

1. Area of use

It is intended for the preparation of masters in the modular educational program " 7M09101-Veterinary Medicine" in the NAO "Kazakh national agrarian research University"

2. Regulatory documents

"On Education" Law of the Republic of Kazakhstan dated July 27, 2007 No. 319-III

The state mandatory standard of higher education. Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2;

Classifier of training areas with higher and postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 No. 569;

Standard rules of activity of educational organizations implementing educational programs of higher and (or) postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No. 595;

Rules for the organization of the educational process on credit technology of training. Order of the Minister of Education and Science of the Republic of Kazakhstan dated 12.10.2018 No. 563;

The algorithm of inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan No. 665 dated December 4, 2018;

Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated October 12, 2022 No. 106. Rules for maintaining the register of educational programs implemented by organizations of higher and (or) postgraduate education, as well as the grounds for inclusion in the register of educational programs and exclusion from it.

Professional standard. Appendix No. 72 to the Order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 11.12.2018 No. 339.

Professional standard. Appendix No. 15 to the order of the Deputy Chairman of the Board of the National chamber of entrepreneurs of the Republic of Kazakhstan "Atameken" dated 26.12.2019 No. 263

Professional standards of activity in Veterinary medicine (from 20.01.2014, the number 20/39).

Professional standards for breeding animals ("camel dairy", "Raising cattle for dairy", "Breeding horses dairy", "Breeding of sheep and goats", etc.), No. 263 from 26.12.2019.

The website of NCE Atameken <http://atameken.kz/>

**1. Passport of the educational program
«7M09101-Veterinary medicine»**

Code and classification of the field of education	7M09-Vetrinary
Code and classification of the directions of preparation	7M091-Veterinary
Code and name of the educational program	«7M09101-Veterinary medicine»
Type of educational programm	Current
Purpose of educational programm	Providing conditions for receiving quality professional education, professional competence in veterinarians, methods of scientific knowledge and analyse scientific-theoretical basis for ability realization in scientific-research and pedagogical field
Level on International standard education classifications	7
Level on National a framework of qualifications	7
Level on branch a framework of qualifications	7
Number of the annex to the license for the direction of training	KZ89LAA00031870 05.08.2021y
Accreditation of Educational programm	ACQUIN 27.09.2021 -30.09.2028
Awarded degree	Master of Science in veterinary under the educational programme «7M09101-Veterinary medicine»
Results of education	Table 2
List of qualification and specialist positions	The graduate may carry out professional activities in the following areas: <ul style="list-style-type: none"> - Teacher of middle and specialized schools and universities - Specialist in State organs of control of government objects, veterinary inspector of villages - Veterinarian of laboratory - Scientific personal in scientific-research organizations - Head of the veterinary laboratory;
Field of professional activity	pedagogical activity in higher, specialized secondary, vocational and technical educational institutions of agrarian and biological profile, scientific work in scientific and industrial establishments; management activities in the local, district, regional, republican agencies of the Ministry of Defense, the Ministry of Internal Affairs, the National Security Committee, professional activities in public and private veterinary and biological areas; <ul style="list-style-type: none"> - with the profile direction local, rural, district, regional, republican, state veterinary structures, private veterinary clinics, pharmacies and hospitals, agricultural,

	nature protection, design, administrative institutions, expert, control and analytical services, structures veterinarian -the service of the ministries of defense, internal affairs and the national security committee (Ministry of Defense, Ministry of Interior, National Security Committee);
Sphere and object of professional activity	<ul style="list-style-type: none"> - research institutes; -organizational management activities; - production and technological activities; experimental research activities; -educational (pedagogical) activities of the veterinary, biological, research directions in higher education, - secondary special and vocational schools; - consulting activities at veterinary supervision enterprises, in various types of households, in organizations, firms of veterinary, biological and agricultural areas, in the production of biological preparations
Functions of professional activity	<p>The educational program 7M09101-Veterinary medicine includes 5 (five) educational trajectories:</p> <p>1th EP "Diagnosis and therapy of animal diseases" Master's professional activity is aimed at:</p> <ul style="list-style-type: none"> - analysis of morphological, biochemical and functional characteristics of hematological parameters in health and disease; - determine the level of the normal and pathological state of organs and systems based on clinical and laboratory studies; - implementation of the assessment of the action of toxic substances, in specific conditions the development of measures for the prevention of poisoning of animals; - developing systems based on clinical and laboratory research and associating identified symptoms and syndromes for diagnosing hypovitaminosis in agricultural animals; - determining the etiology, pathogenesis, clinical picture with beriberi, nontraditional methods of treatment of internal non-communicable animal diseases; - participation in the development of measures to prevent non-communicable diseases of animals, and also provides organizational assistance for the implementation of the developed activities; <p>2 th EP "Veterinary Reproductology and Surgical Pathology" Master's professional activity is aimed at:</p> <ul style="list-style-type: none"> - carrying out procedures of reception, treatment and prevention of obstetric pathology, rendering delivery operations and in carrying out receptions rodovspomozheniya; - - research of male producers, diagnostics, treatment and prevention of diseases of reproductive organs of males; - organization and conduct of scientific research using modern methods of forensic examination. <p>3th EP "Biological safety in infectious animal dis-</p>

eases"

Master's professional activity is aimed at:

- study of the geography of distribution, history and evolution of especially dangerous animal infections;
- conducting epizootological monitoring of highly dangerous transboundary zoonoses in order to study the epizootological and ecological aspects of the distribution of zoonosis;
- conducting epidemiological monitoring in a specific area, preventive and curative measures of especially dangerous diseases;
- the solution by innovative methods of their path of destruction and treatment, rapid health improvement paths from specific highly dangerous diseases;
- development and adjustment of a plan for a system of preventive and curative measures for especially dangerous transboundary zoonoses;
- possession of modern methods for the formulation of epidemiological diagnosis of especially dangerous zoonotic infections of animals
- application of modern achievements of biology for the diagnosis and prevention of infectious animal diseases.
- assessment and control of potential threats of contamination to the country of causative agents of known animal diseases;

4th EP "Biological safety in invasive pathology of animals"

Master's professional activity is aimed at:

- application of knowledge in the organization of diagnostic and treatment-and-prophylactic measures against various animal parasitosis;
- study of the peculiarities of biology and ecology of parasitosis in various climatic and geographical zones;
- the solution of problematic issues of mixed associative animal diseases using diagnostic and differential diagnostics methods in mono-bi and poly invasions;
- organization and implementation of measures to combat mixed associative animal diseases; modern problems of parasite cenoses;
- the ability to predict the epizootic situation in major tropical invasions;
- Differentiation of poisonous insects and compiling calendar plans for antiparasitic measures in the regions of subtropical and tropical countries;
- organization and conduct of research using modern methods for the use of drugs, the determination of their residual effects and methods of neutralization of environmental objects.

5th "Nosology of infectious diseases of animals and birds"

Master's professional activity is aimed at:

- organization and functioning of genetic material in microorganisms, mechanisms and patterns of heredity, variability, methodology of their study;
- Systematization of representatives of the kingdom of

	<p>fungi, the classification and construction of the phylogenetic system of fungi, reflecting their diversity;</p> <ul style="list-style-type: none"> - study of the species spectrum of clostridia causing diseases of animals and birds in the territory of the Republic of Kazakhstan - the study of the features of the pathogenesis of enteroinfection and modern approaches to the correction of immunity in young animals of agricultural animals. <p>Undergraduates of five educational trajectories can conduct pedagogical activities in educational institutions</p>
Types of professional activity	<p>Masters of the direction of training 7M09101- "Veterinary medicine" can perform the following types of professional activities:</p> <p>1. Production and technology:</p> <ul style="list-style-type: none"> -the acquisition of practical skills, competencies and experience of professional activity, as well as the development of best practices; - developing systems based on clinical and laboratory research and associating identified symptoms and syndromes for diagnosis of toxosis and hypovitaminosis in agricultural animals; - development of a modern technology for keeping highly productive animals and methods for assessing the influence of negative factors on reproductive function; - development of innovative methods of diagnosis and treatment of pathologies of the ears, eyes, pharynx, tongue and nasal cavity, bone tumors and soft tissues of the musculoskeletal system of animals; - development of a system of preventive and curative measures for especially dangerous transboundary zoonoses; - application of modern achievements of biology for the diagnosis and prevention of infectious animal diseases; - organization and implementation of measures to combat mixed associative animal diseases; <p>2. Organizational and managerial:</p> <ul style="list-style-type: none"> - introduction of measures for the prevention of non-communicable animal diseases, provision of organizational assistance for the implementation of the developed measures; - selection and training of personnel of industrial enterprises; - solution by innovative methods of salutary ways from specific particularly dangerous and invasive animal diseases; - introduction of modern embryology and immunology, assessment of the quality of therapeutic and preventive work using modern methods in veterinary reproduction; - introduction of treatment-and-prophylactic measures at ophthalmology, dentistry and otolaryngology, bone and soft tissue tumors of the musculoskeletal system;

