical principles, show respect for individual and cultural diversity.
8 – Resource support for program implementation	
Staffing	All research and teaching staff that provide an educational program by qualification, correspond to the profile and direction of the educational components taught; have the necessary experience of pedagogical work and experience of practical work. In the process of organizing training,

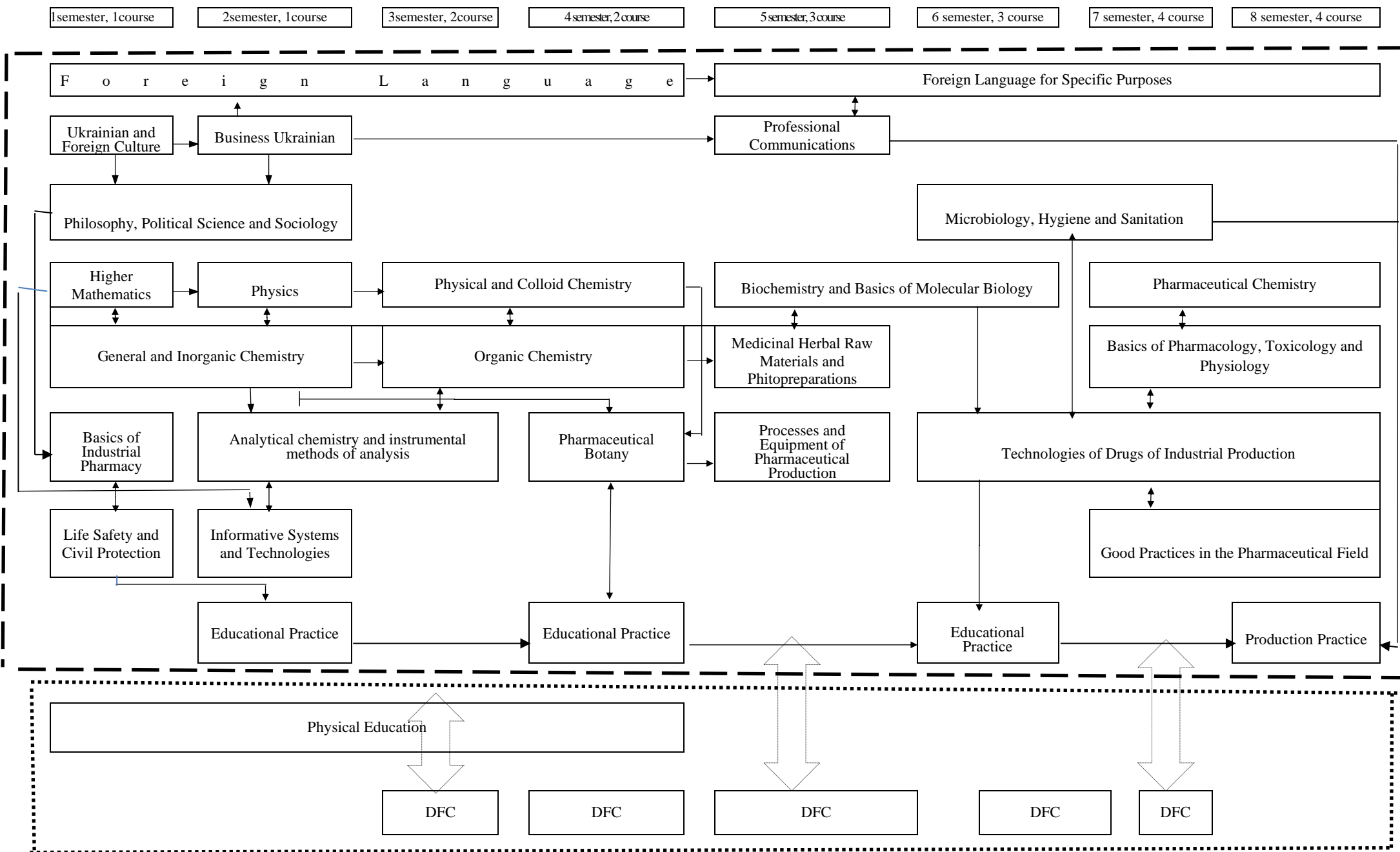
	professionals with experience in research / management / innovation / creative work and / or work in the specialty are involved.
Material and technical support	Material and technical support allows you to fully ensure the educational process throughout the entire cycle of training according to the educational program. The condition of the premises is certified by sanitary and technical passports that comply with current regulations.
Informational and educational and methodical support	The program is fully equipped with an educational and methodological complex of all components of the educational program, the availability of which is presented in the modular environment of the educational process of the University.
9 – Academic mobility	
National credit mobility	Provides for the possibility of academic mobility in some components of the educational program, providing the acquisition of general and / or professional competencies.
International credit mobility	The program develops prospects for participation and internships in research projects and academic mobility programs abroad.
Training of foreign applicants for higher education	Training of foreign applicants for higher education is carried out according to accredited educational programs.

