"APPROVED"
Rector of JSC SKMA
Zh. Seitzhanova
"__" _____ 2025y.

EDUCATIONAL PROGRAM

The code of the educational program:	7M10104
Name of the educational program:	Pharmacy
The level of the educational program:	Magistracy (specialized track)

Shymkent, 2025 y.

The educational program 7M10104 «Pharmacy» was developed by the members of the Academic Committee of educational programs at the master's and doctoral levels

Chairman of the AC OP for Masters and Doctoral levels K.K.Orynbassarova

Protocol № 8 25 03 2025y.

Agreed with the employer:

Director of the Association of Pharmaceutical and Medical Organizations «Damu» Kh. D. Alzhanova

Director of «Recipe» LLP I. A Baimbetov

Advisor to the Director of Pharmaceutical Activities of «Ecopharm International» LLP Zh. D Kenzhebaev

Head of the Production Department of «Zerde-Phyto» LLP M. Zh. Zhumataev

Approved by the Methodological Council

Vice-Rector for Academic Affairs M.У. Anartaeva

Protocol № 9 of 02 05 2025y.

Approved by the Academic Council

Protocol № 13 of 02 05 2025y.

Passport of the educational program

1. **The mission of the educational program:** Training of management personnel with the skills of experimental research work in pharmacy.
2. **The purpose of the educational program:** Training of managerial personnel for the pharmaceutical industry with organizational and management skills based on experimental research in pharmacy, with fundamental knowledge that guarantees them professional mobility in the real developing world.
3. **The basis of the educational program:** Creation of an effective training system for scientific personnel capable of effectively solving problems of pharmacy and management in healthcare in pharmacy, ensuring the modernization of education, science, and developing breakthrough technologies based on the integration of education and science.
4. **The professional standard on the basis of which the educational program was developed:**

Regulatory documents for the development of an educational program

- Order of the Minister of Science and Higher Education of the Republic of Kazakhstan «On approval of State mandatory standards of higher and postgraduate education» dated July 20, 2022 No. 2.
- Order of the Minister of Health of the Republic of Kazakhstan «On approval of state mandatory standards for levels of education in the field of healthcare» dated July 4, 2022 No. KR DSM-63.
- Order of the Minister of Education and Science of the Republic of Kazakhstan «On approval of the Rules for the organization of the educational process on credit technology of education in organizations of higher and (or) postgraduate education» dated April 20, 2011 No. 152.
- The Law of the Republic of Kazakhstan «On Education» dated July 27, 2007 No. 319-III (as amended on 07/04/2022)
- Order of the Minister of Education and Science of the Republic of Kazakhstan «On approval of Standard Rules for the activities of organizations of higher and postgraduate education» dated October 30, 2018 No. 595 (as amended on 12/29/2021)

- «Regulations on the procedure and procedures for the development of educational programs» JSC «SKMA» dated 29.04.2024
- Internal regulatory documents of JSC «SKMA»

5. The field of professional activity: Managers of pharmaceutical companies, quality management specialists in pharmacy, specialists in the rational use of medicines, experts in scientific research in research organizations and institutions of higher and postgraduate education (HEI and PHEI).

***6.* The object of professional activity:** Healthcare management organizations, organizations that oversee pharmaceutical activities, pharmaceutical and medical organizations, pharmaceutical manufacturing.

Types of professional activity: Pharmaceutical activities, activities in the field of circulation of medicinal products and medical devices.

General information

№	Characteristics of the EP	Data
1	Registration number	7M10100136
2	The code and classification of the field of education	7M10 Healthcare
3	The code and classification of the training area	7M101 Healthcare
4	Group of educational programs	M142 Pharmacy
5	Code, name of the educational program	7M10104 Pharmacy
6	Type of EP	Current EP
7	ISCED level	7
8	NQF level	7

9	IQF Level	7
10	Distinctive features of the EP	No
	Partner University (JEP)	-
	Partner University (DDEP)	-
11	List of competencies	Key competencies of the graduate of the program: **KC1** Able to effectively and successfully carry out research activities in the field of quality and safety of medicines and medicinal plant raw materials. **KC2** GMP and GPP can organize and manage the manufacturing process of pharmaceutical products in accordance with the standards of the relevant pharmaceutical practices. **KC3** Has the skills to validate analytical methods, statistical processing of test results, and prepare a report on the validation of methods in accordance with international requirements. **KC4** Able to plan, organize and manage pharmaceutical activities to create conditions for storage, transportation and quality control and sale of medicines and medical devices in accordance with the requirements of the standards of relevant pharmaceutical practices. **KC5** Competent in the field of pharmaceutical development in accordance with the principles of relevant practices, capable of professional.
12	Learning Outcomes	**LO1** Conducts pharmacoeconomic analysis, maintains clinical and pharmaceutical documentation. It uses digital methods and technologies, artificial intelligence capabilities to process large amounts of data, model scenarios, predict the effectiveness and safety of drug interventions, and optimize resource allocation in pharmacotherapy.