	<ul style="list-style-type: none"> - management of personnel and protection of the territory of the facility from potential threats of bringing into the country causative agents of little-known animal diseases. <p>3. Research:</p> <ul style="list-style-type: none"> - determination of the level of the normal and pathological state of organs and systems on the basis of clinical and laboratory research; - Conducting research work to develop innovative methods of treatment of internal non-communicable animal diseases; - to investigate ontogenesis, the classification of egg cells, periods of embryogenesis, fragmentation, gastrulation, extrapartic organs, stages of resistance and immunological reactivity of the animal organism; - conducting of ophthalmologic, stomatologic and otolaryngological studies, the study of bone tumors and soft tissues of the musculoskeletal system of animals. - epizootological monitoring of especially dangerous transboundary zoonoses in order to study the environmental aspects of the distribution of zoonoses; - Conducting research work to develop diagnostics of infectious and invasive animal diseases; - conducting research work to develop biological agents for the prevention of infectious and invasive animal diseases ;; - organization of work on the assessment of workplaces and safety of potentially dangerous productions <p>4. Scientific and pedagogical:</p> <ul style="list-style-type: none"> - the study of modern methods of teaching the disciplines of veterinary medicine; - development of scientifically based methods for improving the qualifications of veterinary workers at all levels; - use in the process of teaching innovative learning technologies.
Be competence	<ul style="list-style-type: none"> - in the field of scientific research methodology; - in matters of innovative production in all branches of veterinary medicine, at veterinary inspection enterprises, in various types of farms, in organizations, firms of veterinary, biological and agricultural areas; - in the field of scientific and educational activities in educational organizations; - in the implementation of scientific projects and research in the professional field.

1. Results of education of Educational program

Codes	Results education
RE1	To demonstrate developing knowledge and understanding in the philosophy of science, psychology and pedagogy, use modern methods of teaching the basics of employee health and safety, find the optimal change in the psychological situation and provide management solutions
RE2	Be proficient in morphology and physiology, the mechanism of development of blood diseases, underlying the transmission of hereditary information and variability of genetic material, diseases of organs, systems and pathogenicity of infectious agents and interpretation of the results of scientific research
RE3	To use the skills of solving clinical research problems by establishing links with other professions, assessing the quality of therapeutic and preventive work using modern methods of hematology, immunology, infusion therapy
RE4	Possess modern methods of diagnosis of eyes, teeth, ears, bones and soft tissues, limbs and other surgical, andrological, alimentary and endocrine diseases, feed poisoning of non-infectious etiology, with violations of animal reproduction and use physiotherapy procedures with the basics of phytology
RE5	To apply their knowledge at a professional level by establishing connections with other professions, understanding and abilities in researching the benefits of physiotherapeutic treatment methods and the authenticity of medicinal plant raw materials, as well as to carry out the basic technological processes of manufacturing dosage forms and the principles of organization and enterprise management. pharmacy service and pharmaceutical commodity science of the Republic of Kazakhstan
RE6	To characterize the current situation in Kazakhstan and abroad on diseases of infectious, parasitic and non-infectious etiology of animals and independently carry out scientific diagnostic studies using modern methods and veterinary measures taking into account the characteristics of infection
RE7	To design our own research experience with global problems of zoonotic, parasitic and little-known, new and returning infections, mycological diseases of animals, and to develop a system of diagnostics and preventive, health-improving measures based on modern achievements of biology
RE8	Apply knowledge in solving the problem of reproduction of highly productive animals, assess the impact of negative factors on reproductive function and clarify issues of physiology and pathology of the breast, introduce best practices in artificial insemination and reproduction of farm animals.
RE9	Taking into account social, ethical and scientific considerations, implement preventive and health measures proposed by the WOA, coordinate anti-epizootic measures with partner countries for foreign economic relations on the basis of international rules and regulations, manage risks and predict its consequences
RE 10	Be competent in the diagnosis, treatment and prevention of various diseases of the teeth, tongue and pharynx, pathologies of the distal extremities and hooves, using laboratory, X-ray, ultrasound and specialized research methods and techniques of surgical operations

**3. The content of the modular educational program
"7M09101-Veterinary Medicine"**

III	VK/ KV	Names of modules	Code of discipline	Name of the discipline that forms the competence	Total academic credits	Volume in hours						Distribution of credits by courses and semesters				Department ¹	Form of control	
						Total academic hours	Auditoriums				Extracurricular		1 course		2 course			
							Lectures	Practical class	Laboratory research	Other (practice)	SRMP	SRM	1	2	3			4
1	Tt		Theoretical training		76	2280	210	510	0	20	435	1165						
CBD: VK/KV			Cycle of basic disciplines: University component / optional Component		35	1050	90	225	0	20	195	520						
1.1	CB D		Cycle of basic disciplines															
1)	UC		University component		20	600	45	135	0	20	105	295						
			including:															
1.1.1	UC	Science communication and organization of the learning process in higher school	HPS 60201	History and philosophy of science	5	150	15	30	0	0	30	75	5				29	exam
1.1.2	UC		FL 60202	Foreign language (professional)	5	150	15	30	0	0	30	75	5				14	exam
1.1.3	UC		HSP 60203	Higher School Pedagogy	5	150	15	30	0	0	30	75	5				6	exam
1.1.4	UC		MP 60204	Managerial Psychology	3	90	15	30	0	0	15	30		3			6	exam

1.1.5	UC		TP 60200	Teaching practice	2	60				20		40		2				Report	
2)	CC		Component of choice			15	450	45	90	0	0	90	225						
Educational program №1 «Diagnosis and therapy of animal disease »																			
1.1.6	CC	Module 2 Modern aspects of clinical veterinary medicine	CH 60205	Clinical hematology	5	150	15	30	0	0	30	75	5				21	exam	
1.1.7	CC		POTB 60205	Pathology of the breast	5	150	15	30	0	0	30	75	5				22	exam	
1.1.8	CC		MPV M 60205	Modern problems of veterinary medicine	5	150	15	30	0	0	30	75	5				20	exam	
1.1.9	CC		Bio/ 60205	Biogeoparasitoses	5	150	15	30	0	0	30	75	5				20	exam	
1.1. 10	CC		GM 60205	Genetics of microorganisms	5	150	15	30	0	0	30	75	5				23	exam	
1.1. 11	CC	Module 3 Current problems of animal dis- eases	AFP 60206	Animal food poisoning	5	150	15	30	0	0	30	75	5				21	exam	
1.1. 12	CC		CO 60206	Clinical orthopedics	5	150	15	30	0	0	30	75	5				22	exam	
1.1. 13	CC		TIOD APOI DOA 60206	Topical issues of diagnosis and prevention of infectious diseases of animals	5	150	15	30	0	0	30	75	5				20	exam	
1.1. 14	CC		ETP 60206	Ecological and tropical Parasitology	5	150	15	30	0	0	30	75	5				20	exam	

1.1.15	CC		MNRI 60206	Microbiology of new and recurring infections	5	150	15	30	0	0	30	75	5				23	exam	
1.1.16	CC	Module 4 Diagnostic research methods	AED 60207	Alimentary and endocrine diseases	5	150	15	30	0	0	30	75	5				21	exam	
1.1.17	CC		LKAI 60207	Little-known animal infections		150	15	30	0	0	30	75						20	exam
1.1.18	CC		MFID 60207	Monitoring and forecasting of invasive diseases		150	15	30	0	0	30	75						20	exam
1.1.19	CC		MM 60207	Mycoses and mycotoxicosis		150	15	30	0	0	30	75						23	exam
1.1.20	CC		DAO 60207	Dentistry and otolaryngology		150	15	30	0	0	30	75						22	exam
MSC: UC/OC				Major Subject Cycle (MS) University component / optional Component		53	1290	120	285	0	0	240		645					
1.2	MS C		Major Subject Cycle (MS)																
1)	UC		University component		20	600	60	120	0	0	120	300							
1.2.1	UC	Module 5 Project management and the methodology of scientific research	PMFE 60301	Project management in the field of entrepreneurship	5	150	15	30	0	0	30	75		5			6	exam	
1.2.2	UC		MSR VM 60302	Methodology scientific research in veterinary medicine	5	150	15	30	0	0	30	75		5			20	exam	
1.2.3	UC		MBS 70303	Modeling of business solutions	5	150	15	30	0	0	30	75			5		8	exam	
1.2.4	UC		Con 70304	Conflictology	5	150	15	30	0	0	30	75			5		8	exam	

