

"APPROVED"  
JSC "SKMA"  
Rector [Signature]  
d. m.s., professor M.M. Rysbekov  
"08" "08" 2022y.

### EDUCATIONAL PROGRAM

EP code: 8D10140  
Name of the educational program: "Pharmacy"  
Level of the educational program: Doctorate.

Shymkent, 2022y.



ONTUSTIK KAZAKHSTAN  
MEDISINA  
AKADEMIASY  
«Оңтүстік Қазақстан медицина академиясы» АҚ

SOUTH KAZAKHSTAN  
MEDICAL  
ACADEMY  
АО «Южно-Казахстанская медицинская академия»

«Оңтүстік Қазақстан медицина академиясы» АҚ

АО «Южно-Казахстанская медицинская академия»

"Department of Postgraduate Education"

Educational program

**The educational program was developed by:**

Head of the Department of Medicines Technology,  
Doctor of Pharmaceutical Sciences, professor

Department of Organization and Management of Pharmacy Business  
manager, doctor of pharmaceutical sciences, professor

Department of Pharmaceutical and Toxicological Chemistry  
Head, Doctor of Pharmacy, professor

Head of the Department of Pharmacognosy,  
Candidate of Pharmaceutical Sciences, professor a.

**Agreed with the employer:**

Pharmaceutical and  
Director of the Association of Medical Organizations

Director of LLP "Recipe"

Pharmaceutics of the General Director of Eco-Pharm LLP  
service consultant

Head of the production department of Zerde-Fito LLP

Sagyndykova B.A. *B.A. Sagyndykova*

Shertaeva K.D. *K.D. Shertaeva*

Ordabayeva S.K. *S.K. Ordabayeva*

Orynbasarova K.K. *K.K. Orynbasarova*


Alzhanova Kh.D. *Kh.D. Alzhanova*

Baimbetov E.A. *E.A. Baimbetov*

Kenzhebaev Zh.D. *Zh.D. Kenzhebaev*

Zhumataev M.Zh. *M.Zh. Zhumataev*



ОНТҮСТІК ҚАЗАҚСТАН МЕДИЦИНА АКАДЕМИЯСЫ «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
"Department of Postgraduate Education" Educational program		


**Chairman of the Department of Pharmacy**

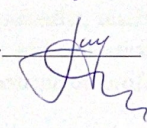
Protocol № 12 05 08 2022y.

**Approved by the Academic Council**

Vice-Rector of the SCW


Protocol № 5a 08 08 2022y.

Toksanbayeva Zh.S. 

Nurmashev B.K. 

**Approved by the Academic Council**

Protocol № 15 08 08 2022y.

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"Department of Postgraduate Education"		
Educational program		

### 8D10140 - Passport of the educational program "Pharmacy".

**Mission of the educational program:** "Preparation of a highly qualified competitive specialist - a scientist, teacher with the award of a PhD degree in pharmaceutical profile based on the achievements of modern science, practice and education, ready to adapt to dynamically changing conditions in the pharmaceutical industry through continuous improvement of professional competencies.

**The purpose of the educational program:** Training of competitive, competent scientific and pedagogical personnel to meet the needs of science, education and production in the field of pharmacy

**EP base:** demand in the labor market: the educational program is aimed at healthcare professionals who are able to conduct scientific research and introduce organizational and managerial technologies to solve complex problems of protecting public health and developing an effective healthcare system in Kazakhstan.


**1. Regulatory documents for the creation of an educational program (state educational standards, professional standards, etc.)**

- On amendments to the order of the Acting Minister of Health and Social Development of the Republic of Kazakhstan dated July 31, 2015 No. 647 "On approval of state uniform mandatory standards and standard vocational training programs for medical and pharmaceutical specialties" (No. DSM-12/2020 RK 21.02.2020 );
- "Rules for organizing the educational process on credit technology» Order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 N152 (12.10.2018, with amendments and additions, No. 563)
- Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 No. 319-III (as amended and supplemented on July 4, 2018);
- State standard for compulsory education at all levels of education (31.10.2018 No. 604);

**2. Sphere of professional activity:** healthcare organizers; heads of state and non-state medical and non-medical institutions; Scientific and pedagogical activity in universities;

**3. Professional Services Object:** healthcare management organizations, healthcare and social security organizations, organizations of higher and postgraduate education; organization of science.



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**types of professional services:**


- organizational and managerial; to
- research activities;
- 
- 

**general information**

№	Description of EP	Data
1	Code and classification of the field of education	8D10 Health care
2	Code and classification of areas of study	8D101 Health care
3	Group of educational programs	D140 Pharmacy
4	Name of the educational program	8D10140 Pharmacy
5	type EP	New EP
6	BJHS level	8
7	Level according to NBS	8
8	SBS level	
9	EP features	a) not
	Partner University (EP)	-
	Partner higher education institution	-
10	List of competencies	
11	Learning Outcomes	<p>Presentation of the educational results of the program graduate (listing and coding).</p> <p>TR 1 - demonstrates a deep understanding and mastery of methodological approaches in conducting modern research in pharmaceutical science and practice in accordance with the requirements of the current legislation of the Republic of Kazakhstan and Good Pharmaceutical Practices (GxP)</p>