		LO2 Manages and plans the activities of pharmaceutical entities. Organizes and carries out pharmaceutical activities in the control and licensing system in the field of circulation of medicines and medical devices. **LO3** Organizes a documentation system that tracks actions taken regarding pharmaceutical products and medical devices, from the receipt and shipment of a batch/lot of products by the supplier to the customer, and identifies counterfeit pharmaceutical products and medical devices. Implements digital technologies and artificial intelligence tools for automated monitoring, data analysis, and detection of potential violations. **LO4** Organizes work in entities engaged in pharmaceutical activities to create conditions for storage, transportation and quality control of medicines and medical devices using digitalization and artificial intelligence. **LO5** Organizes and manages the technological process of manufacturing pharmaceutical products in accordance with the standards of good pharmaceutical practices GMP, GPP. Organizes procedures for quality control of medicines in accordance with the requirements of regulatory documents, international quality standards using digitalization and artificial intelligence. **LO6** Demonstrates knowledge and understanding of the interdisciplinary nature of research in modern pharmaceutical practice. **LO7** Is engaged in professional growth, demonstrates introspection skills
13	Form of study	In-person
14	Language of instruction	Kazakh, Russian
15	Amount of loans	60
16	Degree Awarded	Master public health on the educational program 7M10104 «Pharmacy»
17	Duration of training	1 year

18	Availability of an appendix to the license for the direction of personnel training	KZ36LAA00017587 (018)
19	Availability of EP accreditation	Yes
	Name of accreditation body	Independent Agency for Accreditation and Rating (IAAR)
	Accreditation Certificate No., Accreditation Validity Period	№AB 3992, 10.06.2022y. – 09.06.2027y.
20	Information about disciplines	Annex 1.2

Annex 1

Matrix of correlation of learning outcomes in the educational program as a whole with the competencies being formed

	LO1	LO2	LO3	LO4	LO5	LO6	LO7
KC1							
KC2							
KC3							
KC4							
KC5							

Annex 1.2

Matrix of achievability of competencies/learning outcomes

№	Name of the discipline	A brief description of the discipline	Cycle (BD, PD)	Component (UC, OC)	Number of credits	Generated LO (codes)
The cycle of basic disciplines					**10**	
Mandatory / University component					**6**	
1	Management in Healthcare (Management, psychology of management)	Introduction to management: basic concepts. Functions, principles and elements of the management process. The evolution of management: the conditions and prerequisites for the emergence of management, school management. Features of Kazakhstan management. Integration processes in management. Management systems: functions and organizational structures. Planning, SWOT-analysis and forecasting in management. Management processes: goal setting and assessment of the situation, making management decisions. Management in Healthcare mechanism.	BD	UC	3	LO2 LO4 LO7
2	Foreign language (professional)	Purpose of discipline: allows to develop communication skills in a foreign language, intercultural competencies and business correspondence skills. The main types reading original sources of foreign-language, preparation of written reports on scientific topics by specialty. Listen to lectures, messages containing professional information.	BD	UC	3	LO7

	Optional Component				**4**	
3	Good distribution practices	Infrastructure, its place and importance in good distribution practice. Features of LS as a consumer product. Principles of Good distribution practice adopted in the EU and recommended by the world health organization (WHO) a Unified approach to the organizational process of wholesale sale of medicines. Compliance with and documentation of all operating procedures.	BD	OC	4	LO3 LO4
	Optional component				**4**	
4	Instrumental methods of analysis	he application of a complex of modern physico-chemical ethods in solving the problems posed to the researcher. In-epth study of modern physico-chemical research methods pectral, electrochemical, etc.), the development of modern boratory analytical and testing equipment, the use of athematical methods for processing measurement results, as ell as the introduction of artificial intelligence and digital chnologies to automate data processing, optimize analytical rocesses and improve the accuracy of results.	BD	OC	4	LO3 LO6 LO7
	Optional component				**4**	
5	Organization and principles of functioning of the formulary system in medical organizations	The formulary system is based on a scientifically based choice of medicines with proven efficacy, safety and economic feasibility. The discipline studies the organization and principles of functioning of the formulary system in healthcare in Kazakhstan. The rules and requirements for the formation of forms are considered in order to optimize the	BD	OC	4	LO1 LO2