2)	CC		Component of choice	23	690	60	165	0	0	120	345							
1.2.5	CC	Module 6 Complex methods of studying animal diseases	Hyp 70305	Hypovitaminoses	6	180	15	45	0	0	30	90	6			21	exam	
1.2.6	CC		MAIN FRFH PC 70305	Methods for as- sessing the impact of negative factors on the reproductive function of highly productive cattle		180	15	45	0	0	30	90					22	exam
1.2.7	CC		ZI 70305	Zoonotic Infections		180	15	45	0	0	30	90					20	exam
1.2.8	CC		BBDT PID 70305	Biological basis of diagnosis, treatment and prevention of parasitic diseases		180	15	45	0	0	30	90					20	exam
1.2.9	CC		CAB 70305	Clostridiosis of animals and birds		180	15	45	0	0	30	90					23	exam
1.2. 11	CC	Module7 Problems of infectious and non- infectious pathologye	PWBP 70306	Physiotherapy with the basics of phytology	6	180	15	45	0	0	30	90	6			21	exam	
1.2. 12	CC		HR 70306	Herd reproduction		180	15	45	0	0	30	90					22	exam
1.2. 13	CC		PZI 70306	Pathomorphology of zoonotic infections		180	15	45	0	0	30	90					20	exam
1.2. 14	CC		DPDP 70306	Differential pathomorphological diagnosis of parasites		180	15	45	0	0	30	90					20	exam
1.2. 15	CC		EFAB BE 70306	Enteroinfection of farm animals and birds of bacterial etiology		180	15	45	0	0	30	90					23	exam

1.2.16	CC	Module 8 Promising issues of theory and practice in veterinary medicine	OMVP BP 70307	Organization and management of veterinary pharmacy with the basics of pharmacology	6	180	15	45	0	0	30	90			6	21	exam
1.2.17	CC		NDBS T 70307	Tumor diseases of bones and soft tissues		180	15	45	0	0	30	90				22	exam
1.2.18	CC		NISPI AD 70307	National and international systems for the prevention of infectious diseases of animals		180	15	45	0	0	30	90				20	exam
1.2.19	CC		MAD 70307	Modern antiparasitic drugs		180	15	45	0	0	30	90				20	exam
1.2.20	CC		ESZhP VE 70307	Enteroinfection of farm animals and birds of viral etiology		180	15	45	0	0	30	90				23	exam
1.2.21	CC	Module 9 Rational methods and standards in veterinary medicine	NTMT NIAD 70308	Non-traditional methods of treatment of non-communicable animal diseases	5	150	15	30	0	0	30	75			5	21	exam
1.2.22	CC		ITSDA 70308	Infusion therapy of surgical diseases of animals		150	15	30	0	0	30	75				22	exam

1.2. 23	CC		SEOA PM 70308	Study of environmental objects and animals by parasitological methods		150	15	30	0	0	30	75				20	exam		
1.2. 24	CC		IDAIS OBIV M 70308	Innovative developments and international standards of biosafety in veterinary medicine		150	15	30	0	0	30	75				20	exam		
1.2. 25	CC		EIPFA B 70308	Enteropatii immunoprophylaxis of farm animals and birds		150	15	30	0	0	30	75				23	exam		
1.2. 26	UC		RST 60300	Research scientific training	10	300				100		200		5		5	8	report	
2)	UC	Final attestation	RWM S 60300 1	Research work for the Master's Degree including an internship and a Master's Thesis. Research work of a master's student Research work of a master's student	24	720				120		600		4	3	17		report	
				ATT	Additional types of training (ATT)														
3)				FA 60300 2	Final attestation														
				Preparing and defense of master thesis (PDMT)	8	240				80		160				8		PDMT	
			TOTAL MEP :		120	3600	210	510	0	320	435	2125	30	30	30	30			

¹ note:

Room of the Department	REDUCED	Name of the Department
1	AaF	Accounting, audit and Finance
2	AMO	Agribusiness management and organization
3	Right	Right
4	WRR	Water resources and reclamation
5	MU	"Machine use" named after I. V. Sakharov
6	VT	Vocational training
7	MCAM	Mechanics and construction of agricultural machinery
8	ATT	Agricultural machinery and technology
9	ITMPh	Information technology, mathematics and physics
10	ESA	Energy saving and automation
11	LRH	Land resources and cadastre
12	FRH	Forest resources and hunting
13	PPQ	Plant protection and quarantine
14	FL	Foreign language
15	KRL	Kazakh and Russian languages
16	SSA	Soil science and Agrochemistry
17	Eco	Ecology
18	FVNG	Fruit and vegetable and nut growing
19	Agr	Agronomy
20	BS	Biological safety
21	CVM	Clinical veterinary medicine
22	OSBR	Obstetrics, surgery and biotechnology of reproduction
23	MV	Microbiology and Virology
24	VSEH	Veterinary and sanitary expertise and hygiene
25	TFS	Technology and food safety
26	BPT	Beekeeping, poultry and fisheries
27	LPT	Livestock production technology
28	PMB	"Physiology, morphology and biochemistry" named after N. O. Bazanova
29	HKCPK	History of Kazakhstan and culture of the peoples of Kazakhstan
30	PhES	Physical education and sports
31	Military	Military department

**Competence of scientific and pedagogical magistracy
directions "7M09101-Veterinary Medicine"**

Description of competence	Type of competence	№ competence
Formation of students' need for knowledge and skills of a managerial nature and professionally important qualities of future specialists	PC	1
Be competent in the morphology and physiology of blood cells, the mechanism of development of blood diseases, typical changes in blood parameters in diseases of organs and systems, interpretation of the results of experimental studies	PC	2
The ability to apply the acquired theoretical knowledge and skills in professional activities, the effective use of general, special and laboratory research methods for metabolic disorders and in the organization of physiotherapy procedures for sick animals, depending on the diagnosis, and the assessment of the quality of the use of phytopreparations	PC	3
Be competent in the main issues of modern embryology and immunology, assessment of the quality of medical and preventive work with the use of modern methods of immunology	PC	4
Possess modern methods of diagnostic, therapeutic, surgical and andrological preventive measures for surgical pathologies of animals	PC	5
In questions of methodological and theoretical knowledge of diagnostics and prevention of infectious diseases of animals on the basis of modern achievements of veterinary medicine	PC	6
Ability to characterize the current situation in Kazakhstan and abroad on diseases of infectious, non-infectious etiology of animals and the ability to analyze epizootological and parasitological survey of territories and implement the results of scientific research and inventions in production and educational process		7
Have a scientific and methodological level of knowledge about scientific research, achievements in research and innovation activities, targeted scientific programs, the formation of complex research programs, the assessment of the reliability of forecasts when making decisions based on them, the design and implementation of its results.	PC	8
Ability to carry out industrial relations with various organizations, including public service bodies	PC	9
Be competent in the problems of tropical diseases imported and available in the Republic of Kazakhstan, able to independently conduct monitoring scientific studies to determine the characteristics of the spread of tropical infestations	PC	10
Ability of undergraduates to use special computer products quickly master modern computer programs; professional knowledge of computer programs under the direction of HOSP	PC	11

Link your own research experience with the global problems of new and returning infections, systematize the idea of the organization and functioning of microorganisms, methods of laboratory research for scientific, diagnostic and therapeutic measures	PC	12
Be competent in solving problematic issues of modern technology of keeping highly productive animals, in organizing feeding, assessing the impact of negative factors on the reproductive function of animals	PC	13
Be able to use modern methods of diagnostic, therapeutic, surgical and andrological preventive measures for surgical pathologies of animals	PC	14
Be competent in the epizootological and ecological aspects of the spread of zoonoses and develop a system of preventive and health measures for particularly dangerous transboundary zoonoses and in the application of modern advances in biology for diagnosis and in the issues of preventive and health measures proposed by the OIE	PC	15