		<p>TR 2 - Able to conduct independent research and work towards scientific results in drug development, manufacturing, quality control and research. Manages the organization of control over the documentation of entities engaged in pharmaceutical activities</p> <p>TR 3 - Organizes a system of external and internal audit of pharmaceutical organizations. Plans, organizes and manages the activities of subjects in the field of circulation of medicines and medical products</p> <p>TR 4 -Organizes pharmaceutical activities and drug safety monitoring in the pharmacovigilance system (SVP).</p> <p>TR 5 -Forms marketing activities to solve the operational and strategic tasks of entities in the field of circulation of medicines and medical products.</p> <p>TR 6 -Manages the work of clinical and pharmaceutical services, manufacturers of medicines and medical products and their representatives in medical and pharmaceutical organizations.</p> <p>TR 7 - evaluates the organization and conduct of work with medical personnel on the conduct of effective pharmacotherapy and clinical drug trials (CTL) in medical organizations</p> <p>TR 8 - Demonstrates introspection skills, a commitment to lifelong learning, and teaching experience in higher education and graduate school.</p>
12	Study type	Daytime
13	Language of instruction	Kazakh, Russian
14	Amount of loans	180
15	Period of study	3 years
16	Degree awarded	Doctor of Health



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17	Availability of an application to the license for personnel training	-
18	BBB accreditation	Not
	Name of the accreditation body	-
	Accreditation period	-
19	Item Details	Information about the subjects of the FBP, BP, KP HOK / TK (Appendix 1.2)

*Annex 1*

8D10140- MATRIX for comparing learning outcomes with developing competencies in the educational program "Pharmacy"

	TR 1	TR 2	TR 3	TR 4	TR 5	TR 6	TR 7	TR 8
KK1								
KK2								
KK3								
KK4								

KK1	He can effectively and successfully carry out research activities in the field of quality and safety of medicinal substances and medicinal plant materials.
KK2	Able to organize and manage the manufacturing process of a pharmaceutical product in accordance with GMP and GPP standards of the relevant pharmaceutical practice.
KK3	He has skills in validating analytical methods, statistical processing of the results obtained during testing, compiling a report on the validation of methods in accordance with international requirements
KK4	Able to plan, organize and manage pharmaceutical activities for the storage, transportation and quality control of medicines and medical devices in accordance with the requirements of the standards of relevant pharmaceutical practice.
KK5	Competent in the field of pharmaceutical development according to the principles of relevant practices, capable of professional growth and introspection.

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#### 8D10140 - "Pharmacy" learning outcomes for the educational program

Result code	Results Statement
TR 1	Demonstrates a deep understanding and mastery of methodological approaches in conducting modern research in pharmaceutical science and practice in accordance with the requirements of the current legislation of the Republic of Kazakhstan and Good Pharmaceutical Practice (GxP)
TR 2	Able to conduct independent research and work towards scientific results in drug development, manufacturing, quality control and research. Manages the organization of control over the documentation of entities engaged in pharmaceutical activities
TR 3	Organizes a system of external and internal audit of pharmaceutical organizations. Plans, organizes and manages the activities of subjects in the field of circulation of medicines and medical products
TR 4	Organizes pharmaceutical activities and drug safety monitoring in the pharmacovigilance system (SVP).
TR 5	Forms marketing activities to solve the operational and strategic tasks of entities in the field of circulation of medicines and medical products.
TR 6	Manages the work of clinical and pharmaceutical services, manufacturers of medicines and medical products and their representatives in medical and pharmaceutical organizations.
TR 7	Evaluates the organization and conduct of work with medical personnel on the conduct of effective pharmacotherapy and clinical trials of drugs (CTL) in medical organizations
TR 8	Demonstrates introspection skills, a commitment to lifelong learning, and teaching experience at graduate and postgraduate levels.
TR 9	Demonstrates academic writing skills, composes and structures academic texts of various genres to solve scientific problems.



№	Item name	Summary (30-50word)	Amount of credits	TR(code) formation							TR8	TR9	
				TR1	TR2	TR3	TR4	TR5	TR6	TR7			
<b>Educational Components/ Basic item cycle (BP)/University component (HEI)</b>													
1	Biostatistics (advanced course)	Elements of the theory of measurements. Methods of comparison and analysis of statistical collections. Nonparametric measurements. Standardization method, its meaning and application. Statistical packages used by computer statistical programs SPSS, SAS, Stata. public health statistics. health system statistics. Development and application of statistical methods for planning and analyzing biomedical research. Possibilities of modeling in health care.	3	+	+								

2	academic writing	Application of modern methods of scientific communication in academic writing. Comparative analysis of academic writing genres. Creation and structuring of academic text of various genres for solving scientific problems. Evidence and use of sources, scientific databases. Drawing up an abstract, an analytical review, a review of a scientific article. Methodology of work with the dissertation. Preparation of scientific projects.	3									+
3	Pedagogical experience	Formation of a comprehensive psychological and pedagogical, methodological and information technology preparation of a doctoral candidate for scientific and pedagogical activities at a university.	10				+		+			
Basic item cycle (BP)/Select Component												