2. The list of components of the educational-professional program and their logical sequence

2.1 List of components of the educational-professional program of the first (bachelor) level of higher education

Code	Components of the educational program (academic disciplines, term papers (projects), practices, qualification work)	Number of credits	The form of the final control
1	2	3	4
Obligatory components of the educational program			
Cycle of general preparation			
EC 1	Ukrainian and Foreign Culture	3	Test
EC 2	Foreign Language (English, German, French, Latin)	12	Examination
EC 3	Business Ukrainian language	3	Test
EC 4	Philosophy, Political Science and Sociology	6	Examination
EC 5	Foreign Language for Specific Purposes	12	Examination
EC 6	Life Safety and Civil Protection	3	Examination
EC 7	Higher Mathematics	6	Examination
EC 8	Physics	6	Examination
EC 9	General and Inorganic Chemistry	9	Examination
EC 10	Analytical chemistry and instrumental methods of analysis	9	Examination
EC 11	Organic Chemistry	9	Examination
EC 12	Physical and Colloid Chemistry	6	Examination
EC 13	Informative Systems and Technologies	3	Test
EC 14	Physical Education	3	Test
All from a cycle		90	
Cycle of professional preparation			
EC 15	Basics of Industrial Pharmacy	3	Test
EC 16	Pharmaceutical Botany	3	Test
EC 17	Medicinal Herbal Raw Materials and Phytopreparations	6	Examination
EC 18	Biochemistry and Basics of Molecular Biology	6	Examination
EC 19	Microbiology, Hygiene and Sanitation	6	Examination
EC 20	Pharmaceutical Chemistry	9	Examination
EC 21	Processes and Equipment of Pharmaceutical Production	3	Examination
EC 22	Technologies of Drugs of Industrial Production	12	Examination
EC 23	Good Practices in the Pharmaceutical Field	9	Examination
EC 24	Basics of Pharmacology, Toxicology and Physiology	6	Examination
EC 25	Professional Communications	3	Test
EC 26	Educational Practice	18	Test
EC 27	Production Practice	6	Test
Total from the cycle		90	
The total amount of required components		180	
Elective Courses			
DFC	Disciplines of free choice of the student	60	Test
The total amount of selective components		60	
TOTAL VOLUME OF THE EDUCATIONAL PROGRAM		240	

2.2 Structural and logical scheme of bachelor's training according to the educational and professional program Industrial Pharmacy, specialty 226 Pharmacy, industrial pharmacy



3. Form of certification of applicants for higher education

Forms of attestation of applicants of higher education	Attestation of a graduate of an educational program is carried out in the form of an attestation exam.
Document of higher education	Diploma of the state standard on awarding a bachelor's degree with a qualification: bachelor of pharmacy, industrial pharmacy.

4. Matrix of correspondence of general competencies to the components of the educational-professional program

	GK1	GK2	GK3	GK4	GK5	GK6	GK7	GK8	GK9	GK10	GK11	GK12	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13	PC14	PC15	PC16		
EC 1	*					*				*		*																		
EC 2								*		*													*						*	
EC 3								*	*	*													*						*	
EC 4	*					*						*																		
EC 5								*		*													*						*	
EC 6		*	*				*			*								*				*		*		*				
EC 7				*		*			*		*															*				
EC 8				*		*			*																					
EC 9				*		*																					*	*		
EC 10				*		*			*											*					*		*	*		
EC 11				*		*														*				*		*	*	*		
EC 12				*		*																		*		*	*	*		
EC 13							*		*		*						*			*		*	*	*				*		
EC 14	*						*																							
EC 15	*				*	*							*					*						*		*				
EC 16			*																	*										
EC 17	*				*	*							*									*		*		*				
EC 18				*		*							*	*						*	*				*				*	
EC 19			*									*				*	*	*	*	*	*	*					*	*	*	
EC 20				*		*								*					*	*						*	*	*	*	
EC 21		*	*								*					*	*	*	*				*		*		*			
EC 22	*	*	*		*	*	*		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
EC 23	*		*		*				*		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
EC 24	*			*			*							*	*					*					*		*	*	*	
EC 25		*				*			*	*																				
EC 26					*		*						*											*						
EC 27		*			*	*	*					*						*					*			*		*	*	