4. Map of competence

Competence code	Basic competence	Results of Education\ Learning outcome
CC1	Module 1 Scientific communication, management and organization of the learning process	<ul style="list-style-type: none"> - to know the nature, structure, principles of organization and functioning of science; the relationship of scientific and philosophical thought; - general scientific terminology and terminological sublanguage of the corresponding specialty in a foreign language; bases of business correspondence within the framework of international cooperation; - formulate and solve problems arising in the course of research activities and require in-depth professional knowledge; - freely read, translate original literature on the chosen specialty with the subsequent analysis, interpretation and evaluation of the extracted information; - to own psychology of pedagogical communication, to form cognitive activity of students, identification of psychological methods and means of increase of efficiency of training, to use psychological bases and adaptation of psychodiagnostic problems of the personality, psychological consultation and to master psychology of pedagogical communication.
	History and philosophy of science Knowledge of history and philosophy of science development and basic concepts and directions of non-classical and post-non-classical stage of science development.	
	Foreign language (professional) Ability to conduct a conversation in a professional international environment in english	
	Higher School Pedagogy Ability to demonstrate broad-mindedness in matters of philosophy science and pedagogy	
	Psychology of management Ability of demonstration of knowledge in questions of philosophy science, psychology and pedagogics, finding optimal variation of psychological situation and provide administrative decisions	
CC2	2th Module Methods of biochemical studies of blood, deficiency of feed and pathology of endocrine Be competent in the study of blood parameters in diseases of organs and systems with modern methods of chemical and Toxicological analysis toxicity and cumulative properties of plant tissues, food and other additives of animal and plant origin and detection of symptoms of diseases	<ul style="list-style-type: none"> -- in matters of morphology and physiology of blood cells, etiology, mechanism of development, blood diseases, - typical changes in blood parameters in diseases of organs and systems, conducting hematological studies, analysis, - interpretation of research results; - apply the obtained theoretical knowledge and skills in professional activities, toxicodynamics and toxicokinetics of poisons and toxic substances; accounting, storage of medicinal and toxic substances;

		- detection of symptomatology in alimentary and endocrine diseases and professional diagnosis
CC3	<p>3th Module. Animal reproduction and clinical research of surgical diseases</p> <p>Be competent in solving problems of anatomy and physiology of hooves and hooves and pathology of bones and joints of the distal extremities and deep structures of the hooves, ophthalmology, dentistry and ortholaryngology of animals, modern embryology and immunology, assessing the quality of treatment and prevention using modern methods in immunology and modern veterinary surgery, evaluating the quality of treatment and prevention measures using innovative methods</p>	<ul style="list-style-type: none"> - know the problems of etiopathogenesis of pathologies of hooves and hooves, ears, eyes, pharynx, tongue and nasal cavity, as well as sinuses; - apply diagnostic and treatment methods for veterinary pathologies. Improvement of methods of treatment and prevention in surgical pathology of animals; - problems of immunological relations in the mother and fetus system, questions of phylogeny and ontogeny of animal immunity, - recommend modern methods of treatment and prevention
CC4	<p>4th Module. Innovative diagnostic methods for prevention in veterinary</p> <p>Be competent in carrying out epizootological and parasitological examination of territories and their analysis, mathematical modeling and forecasting, studying of technology and production of biopreparations in laboratory conditions, and also carrying out operations at chirurgical and obstetric-gynecological pathologies and in development of models of research works and planning of scientific researches and introduction of their results into production</p>	<ul style="list-style-type: none"> - to systematize the fundamental achievements of veterinary science; - plan modern laboratory and biotechnological equipment; - organize production work; - propose ways to improve the economic efficiency of production. - manage the operation of modern equipment and devices of domestic and foreign production; - summarize research results; - to prepare achievements of science for introduction in agricultural production
CC5	<p>5th Module. Biological bases and monitoring of invasive diseases</p> <p>To be competent in solving problems of parasitocenosis and in separate and in mixed infestations and using them to create a plan for antiparasitic activities and tropical diseases, imported and available in Kazakhstan and their decision</p>	<ul style="list-style-type: none"> - in the organization and implementation of measures to combat mixed associative animals diseases; - in the identification of mixed invasive diseases and on this basis the development of tactics to combat invasive diseases;
CC6	<p>6 th Module. Fundamentals of prevention of infectious diseases of animals and birds</p> <p>Be competent in the organization and functioning of genetic material in microorganisms and the methodology of their study.</p>	<ul style="list-style-type: none"> - to analyze features of application of methods of genetic analysis in bacteria; - link your own research expertise to the global challenges of new and returning infections; - research on the features of emergent infections as objects of genetic research

	Major Subject Cycle	
	University component	
CC7	Module 5 Project management and the methodology of scientific research	<ul style="list-style-type: none"> - in diagnosing and preventing conflicts; - in the application of basic methods and technology, prevention and resolution of conflicts; - in the use of the principles of analysis and management of organizational conflicts; - in possession of various ways to resolve conflict situations on the basis of modern technology of personnel management.
	Training of students in the system of agriculture in market conditions. It forms economic thinking, entrepreneurial abilities, the ability to find a niche market, open a business, organize and effectively manage their own enterprise. The competitiveness of the national economy depends primarily on the position of life, talent, Outlook, theoretical knowledge and practical skills, economic activity of entrepreneurs.	<ul style="list-style-type: none"> - the ability to independently acquire new knowledge using modern information technology, the ability to work in a team, lead people and obey, the ability to negotiate; - in finding and processing information, using information tools and technology, the ability to make calculations and draw conclusions;
	The graduate students knowledge and skills for a successful pedagogical activity, scientific knowledge of the formation of the veterinary medicine as science-based methods of teaching, providing theoretical knowledge and practical skills necessary for methodological work on the coverage of veterinary medicine as well as in the creation of innovative methods and techniques of projects	<ul style="list-style-type: none"> - in possession of terminology, basic norms and standards governing the activities of organizations in the field of project planning and management. - in the methodology and implementation of research and teaching activities in the field of veterinary medicine; - in teaching special new disciplines of veterinary medicine;
	Familiarization with the decision-making process, starting from the formalization of the initial problem, through the construction and solution of a mathematical model on a computer to the analysis of the decision and the formation of a management decision. Formation of skills for the construction and solution of mathematical models and analysis of these solutions on the computer. Consideration of production, financial models of tasks for the choice of management decisions.	<ul style="list-style-type: none"> - in the organization and conduct of scientific research using modern methods of mathematical modeling and analysis of technological systems. - to understand the social significance of entrepreneurial activity, to make managerial decisions and to be responsible for them; - in the use of innovative technologies in business, the search and processing of information necessary to solve professional problems; - on the basis of professional and personal development to plan and implement entrepreneurial ideas.
	Be competent in practical use of the received psychological and pedagogical knowledge in various conditions of activity and in pedagogical practice; in diagnostics and prevention of conflicts	
Competence code	Component of choice	Results of Education
CC8	Module 6 Complex methods of studying animal diseases	<ul style="list-style-type: none"> - modern methods of clinical and laboratory research of animals with

	<p>Be competent in the detection of symptoms of diseases; modern laboratory methods, rendering physiotherapy procedures to sick animals, the features of their action and the use of medicinal herbal preparations in appropriate doses for the treatment and prevention of diseases of agricultural animals</p>	<p>hypovitaminosis; methodology for recognizing the painful process in hypovitaminosis; principles and methods of modern veterinary therapy in hypovitaminosis;</p> <ul style="list-style-type: none"> - rational and effective use of physical and instrumental laboratory methods of animal research in diagnosis; - analyze the results of clinical and laboratory studies of biological material. - methods of physiotherapy used for internal non-infectious and other diseases; <p>mechanism of biological action of physical methods of treatment of sick animals</p>
CC9	<p>Module7 Problems of infectious and non-infectious pathologie</p> <p>To be competent in determining the need for medicines and preparing applications; be able to work on control and analytical instruments and equipment; evaluate the quality of pharmaceuticals, conduct planning of economic and financial activities (accounting, reporting) and pharmaceutical inspection, control and audit and identify symptoms of diseases; in laboratory methods of studying biological material, in methods of emergency care for non-infectious diseases</p>	<p>on storage and distribution of medicinal substances and pharmaceutical goods in veterinary pharmacies;</p> <ul style="list-style-type: none"> -features of the organization and management of the pharmacy; the technique of selection, packaging, preservation and transfer of pathological material for chemical-toxicological research in veterinary laboratories; - effective use of General, special and laboratory research methods; obtaining blood, urine, feces, stomach and gastric juice and analyzing them to summarize them; - to determine the level of normal and pathological condition of organs and systems on the basis of clinical and laboratory studies; - in specific conditions, develop and implement measures for the prevention of non-infectious animal diseases using non-traditional methods of treatment
CC10	<p>To be competent the solution of the problems of modern technologies of keeping high-producing animals and the methods of assessment of influence of negative factors on the reproductive function and diagnostic, therapeutic, surgical and andrological preventive measures in surgical pathologies of animals</p>	<ul style="list-style-type: none"> - prevention and treatment of ketosis, biochemical studies of blood serum samples to detect metabolic disorders. - somatic cell content in milk, introduction of early methods of pregnancy diagnostics in cows; -knowledge of aseptic and antiseptic