		use of medicines at the inpatient and outpatient levels, within the framework of GOBMP and OSMS using modern digital technologies in the healthcare system and the capabilities of artificial intelligence.				
Cycle of profile disciplines					**25**	
University component					**6**	
6	Management and marketing at pharmaceutical companies	Organizational model. Management as a tool for managing a pharmaceutical enterprise. Strategic management in pharmacy. Personnel management. Quality management of pharmaceutical activities. Office work at the enterprises of pharmaceutical profile. Marketing planning in the implementation of pricing policy, promotion and distribution of ideas, products and services. Smart principle and situation analysis. Assortment management. Maintaining the competitive advantages of pharmaceutical companies. Artificial intelligence in the pharmaceutical business.	PD	UC	3	LO2 LO3 LO6 LO7
7	Research methodology in pharmacy	Fundamentals of research methodology in pharmacy. Goals and objectives of the discipline. The emergence and development of pharmaceutical knowledge. Pharmacy as scientific knowledge. Means and methods of scientific research. Areas of research in pharmacy. Actual problems of health care and pharmacy, modern methods of their solution. Research methodology. Characteristics of scientific activity. Means and methods of scientific research. The use of	PD	UC	3	LO2 LO3 LO6 LO7

		information technology and artificial intelligence in scientific research.				
8	Industrial practice	Consolidation of theoretical knowledge acquired during the training process, acquisition of practical skills, competencies and experience in professional activities in public health, as well as development of best practices.	PD	UC	10	LO6
Optional Component					**10**	
9	Technology of parapharmaceutical and nutritsevtichesky medicines	Basic concepts, tasks, terms of the discipline «Technology of parapharmaceutical and nutraceutical drugs». Dietary supplements and public health. Natural products used in dietary supplements. Clinical efficacy of dietary supplements. The latest technologies for the production of medicines - products of nanotechnology and biotechnology.	PD	OC	4	LO3 LO5
10	Appropriate pharmaceutical practice GMP,GPP	International standards of good pharmaceutical practice GMP, GPP. Good Manufacturing Practice Standard GMP EAEU and RK. The standard of good pharmaceutical practice GPP of the EAEU and the Republic of Kazakhstan. The main provisions of the standards of good pharmaceutical practice. Requirements for organizing production in accordance with the rules of good practice. Implementation of GMP and GPP standards in pharmaceutical enterprises of the Republic of Kazakhstan.	PD	OC	3	LO1 LO4 LO5
11	Management consultation	Professional management consulting in the management of pharmaceutical personnel. Specific tools of management consulting services. Organizational diagnostics in	PD	OC	3	LO2 LO3

		management consulting. Methods of management consulting. Types of consulting services. Consultant–client relationships organisational diagnosis Methods. Regulation and ethics of digitalization of pharmacy.				
		Optional component			**10**	
12	Features of pharmacopoeial analysis of medicinal plant raw materials	Features of obtaining and prospects for creating effective and safe medicines. Qualitative and quantitative analysis and parameters for validating the method used. Physicochemical properties of biologically active substances in medicinal plants. Justification of the method for obtaining substances and dosage forms using digitalization and artificial intelligence.	PD	OC	4	LO4 LO5
13	GLP rules when creating new medicines	LP rules in drug quality control. Organization of the quality ntrol process for medicines from the stage of processing raw aterials to the production of finished products; new regulatory spects in the field of drug circulation in the European Union. rinciples of conducting preclinical research in accordance with ational and international GLP standards, including the use of gital technologies and artificial intelligence to automate the uality control process, analyze data, and improve the accuracy f preclinical research.	PD	OC	3	LO2 LO3 LO7
14	State registration and re-registration of medicinal raw	General provisions of state registration and re-registration of plant and animal origin. The structure and content of the documents of state registration and re-registration of the medicinal plant raw materials dossier. The procedure for the	PD	OC	3	LO1 LO2

	materials of plant and animal origin	examination. Types of expertise. Types of conclusions about the safety, effectiveness and quality of herbal drugs. Amendments to the state registration and re-registration dossier of vegetable and animal origin medicinal plant raw materials.				
Optional component					**10**	
15	Pharmacovigilance and safety of medicinal products in medical organizations	Pharmacovigilance includes a system for collecting and processing data on side effects, regulating the exchange of safety information between pharmaceutical companies and regulatory authorities, assessing and managing risks associated with medicines at all stages of their life cycle, obligations to monitor and transfer data on side effects after drug registration. The use of digital technologies and artificial intelligence increases the effectiveness of exchange of information on the safety of medicines	PD	OC	5	LO1 LO2 LO8
16	Assessment of the use of drugs	Assessment of the use of medicines is a scientific and methodological approach to the analysis of the use of drugs. It is based on data from clinical practice, epidemiology and pharmacoeconomics, identifies deviations from therapy standards, contributes to the optimization of treatment regimens and the formation of a rational drug policy.	PD	OC	5	LO5 LO6
Experimental research work					**13**	
17	Experimental research work of a student, including an	It is based on modern achievements of science, technology and production and contains specific practical recommendations and independent solutions to management			13	LO1 LO2 LO3 LO4 LO5 LO6

	internship and the implementation of a master's project	problems. Performed using advanced information technologies; Contains experimental and research (methodological, practical) sections.				LO7
Final examination					**12**	
18	Design and defense of a master's project	Assessment of learning outcomes and key competencies achieved upon completion of the Master's degree program.			12	LO1 LO2 LO3 LO4 LO5 LO6 LO7
TOTAL					**60**	