5. Матриця забезпечення програмних результатів навчання відповідними компонентами освітньої програми

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12	PLO 13	PLO 14	PLO 15	PLO 16	PLO 17	PLO 18	PLO 19	PLO 20	PLO 21	PLO 22	PLO 23	PLO 24	PLO 25
EC 1			*		*	*															*	*			*
EC 2			*	*			*				*						*			*		*	*		*
EC 3			*	*			*				*						*			*		*	*		*
EC 4				*	*															*	*	*			*
EC 5			*	*			*				*						*			*		*	*		*
EC 6		*								*			*			*			*	*				*	
EC 7	*							*				*	*	*	*	*	*								
EC 8	*							*		*			*			*	*								
EC 9	*							*					*					*							
EC 10	*							*					*	*	*		*	*							
EC 11	*							*						*	*			*							
EC 12	*							*						*				*							
EC 13	*		*	*	*			*				*		*	*	*									
EC 14						*																		*	
EC 15		*				*		*													*		*		
EC 16								*										*							*
EC 17						*		*	*		*						*	*	*				*		*
EC 18	*							*	*									*					*		
EC 19		*								*			*		*	*		*	*					*	
EC 20	*							*					*	*	*			*							
EC 21		*							*	*	*	*	*		*		*		*						
EC 22		*				*		*	*	*	*	*	*	*	*	*	*	*	*		*		*		*
EC 23								*	*				*	*	*	*		*							*
EC 24	*							*	*							*		*					*	*	
EC 25			*		*		*												*	*					
EC 26	*							*			*	*		*			*			*		*			*
EC 27		*				*		*			*		*	*	*		*	*			*	*		*	*

ЗАТВЕРДЖУЮ

Голова Вченої ради КНУТД
Іван ГРИЩЕНКО
" 29 " 2014 року



Міністерство освіти і науки України
Київський національний університет технологій та дизайну

НАВЧАЛЬНИЙ ПЛАН

Підготовки першого (бакалаврського) рівня з галузі знань 22 Охорона здоров'я **Кваліфікація** бакалавр з промислової фармації
(назва освітнього рівня) (шифр і назва галузі знань) (назва)

спеціальність 226 Фармація, промислова фармація **Строк навчання** Зроки 10місяців
(шифр і назва спеціальності) (роки і місяці)

освітня програма Промислова фармація **на основі** повної загальної середньої освіти
(назва спеціалізації) (освітній рівень)

Форма здобуття вищої освіти денна
(денна, вечірня, заочна, дистанційна)

I. ГРАФІК ОСВІТНЬОГО ПРОЦЕСУ

Курс	Вересень				Жовтень				Листопад				Грудень				Січень				Лютий				Березень				Квітень				Травень				Червень				Липень				Серпень							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
1	s	s	s	s	s	C	C	C	K	K	K	K	K	H	H	H	H	s	s	C	C	K	K	K	K	K	K	K	K
2	s	s	s	s	s	C	C	C	K	K	K	K	K	H	H	H	H	s	s	C	C	K	K	K	K	K	K	K	K
3	s	s	s	s	s	C	C	C	K	K	K	K	K	H	H	H	H	s	s	C	C	K	K	K	K	K	K	K	K
4	s	s	s	s	s	C	C	C	K	K	K	K	K	B	B	B	B	C	C	A	A								

ПОЗНАЧЕННЯ: • – теоретичне навчання; s - індивідуальні заняття та консультації; С- екзаменаційна сесія (в т.ч. додаткова для ліквідації академзаборгованостей); Н- навчальна практика; В- виробнича практика; К – канікули; А- Атестація