		methods and their application.
CC 11	<p>Module 8 Promising issues of theory and practice in veterinary medicine</p> <p>Possess modern methods of diagnostic, therapeutic, surgical and andrological measures of prevention in surgical pathologies of animals and methods of treatment for the purpose of correcting pathological losses of the body or preventing them</p>	<ul style="list-style-type: none"> - determine the causes, establish a diagnosis and carry out therapeutic and preventive measures for diseases of bones and soft tissues of animals; - understand the theoretical foundations and rules of animal infusion therapy; - analyze the results of diagnosis and treatment of bone and soft tissue tumors. - to carry out infusion therapy in surgical pathology
CC 12	<p>Be competent in the study of epizootological and environmental aspects of the spread of zoonoses and to develop a system of preventive and health measures for particularly dangerous transboundary zoonoses and in the application of modern biology for the diagnosis and prevention of infectious animal diseases</p>	<ul style="list-style-type: none"> - in the study of epizootic and environmental aspects of the spread of zoonotic diseases in urban areas, rural areas; - an effective system of preventive and curative measures against especially dangerous zoonoses. - correctly collect and analyze anamnestic data to the death of animals, - after the examination of the corpses and according to the results of the histological studies, make a complex differential pathologic-physiological diagnosis, taking into account the clinical manifestation.
CC13	<p>Module 9 Rational methods and standards in veterinary medicine</p> <p>To be competent in the legal and regulatory framework for the prevention of infectious animal diseases in the Republic of Kazakhstan, the activities of the OIE and its regional commissions, the EU and other international organizations for the prevention of infectious animal diseases, the OIE list of diseases and in the issues of biological safety in veterinary medicine, classifications of infectious microorganisms, laboratories, depending on the degree of danger.</p>	<ul style="list-style-type: none"> - know the information system on the world's animal health situation; principles of transparency and procedure for declaring diseases; OIE list of diseases, criteria for inclusion of diseases in the list; reports of the country's veterinary service submitted to the OIE on diseases, terms and content; International cooperation in the field of prevention of infectious animal diseases within the OIE, the EU and regional commissions of the OIE; - epizootic situation in the country, neighboring countries and in the world; - methods for evaluating the effectiveness of measures taken in the country and neighboring States to

		<p>prevent infectious animal diseases;</p> <ul style="list-style-type: none"> - methods for assessing the zoonotic potential and emergence of infectious animal diseases
CC14	<p>To be competent independently in carrying out scientific researches with use of modern methods on definition of biological and ecological features of parasites and in carrying out pathoanatomical diagnostics of parasitoses.</p>	<ul style="list-style-type: none"> - In problem various parasites and their solution, on conduction various methods of diagnosis, treatment and prevention; - ability self organize and conduction scientific work with modern methods on indication biological and ecological types of parasites - conduct scientific research using modern methods to determine the biological and ecological features of the parasites; - in carrying out the pathoanatomical diagnosis of parasitosis.
CC15	<p>Be competent in the organization and carrying out scientific researches with use of modern methods on application of preparations, determination of their residual action and ways of neutralization of objects of environment and mathematical modeling and forecasting of infectious diseases of animals, to study modern technologies of production of biological preparations in laboratory conditions</p>	<ul style="list-style-type: none"> - in problems of the most common parasitoses and in their solution through the competent use of antiparasitic agents; - in problems of the most widespread parasitoses and in their decision by competent use-antiparasitic actions and antiparasitic means; - to organize and conduct scientific research using modern methods of deparasitization and disinvasion.
CC16	<p>Be competent in matters of clinical examination of animals, modern methods of treatment of mycoses and mycotoxicoses in accordance with the diagnosis and the use of drugs for the treatment and prevention of clostridiosis of animals and birds.</p>	<ul style="list-style-type: none"> - to systematize the methods of laboratory research for scientific, diagnostic and therapeutic measures; - master the technique of clinical examination of animals, the introduction of drugs in accordance with the diagnosis, compare methods of diagnosis of clostridiosis of animals and birds; - to systematize the production technologies of drugs for the treatment and prophylaxis of clostridiosis in animals and birds.
CC17	<p>Be competent of occurrence and course of infectious process; regularities of formation of resistance of an organism of animals to bacterial, viral diseases; biological properties of separate types of bacteria, viruses; causative agents of infectious diseases and methods of laboratory diagnostics, and also application of</p>	<ul style="list-style-type: none"> - indication and identification of bacteria, viruses-causative agents of infectious diseases of animals; correct application and rational use of vaccines, serums and diagnosticums; to carry out medical and preventive measures;

	bio-preparations for specific prophylaxis of infectious diseases and formation of antibacterial immunity.	- principles of safety of work with pathological material, laboratory methods of identification of enterobacteria, viral etiology in pathological material; basic technologies of information transformation:
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5. Summary table showing the amount of loans disbursed by educational program:

Course of study	Semester	Number of subjects studied				Number of academic credits					Totalo	In total in academical hours	Quantity	
		CS		MS		Theoretical training	Teaching practice	Research practice	NIRM	Final certification			Exam	Report
		UC	CC	UC	CC									
I	1	3	3			28			2		30	900	6	1
	2	1		2	1	22	3	3	2		30	900	4	2
II	3			2	3	25		3	2		30	900	5	2
	4							4	18	8	30	900		2
Total		4	3	4	4	75	3	10	24	8	120	3600	15	7

Information about disciplines

Codes competence	Name of discipline	Brief description of the discipline (30-50 words)	Number of credits	Emerging competencies (codes)
CC1	History and philosophy of science	Forms a culture of scientific thinking in students, develops analytical skills and research skills, provides theoretical and practical knowledge necessary for a future scientist. It is important in an era of increasing urgent need for science and scientists. Introduces the phenomenon of science as a subject of special philosophical analysis into the problematics, forms knowledge about the history and theory of science; about the laws of development of science and the structure of scientific knowledge; about science as a profession and social institution; on the methods of conducting scientific research; on the role of science in the development of society.	4	EC1
	Foreign language (professional)	The main goal of the discipline is the systemic deepening of communicative competence within the framework of international standards of foreign language education based on the further development of skills and abilities of active command of English in the professional activities of the future Master of Science. Development of master's skills: - reading literature in English in the specialty for receiving and transmitting scientific information; - registration of the extracted information in the form of translations, annotations, abstracts; - conducting conversations in English on topics related to the specialty and scientific work of the undergraduate.	4	EC 1
	Higher School Pedagogy	The course is obligatory for all specialties of the magistracy. This course examines pedagogical science and its place in the system of human sciences, the modern paradigm of education, the system of higher education in Kazakhstan, education and the formation of the personality of	5	EC 1

		a specialist, and management in education.		
	Managerial Psychology	Discipline examines the subject, nature, tasks and structure of management psychology, methods of psychological research and basic approaches to its study. Examines the psychology of the subject of management, the psychology of cognitive activity, perceptual, mnemonic, thought processes in management. The course forms ideas about etiquette in the activity of a modern business person, communicative competence of a manager, emotional and volitional states in management activities and ability to manage activities.	4	EC 1
CC2	Clinical hematology	Discipline studies with blood cell morphology and physiology, development of blood disorders, changes in blood volume can result in various clinical signs. Conducts physiological, morphological and cytochemical blood tests in acute leukemia, myeloproliferative syndrome, agranulocytosis. Hematological studies of blood diseases, interpretation of the results of hemogram and myelogram	5	EC 2, EC 3,
	Animal food poisoning	Knowledge of the physicochemical properties of potential chemical alternatives and mechanism of toxic action through organisms. Investigates the toxicity and cumulative properties of plant tissues, food and other additives of animal and vegetable origin using modern methods of chemical and toxicological analysis, and organizes measures to prevent animal poisoning	5	EC4, EC5,
	Alimentary and endocrine diseases	Studies a general characteristic of alimentary and endocrine diseases, and alimentary, endocrine and enzootic diseases. Forms skills of determination of the clinical status of herd, a laboratory blood analysis, urine, milk, assessment of a condition of a metabolism and health of animals for use of modern approach to diagnostic methods	5	EC4, EC 6
CC3	Breast pathology	Studies the specific features of lactogenesis, etiology and pathogenesis of	5	EC2, EC3