6	Pharmaceutical processing and process validation	Development of technology at the stage of pharmaceutical production. Requirements for the structure and volume of pharmaceutical development. Development of technology for the production of finished medicines. Validation of technological processes Description of the technological process during processing. Product development report. Preclinical studies, clinical studies, bioequivalence studies.	3	+	+							
7	Actual problems of the formulary system in a medical organization	Principles of operation of the formulary system in a medical organization. Selection of medicines in the medicinal formulary of a medical organization. Proven clinical efficacy of drugs. Basic services of the form system. Responsibilities of a drug formulary. Problems of standardization of pharmacotherapeutic care.	3						+			



8	Methodology of chemical-toxicological studies	The current state of analytical studies of toxicants in biological objects, new and diverse ways of preparing biological objects for analysis. Basic tests for drugs and other poisons. Quality standards and protocols for analytical toxicology laboratories. Evaluation, interpretation and reporting of the results of chemical-toxicological studies.	3	+			+					+	
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9	The concept of marketing research in pharmacy.	The main directions of marketing research in pharmacy. Information about pharmaceutical marketing. Marketing research methodology. Research of the pharmaceutical market. The study of the marketing environment of the enterprise. Study of competitors and competitiveness of a pharmaceutical organization. Marketing research in the field of benchmarking and development of a marketing strategy. Analytical system for marketing and presentation of results. Project management.		+				+			+		
Subjects - a component of higher education													



10	Research Methodology in Pharmacy	Fundamentals of national and international law in the field of scientific research. Regulatory order and ethical principles of health research. Research programs by sources of funding. Research methodology. Systematic review. Meta-analysis. Implementation of R&D results, protection of intellectual property (patenting). General requirements and rules for the design of research papers. Publications in peer-reviewed journals.	3	+	+						+	
Items - Optional Component (OC)												

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11	Organization of production of medicines according to GMP	Basic requirements of good manufacturing practice for medicines. Pharmaceutical quality system Personnel. Premises and equipment. Documentation. Technological process. Quality control. Self inspection. Development of medicines. Basic requirements for active substances used as primary raw materials. Clean room technology. Basic rules and requirements of GMP. Pharmaceutical company documentation. Description of raw materials, packaging material, finished products.	3	+	+							+	
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12	Safety and environmental aspects of obtaining medicinal plant materials	Technology for the study and isolation of substances and phytopreparations obtained from herbal medicinal raw materials. Relationship between the chemical structure of plant substances and their pharmacological activity. Sources and assortment, types of modern phytopreparations in the world pharmaceutical market.	3	+	+	+	+				
13	Features of drug use depending on age and gender	Physiological and premature aging. Theory of aging, features of the emotional and personal sphere in late adulthood. Features of the use of drugs in pediatric and geriatric practice for various diseases of organs and systems. Comorbid and polymorbid. Side effects of polypharmacy and drug interactions. Fall prevention. Compliance issues in the elderly. Features of the use of drugs by gender.		3						+	

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14	<p>Good Practice for Growing and Harvesting Medicinal Plants (GACP).</p>	<p>Regulations. Formulation of strategy and concept. Implementation of GACP principles. Research methods in plant growing. Stocks. Documentation. Seeds and seedlings. Growing. Ecological aspects of the introduction of medicinal plants. Collection of products. Drying and primary processing of raw materials. Plastic bag. Storage and market price.</p>	3	+	+								
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15	Fundamentals of Good Practice Management in Pharmacy  Development of the science of quality assurance and management of medicines. Legal framework of the quality assurance system of the Republic of Kazakhstan. Basic principles of current practice in the field of legal assistance in Kazakhstan. Quality control. Activities of regulatory bodies in the field of circulation of medicines. Quality management system of subjects-enterprises of the pharmaceutical market. quality system. Internal audits (self-checks) of pharmaceutical quality systems. Good pharmacovigilance practice (GVP) standard. Audit of the quality of the pharmaceutical sector of the Republic of Kazakhstan.	3			+	+	+						
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16	Modern methods of analysis of medicinal raw materials	Standardization of natural medicinal raw materials. Qualitative and quantitative assessment of active components in natural raw materials. Determination of the authenticity and suitability of medicinal plant materials. Macroscopic and microscopic analysis of whole, crushed, crushed and powdered medicinal plant materials. Nomenclature of natural medicines in the global pharmaceutical market.		+	+							
17	Technology of drugs with modified action and modified release	New types of drugs and drug transport systems. Types of drugs with modified release. Drugs with a modified mechanism and pattern of drug release. Description of the drug delivery system. Additional items. Requirements for them: functional purpose of polymer excipients in drug technology.		+	+						+	





19	Research work of a doctoral student, including an internship and a master's thesis (MSD).	Conduct independent research and work on scientific results. Forecasting the results of innovation activity. Analysis, evaluation and synthesis of new complex ideas. Publication of research results in international scientific journals.	123	+	+	+	+	+	+	+	+
20	Writing and defending a doctoral dissertation		12	+	+	+	+	+	+	+	+
	<b>General</b>		<b>180</b>								