II. ЗВЕДЕНІ ДАНІ ПРО БЮДЖЕТ, тижні

Курс	Теоретичне навчання, індивідуальні заняття та консультації	Екзаменаційна сесія	Практика	Атестація	Виконання дипломної роботи (проєкту)	Канікули	Разом
1	30	5	4			13	52
2	30	5	4			13	52
3	30	5	4			13	52
4	28	5	4	2		4	43
Разом	118	20	16	2	0	43	199

III. ПРАКТИКА

Назва практики	Семестр	Тижні
Навчальна	2,4,6	12
Виробнича	8	4

IV. АТЕСТАЦІЯ

Форма атестації (атестаційний екзамен, дипломна робота (проєкт))	Семестр
Атестаційний екзамен (відповідно до стандарту вищої освіти за спеціальністю)	8

Шифр за ОПП	НАЗВА ОСВІТНЬОГО КОМПОНЕНТА	Розподіл за семестрами				Кількість кредитів ЄКТС	Кількість годин					Розподіл годин на тиждень за курсами і семестрами								
		Екзамени	Заліки	Курсові			Загальний обсяг	Аудиторних			Самостійна робота	I курс	II курс		III курс		IV курс			
				проекти	роботи			Всього	у тому числі:			Семестри								
		лекції	лабора-торні	прак-тичні (семінарські)	1				2	3		4	5	6	7	8				
													Кількість тижнів в семестрі							
											12	12	12	12	12	12	12	12	12	
1. ОБОВ'ЯЗКОВІ НАВЧАЛЬНІ ДИСЦИПЛІНИ																				
1.1. Дисципліни циклу загальної підготовки																				
OK1	Українська та зарубіжна культура		1			3	90	24	12		12	66	2							
OK2	Іноземна мова	4	1,2,3			12	360	192		192	168	4	4	4	4					
OK3	Ділова українська мова		2			3	90	24		24	66		2							
OK4	Філософія, політологія та соціологія	1,2				6	180	48	24	24	132	2	2							
OK5	Іноземна мова фахового спрямування	8	5,6,7			12	360	96		96	264				2	2	2	2		
OK6	Безпека життєдіяльності та цивільний захист	1			РГР	3	90	24	12	12	66	2								
OK7	Вища математика	1			Кт	6	180	60	24	36	120	5								
OK8	Фізика	2			Кт	6	180	60	24	24	120		5							
OK9	Загальна та неорганічна хімія	1,2				9	270	120	48	60	150	6	4							
OK10	Аналітична хімія та інструментальні методи аналізу	3	2			9	270	120	48	60	150		4	6						
OK11	Органічна хімія	3,4				9	270	132	48	72	138			5	6					
OK12	Фізична та колоїдна хімія	4	3			6	180	60	24	24	120			2	3					
OK13	Інформаційні системи та технології	2				3	90	24	12	12	66		2							
OK14	Фізичне виховання (позакредитна в 2,3,4 семестрах)		1			12	360	96		96	264	2	2	2	2					
Всього з циклу		14	11	0	3	90	2700	1008	276	252	480	1692	23	25	19	15	2	2	2	2
1.2. Дисципліни циклу професійної підготовки																				
OK15	Основи промислової фармації		1			3	90	24	12		12	66	2							
OK16	Фармацевтична ботаніка		4			3	90	48	12	36	42				4					
OK17	Лікарська рослинна сировина і фітопрепарати	5				6	180	60	24	36	120				5					
OK18	Біохімія та основи молекулярної біології	5,6				6	180	132	48	84	48				5	6				
OK19	Мікробіологія, гігієна і санітарія	6,7				6	180	96	36	60	84					5	3			

Всього	27	30	1	3	240,0	7200	2328	768	636	924	4872	25	25	25	25	25	25	25
Загальна кількість кредитів												30	30	30	30	30	30	30
Кількість годин на тиждень												25	25	25	25	25	25	25
Кількість екзаменів	27											4	4	2	3	3	3	4
Кількість заліків		30										4	4	4	4	4	4	4
Кількість розрахункових робіт				3								2	1					
Кількість курсових робіт (просктів)				1														1

Схвалено Вченою радою ФХБТ
 протокол № 8 від " 17 " січня 2024 р.

Погоджено
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Ольга БАУЛА

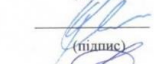
(ініціали та прізвище)



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