		dysfunction, abnormalities, pathologies of the mammary gland of an inflammatory and non-inflammatory nature in females of agricultural and other animal species, sanitary and hygienic requirements for the care of dairy equipment for milking. Develops skills in using modern diagnostic methods (clinical, laboratory, express methods, X-ray, ultrasound and pathomorphological), treatment and prevention of breast diseases.		
	Clinical orthopedics	Considers anatomy and physiology of hoofs and hooves and pathology of bones and joints of animals. X-ray diagnosis of distal limb deficiencies and ultrasonography distal limb deficiencies. Solution of problems of modern veterinary orthopedics, assessment of quality of treatment and prevention actions with use of the innovation methods	5	EC4, EC8
	Dentistry and otolaryngology	Studies of anatomy and physiology of an eye, classification of diseases of eyes, pathologies of teeth and also pathologies of an auricle and an external ear. Forms skills the diagnostician and holding medical preventive actions diseases of eyes, ears, throat, tongue and a nasal cavity	5	EC4, EC8
CC4	Modern problems of veterinary medicine	Studies the current situation in Kazakhstan and abroad on categories of infectious diseases tend. Conducting epidemiological and parasitological examination of environment and their analysis, mathematical modeling and forecasting, studying technology and manufacturing biological products in laboratory conditions, as well as conducting operations in surgical and obstetric-gynecological pathologies	5	EC6, EC7
	Diagnosis and prevention of infectious animal diseases based on modern achievements of biology	Considers the achievements of the science of genetics used in the development of new biological technologies for diagnosis, treatment and prevention and determination of the plasmid profile, restriction analysis, DNA hybridization, PCR, sequencing, etc. Applying modern biological drugs for prevention of infectious diseases of animals	5	EC6, EC7

	Little-known animal infections	Explores a little-known problem of infections in Pets, its causes and spread of a particular disease, the intensity of the epizootic situation and preconditions of occurrence of a disease in specific areas, the basic ways of prevention and control of each infectious disease, modern classification, nosological and epidemiological methods, the development of rational elimination of the epizootic.	5	EC 6, EC 7, EC 9
CC5	Biogeoparasitoceno- sis	Studies ecological relationship of organisms in the nature, evolution of parasitism, adaptations for their parasitic way of life and value of parasitocenosis of animals, birds, fishes, and bees. Knowledge of models for the spread of diseases, carrying out diagnosis, treatment and prevention of parasitocenosis	5	EC6, EC7
	Ecological and tropical parasitology	Investigates origin and distribution of parasitism in the tropical and subtropical countries, their climatic conditions, tropical zoonotic parasites. Acquaints with an epidemic chain and ways of transfer of tropical diseases of animals and birds. Forms necessary practical skills on prevention and prevention of tropical parasites	5	EC6, EC7
	Monitoring and forecasting of invasive diseases	Study predictions of altered parasite dynamics in a rapidly changing world. Transitions from a free-living existence to a parasitic one probably populations. Study the changes in temperature and precipitation, grazing method, and regular deworming. Improved water, sanitation and hygiene could prevent parasitic diseases	5	EC6, EC7, EC9
CC6	Genetics of microorganisms	Studies microorganisms as genetics is the term introduced for the study of genes in organisms, inheritance and variability genetics is the study of the. Uses genetic methods for research highly productive strains and fundamental approaches have opened up new vistas in the diagnosis, treatment and prevention of diseases.	5	EC2, EC6

	Microbiology of new and recurring infections	Emerging infectious diseases are infections that transmission, and mechanisms of microbial maintenance and therefore the potential risk of spread to republic. he application of genetic techniques for detecting and typing of bacteria and systematization of organisms on the basis of their phylogenesis	5	EC6, EC7
	Mycoses and mycotoxicosis	It considers representatives of the fungi kingdom, classification and construction of the phylogenetic system of fungi, the origin of pathogens of mycoses and mycotoxicoses of animals and birds. Systematizes laboratory research methods for conducting scientific, diagnostic measures. Examination of animals using modern methods of treating mycoses and mycotoxicoses.	5	EC6, EC7
Cycle of specialized disciplines /University component				
CC7	Project management in the field of entrepreneurship	The history of the development of project management methods; methodological approaches to decision-making on the development of a project concept, its structuring and evaluation; mastering the role of the project manager at various stages of the project life cycle; introduces the organizational forms of project management and methods of their development and optimization. Training of students in the system of the sphere of the agro-industrial complex in market conditions. He forms economic thinking, entrepreneurial abilities, the ability to find your market niche, open your own business, organize and effectively manage your own enterprise	7	EC 1
	Methodology scientific research in veterinary medicine	Knowledge and abilities for successful pedagogical activity, scientific knowledge of veterinary medicine, as sciences on the basis of a technique of teaching discipline, with ensuring the theoretical knowledge and practical skills necessary for methodological work and also in creation of innovative methods and ways of projects	5	EC2, EC7
	Modeling of	Familiarizes with the decision-making process, starting from the formalization of the initial problem,	4	EC 1

	business solutions	through the construction and solution of a mathematical model on a computer to the analysis of the solution and the formation of a management decision. Considers production, transport and financial models of tasks for choosing management solutions. Develops skills for building and solving mathematical models and analyzing these solutions on a computer.		
	Conflictology	The discipline considers the main categories of conflictology, typology of the conflicts, technologies of management of the conflicts. Studies the theory of behavior of the personality in the conflict, technologies of effective communication and rational behavior in the conflict. Forms idea of psychology of negotiation process on resolution of conflicts	4	EC 1
CC8	Hypovitaminoses	Is engaged in studying of a general characteristic of vitamins, their biological and physiological role, classification of vitamins. Acquaints with disbolism at avitaminosis and arising at a lack of vitamins. Forms skills of use of modern diagnostic methods and holding treatment and prevention.	6	EC4, EC6
	Physiotherapy with the basics of phytology	Studies of the diagnostic and therapeutic equipment in veterinary science, physiotherapeutic procedures, advantages and shortcomings and also side effects of physiotherapeutic methods of treatment. Forms skills of the organization of work of physiotherapeutic office, classification of herbs by therapeutic action and determination of authenticity of medicinal vegetable raw materials.	6	EC4, EC5
CC9	Organization and management of veterinary pharmacy with the basics of pharmacology	Studies development, formation and the main aspects of management of pharmaceutical business, bases of planning of economic and financial activity of drugstores, bases of marketing of veterinary medicines and pharmaceutical inspection, control and audit. Forms skills of supply of drugstores and treatment and	6	EC5, EC6

		prevention facilities, storages of medicines and products		
	Non-traditional methods of treatment of non-infectious animal diseases	Application of non-traditional methods of treatment to animals, patients with cardiovascular and digestive systems. Treatment of sick animals with diseases of the respiratory, urinary, nervous and blood systems with medicinal plants. Treatment of sick animals with metabolic diseases by natural forces of nature.	5	EC4, EC5
CC10	Methods for assessing the impact of negative factors on the reproductive function of highly productive cattle	Investigates associative communication of indicators of BCS on a lactation and the express diagnostics, prevention and treatment of a cetosis, creates skills of implementation of early methods of diagnostics of stylishness at cattle and cattle taking into account results of growth of prepotent follicles.	6	EC3, EC8
	Reproduction of the herd	Studies the peculiarities of reproduction of horses, cattle, sheep, goats and pigs, the preparation of repair young, the timing of their use, the causes contributing to the manifestation of infertility, the organization of insemination, the peculiarities of the course of childbirth and the postpartum period. Develops skills in using modern diagnostic methods (clinical, laboratory, X-ray, ultrasound), treatment and prevention of diseases of the reproductive organs in animals.	6	EC 3, EC 8
CC11	Tumor diseases of bones and soft tissues	Considers classification of tumors of domestic animals, a stage of tumors. Performing X-ray diagnostics of the tumoral pathologies which are followed by chemotherapy at the main forms of tumors in bones: an osteosarcoma, a chondrosarcoma, a tumor from elements of marrow, a giant-cell tumor, metastatic damage of bones	6	EC2, EC8
	Infusion therapy of surgical diseases of animals	Studies methods of infusion therapy, infusions to various types of animals, drugs for infusion therapy and indications, contraindications, tools, equipment for infusion therapy. Considers calculations of doses of	5	EC3, EC6

		water-salt metabolism, regulating acid-base metabolism, osmодиuretic, plasma-substituting infusion solutions and for parenteral nutrition		
CC12	Zoonotic Infections	Considers the current problems of zoonotic infections common to animals and humans, the role of international trade in animals and animal products, the impact of measures to transform nature on foci, especially the spread of zoonoses in urban areas. Forms the skills of using modern classification, nosological and epidemiological methods	6	EC 6, EC 7, EC 9
	Pathomorphology of zoonotic infections	Considers the pathomorphological diagnosis of zoonotic infections. Investigates slow infections caused by viruses, zoonotic infections of unknown etiology. Forms the skills of the study of corpses and, based on the results of histological studies, make a complex differential pathomorphological diagnosis taking into account the clinical manifestation	6	EC 6, EC 7
CC13	National and international systems for the prevention of infectious diseases of animals	Examines the nature of infectious diseases and ways of distribution, the international system of antiepidemic measures. Assessing the potential threats of the introduction of pathogens of little known diseases into the country and organizing their preventive measures (dysfunctional rootkit, core of the epidemic focus, threatened area)	6	EC 7, EC 9
	Epizootological geography and international standards of Biosafety in veterinary	It examines the indicators and stages of epizootological nosogeography, methods for studying the geographical distribution of infectious diseases, epizootological zoning of the territory and the prerequisites for dividing the territory into zones and the prerequisites for organizing compartments. Develops skills to apply veterinary requirements when importing animals, raw materials of animal origin and other goods controlled by the state veterinary supervision when moving across the state border of the Republic of Kazakhstan to the territory of the	5	EC 7, EC 9

		Customs Union member States		
CC14	Biological basis of diagnosis, treatment and prevention of parasitic diseases	Studies biological features of trematodes, cestodes and nematodes, biological bases of diagnostics and prevention of zoonotic parasites. Investigates parasitological diagnostic methods for ticks, mites, and protozoans. Determination of biological and ecological features of parasites	6	EC6, EC7
	Differential pathomorphological diagnosis of parasites	Pathomorphological diagnosis of protozoa, trematodes, nematodes, cestodes, acanthocephales, ticks, and arthropods. Determine the biological and environmental characteristics of parasites. Forms skills in pathological diagnosis of parasites. Conduct scientific research using modern methods to determine the biological and environmental characteristics of parasites. Forms skills in pathological diagnosis of parasites	6	EC6, EC7
CC15	Modern antiparasitic drugs	Studies the most dangerous parasitoses for animals, birds and humans and the requirements for modern antiparasitic drugs. It substantiates the use of modern environmentally friendly, effective, safe for humans, animals and the environment antiparasitic agents. Investigates the residual effects of the environment from the remnants of antiparasitic agents	6	EC6, EC7
	Study of environmental objects and animals by parasitological methods	Introduces the system of the parasite and its host, its ecological relations, information about the epizootological spread and its outbreaks. Introduces the peculiarities of the fight against invasive diseases and scientifically based measures for their diagnosis, treatment and prevention	5	EC6, EC7
CC16	Clostridiosis of animals and birds	Considers the factors contributing to the transition of gastrointestinal clostridia. Diagnosis, treatment and prevention of clostridiosis of animals. Studies causes clostridiosis of animals and birds in Kazakhstan. Forms the skills of using drugs for the treatment and prevention of clostridiosis in animals and birds	6	EC 6, EC 7

	Enteroinfection of farm animals and birds of bacterial etiology	Studies various groups of conditionally pathogenic microorganisms which pathogens of enteroinfections of animals and birds of bacterial etiology, their morphology, systematics, physiology, resistance to environmental factors and antimicrobial agents. Study modern approaches to the correction of immunity in young animals. Uses biological products for prevention of infectious diseases	6	EC 6, EC 7
CC17	Enteroinfection of farm animals and birds of viral etiology	It examines the occurrence and course of the infectious process, the peculiarities of the pathogenesis of enteroinfections, the patterns of formation of macroorganism resistance to infectious diseases. Investigates the biological properties of certain types of enteroviruses. Forms modern approaches to the correction of immunity in young animals	6	EC 6, EC 7
	Enteropatii immunoprophylaxis of farm animals and birds	It examines the knowledge of a complex set of physiological protective reactions that determine the relative constancy of the internal environment of the macroorganism, prevent the development of the infectious process and have the ability to restore impaired functions of the body. The concept of immunity, types of immunity, immunodiagnostics, traditional and modern diagnostic methods, questions of immunoprophylaxis, the concept of seroprophylaxis and specific prevention of enteroinfections of animals and birds	5	EC 6, EC 7

Appendix to the EP

Appendix 1

Practice bases of the educational program «Veterinary medicine»

№	The name of the companies, enterprises, organizations	Contacts, phone number, e-mail
1	State Institution "Almaty Regional Territorial Inspection" KGI AIC of the Ministry of Agriculture of the Republic of Kazakhstan	8(7282)268-337
2	«Kazakh Scientific Research Veterinary Institute» LLP	87272337271 kaznivialmaty@mail.ru
3	LLP RPE «Antigen»	8(727) 264 26 29
4	LLP «EQUI LAB»	376-27-14 376-27-07 87772732737
5	Kazakh Cynologofelinological Center LLP Near Lukomorye"	87272918436
6	Almaty branch of the RSE at the PHV "National Reference Center for Veterinary Medicine" KVKiN of the Ministry of Agriculture of the Republic of Kazakhstan	8(727)2339212 rgp_nrcv@nrcv.ru
7	Almaty regional branch of RSE on PVC "Repulbicans veterinary laboratory" VCSK MA RK	8(727)2792859
8	«Baiserke-Agro» LLP	Алматинская область, Илийский район, с.Байсерке ул.Кунаева, 1. Тел.:87019916120, 87018813379 e-mail: bajserke-agro.all.biz
9	«Amiran-Agro» LLP	Алматинская обл., Талгарский р/н. Тел.:8(72774)42301, факс:8(727)3074822 e-mail: amiran_almaty@mail.ru

REVIEW
of the educational program "7M09101- Veterinary medicine" of the
master's degree in scientific and pedagogical direction, developed by the NAO
"Kazakh National Agrarian Research University"

The reviewed educational program 7M09101-"Veterinary Medicine" was developed on the basis of the state general education standard of higher and postgraduate education, approved by Order No. 2 of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022. Order No. 563 of the Minister of Education and Science of the Republic of Kazakhstan dated 10/12/2018, pedagogy and professional standard "Breeding activity in animal husbandry", Order No. 263 dated 12/26/2019

The educational program allows undergraduates to conduct research taking into account the specifics of the specialty "7m09101 - Veterinary Medicine" and in accordance with the specific needs of veterinary medicine, focused on the final result.

The reviewed educational program is based on a competency-based approach. The program takes into account the continuity and continuity of the training of masters of veterinary Sciences, who, on the one hand, can adapt to changing working conditions, and on the other -continue professional growth and education in doctoral studies, which meets modern training requirements throughout the entire period.

This approach to master's degree training gives each undergraduate the opportunity to form his own educational trajectory, which ensures the formation of his own professional growth and career. One of the advantages of the peer-reviewed educational program is to take into account the requirements of employers in the formation of elective modules of the profiling cycle of disciplines.

- The structure of the educational program includes the following components:
 - Name of the educational program;
 - the level of the educational program;
 - passport of the educational program;
 - the content of the educational program within the types of modules, indicating in the context of each module the competencies being formed, the volume in Kazakhstani loans and ECTS loans, the period of study, the module components (code and name of the module components (disciplines, practices, etc.),
 - university components of the database and PD, belonging to a mandatory component or component of choice, the number of credits and the form of control over the relative each component of the module);

According to the educational program "7M09101- Veterinary medicine", the following types of professional activities can be performed:

- determination of the level of normal and pathological condition of organs and systems based on clinical and laboratory studies;

- conducting research work to develop non-traditional methods of treating internal non-infectious animal diseases;
- conducting research work to develop diagnostic tools for infectious and invasive animal diseases;
- conducting research work to develop biological agents for the prevention of infectious and invasive animal diseases.
 - study of modern methods of teaching veterinary disciplines;
 - development of scientifically based methods of professional development of veterinary workers at all levels.

Thus, the peer-reviewed educational program "7M09101- Veterinary Medicine", developed by the Kazakh National Agrarian Research University, meets the requirements of the state general education standard of higher education of the Republic of Kazakhstan and contributes to the formation of professional competencies and provides training of scientific personnel in demand both in the Republic of Kazakhstan and in the international scientific and educational space.

General Director of «Kazakh Scientific
Research Veterinary Institute» LLP



M. Kassenov

«Қазақ ғылыми-зерттеу ветеринария институты» ЖШС Бас директоры М.Касенов: «7М09101-Ветеринариялық медицина» білім беру бағдарламасында жалпы білім беру пәндер циклы, базалық және элективтік және кәсіптендіру пәндерін қамтитын 9 модульдерге енгізілген. Кәсіптендіру пәндерін қалыптастыру кезінде жұмыс берушілердің талаптары қазіргі кездегі ХЭБ талаптарына сәйкестендірілуі қажет, осы бағытта кәсіптендірудің негізгі пәндері жоғары оқу орнының компоненттеріне ауыстырылған, сонымен қатар білім беру бағдарламасына келесі өзгерістерді енгізу:

- Базалық циклының таңдау компонентіне «Жануарлардың аз кездесетін аурулары» 5 кредит, «Сүт бездерінің патологиялары» пәнін 5 кредит көлемінде;

- Кәсіптендіру циклының таңдау компонентіне «Инновациялық әзірленімдер және ветеринариядағы биоқауіпсіздіктің Халықаралық стандарттары» 5 кредит көлемінде қосу керектігін айтты.

Профессорлар Н.Н.Ахметсадықов, М.Н.Джуланов, Н.А.Заманбеков 7М09101 - ветеринариялық медицина мамандығын бітірушінің білімін және біліктілігін қалыптастыру үшін «Қазақ ұлттық аграрлық университеті» коммерциялық емес акционерлік қоғамының дайындаған негізгі білім бағдарламасы Қазақстан Республикасының жоғары білім мемлекеттік жалпыға білім беру стандартының негізгі талаптарына сай келетінін және жұмыс берушілердің ұсынға пәндері, маман дайындауға практикалық тұрғыдан қажет екендігі айтылды. Бұл пәндерді факультеттің оқу-әдістемелік комиссиясына ұсынатындықтарын білдірді.

ШЕШІМ ҚАБЫЛДАНДЫ:

1. Базалық циклының таңдау компонентіне 1 курстың 1 семестріне «Жануарлардың аз кездесетін аурулары» пәні 5 кредит, «Сүт бездерінің патологиялары» пәні 5 кредит көлемінде ұсынылды.

2. Кәсіптендіру циклының таңдау компонентіне «Инновациялық әзірленімдер және ветеринариядағы биоқауіпсіздіктің Халықаралық стандарттары» пәні 2 курстың 1 семестріне 5 кредит көлемінде ұсынылды.

3. 2024 – 2026 оқу жылдарына арналған білім беру бағдарламасы «Биологиялық қауіпсіздік» кафедрасының кенейтілген отырысында қаралды, факультеттің академиялық комитетінде қарастырылуға ұсынылды.

4. Бұл ұсыныстар бір ауыздан мақұлданды.

Төрайға



А.М.Мусоев

Хатшы

Г.Н.Утебаева

Ветеринария факультеті
Академиялық комитет мәжілісінің
№ 5 хаттамасының көшірмесі

Алматы қ.

«25» қаңтар 2024 ж.

ҚАТЫСҚАҢДАР:

Төраға - Қойбағаров Қ.У.

Хатшы: Туржигитова Ш.Б.

Комиссия мүшелері: в.ғ.к., профессор Қорабаев Е.М., в.ғ.к., профессор Жумагельдиев А.А., в.ғ.к., профессор Қойбағаров Қ.У., б.ғ.к., профессор Турбеков О.Т., профессор Жумагельдиев А.А., в.ғ.к., профессор Омарбекова Ү.Ж., в.ғ.к., қауымдастырылған профессор Мусоев PhD, қауымдастырылған профессор Баймурзаева М.С., PhD, аға оқытушы Ергумарова М.О., қауымдастырылған профессор Туржигитова Ш.Б., PhD, қауымдастырылған профессорлар Бименова Ж.Ж., Усманғалиева С.С.

КҮН ТӘРТІБІ

1. 2024 – 2026 оқу жылдарына арналған «7М09101- Ветеринариялық медицина» білім беру бағдарламасын талқылау

ТЫҢДАЛДЫ: АК төрағасы Қойбағаров Қ.У. 2024 – 2026 оқу жылдарына арналған мемлекеттік, орыс және ағылшын тілдерінде дайындалған «7М09101- Ветеринариялық медицина» білім беру бағдарламалары факультеттің кафедраларында талқыланып, жұмыс берушілермен ұсынылған өзгерістер енгізілгенін айта келе, талдауды ұсынды.

СӨЗ СӨЙЛЕГЕНДЕР Білім беру бағдарламасына жауапты У.Ж.Омарбекова сөз алып, жаңа классификаторға сәйкес 7М091-ветеринария бағыты бойынша енгізілген «7М09101- Ветеринариялық медицина» оқыту бағдарламасында білім алушы, базалық жоғары оқу орнының және кәсіптендіру пәндері бойынша теоретикалық оқытудың 120 кредит, педагогикалық және зерттеу тәжірибелері мен докторанттың ғылыми-зерттеу жұмыстарынан және қорытынды аттестаттау кредиттерінен құралатынын атады. Білім беру бағдарламасының мақсаты еңбек нарығында бәсекеге қабілетті кәсіби, мәдениеті жоғары, іргелі білімі бар, әдіснамалық және зерттеушілік даярлықтан өткен ғылыми дәрежесін алуға дайын ветеринария мамандарын даярлау.

Жұмыс берушілермен ұсынылған жаңа пәндер өндіріс қажеттіліген туындаған. Ветеринарлық ғылыми мен тәжірибиедегі негізгі жетістіктерін меңгеру, зерттеулер жүргізу үшін тәжірибиелік міндеттерді шешу және оқуға қабілетті, білікті мамандарды дайындау білім беру бағдарламаларының негізінде жүзеге асырылады.

Осыған байланысты білім алушының кәсіби бағытта өсуін және лауазымын қалыптастыруды қамтамасыз ету үшін заманауи пәндері оқытуды қажет етеді. Базалық және кәсіптік цикл пәндерін қалыптастыруда жұмыс берушілердің маманға қоятын талаптарын ескеру қажеттігін айтты және ұсынылған пәндерді таныстырып өтті.

АК мүшесі, профессор Турбеков О.Т. сөз алып, бүгінгі жұмыс нарығына және халықаралық талаптарға сәйкес жұмыс берушілердің маманға қоятын талаптарын қанағаттандыру үшін ғылыми-зерттеу жүргізу базаларын кеңейту жұмыс берушілердің тарапынан ұсынылатын айтты.

PhD, қауымдас профессор Мусоев А.М., Махмутов А.К. жұмыс берушілердің тарапынан ұсынылған пәндерді 1 курстың 1 семестріне базалық циклының таңдау компонентіне «Жануарлардың аз кездесетін аурулары» 5 кредит, «Сүт бездерінің патологиялары» пәні 5 кредит және кәсіптендіру циклының таңдау компонентіне

«Инновациялық әзірленімдер және ветеринариядағы биоқауіпсіздіктің Халықаралық стандарттары» 5 кредит көлемінде қосу керектігін айтты.

ШЕШТІ:

1. Базалық циклының таңдау компонентіне 1 курстың 1 семестріне «Жануарлардың аз кездесетін аурулары» пәні 5 кредит, «Сүт бездерінің патологиялары» пәні 5 кредит көлемінде ұсынылды.

2. Кәсіптендіру циклының таңдау компонентіне «Инновациялық әзірленімдер және ветеринариядағы биоқауіпсіздіктің Халықаралық стандарттары» пәні 2 курстың 1 семестріне 5 кредит көлемінде ұсынылды.

3. Бұл ұсыныстар бір ауыздан мақұлданды.

Төраға  Қойбағаров Қ.У.

Хатшы:  Туржигитова Ш.Б.

