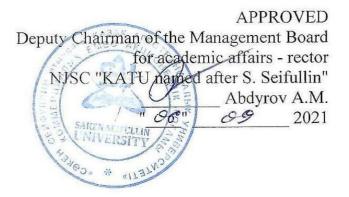
Ministry of Agriculture of the Republic of Kazakhstan

Kazakh Agrotechnical Research University named after. S.Seifullin

Considered at a meeting of the Academic Council of the University Protocol No. $\underline{16}$ from " $\underline{24}$ " <u>05</u> 2021



EDUCATIONAL PROGRAM "6B09102-Food safety"

Code and classification of field of education: 6B09 Veterinary Code and classification of areas of training: 6B091 Veterinary Code in the International Standard Classification of Education: 0941 Awarded degree/qualification: Bachelor of Veterinary Science in educational program 6B09102 - "Food Safety "

Duration of study: 5 years

Astana 2023

Authors' team:

Full name - academic degree, title, position, place of work

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The team of authors was approved by order of JSC "KATRU named after S.

Seifullin" No. 6____ dated "_____ O2___ 2013

Educational program "Food Safety"

reviewed at the meeting of the Department of Veterinary Sanitation, protocol No. 15 dated April 29, 2023, approved by the Council of the Faculty of Veterinary and Livestock Technology, protocol No. 09 dated May 4, 2023.

Dean of the Faculty of Veterinary and Livestock Technology Doctor of Veterinary Sciences

CAST - Abdrakhmanov S.K.

Head of the Department of Veterinary Sanitation

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1 Educational passport programs

1.1 The purpose of educational programs:

The main goal of the educational program "Food Safety" is to train highly qualified specialists in the area of ensuring biological and food safety, as well as food quality control, which is currently relevant and a priority. In this regard, the content of the educational program is aimed at obtaining knowledge and practical skills for carrying out veterinary and sanitary examination of livestock products in the conditions of the Eurasian Economic Union and accession to the WTO, as well as in accordance with the requirements and recommendations of international veterinary organizations (OIE, FAO, WHO, etc.).

The ultimate goal of the educational program "Food Safety" presupposes a clear orientation to the future, which is manifested in the ability to build one's education taking into account success in personal and professional activities. This program is designed taking into account the requirements of potential employers who need specialists to work in laboratories for veterinary and sanitary examination of food products.

Graduates will be able to monitor the quality and safety of meat and meat products, milk and dairy products, fish and fish products, eggs, honey, raw materials of animal origin and individual plant products, using organoleptic, microbiological, physicochemical, biochemical, toxicological, radiological, histological, ELISA methods, ICA, PCR, HPLC and other studies.

1.2. Learning outcomes

RE 1. Describe and connect knowledge in the field of general educational disciplines, know general concepts about legal and anti-corruption culture, determine the importance of the principles and culture of academic integrity for the formation of a competent individual with high thinking potential, and also extract modern ideas in the information structure in the field of professional activity.

RE 2. Formulate zoological taxonomy, determine the anatomical and morphological features of the structure of organs and body systems of animals, understand the essence of physiological and biochemical processes in the body of animals, master methods of microscopic study of cells, tissues and organ systems.

RE 3. Know Latin grammar and the basics of Latin veterinary terminology, a professional foreign language for written and oral information exchange.

RE 4. Explain the patterns of inheritance of changing characteristics of living organisms, master the skills of biometric processing of primary material, carry out a sanitary and hygienic assessment of the system of keeping, feeding and watering animals and birds, determine the chemical composition and zootechnical indicators of feed, organize standardized feeding of animals.

RE 5. Understand the basic mechanisms of pharmacodynamic effects caused by drugs and know the principles of dosing of veterinary drugs. Know toxicity testing methods, identify causes and provide first aid for poisoning of farm animals. Know the pathological processes and changes in the organs and systems of the body during diseases, methodically correctly conduct autopsies of animal corpses.

RE 6. Understand the epizootic process, know the systematics, genetics, morphology and physiology of pathogens of infectious and viral diseases , make a diagnosis, conduct allergic and clinical , epizootological examinations, vaccinate animals , develop an action plan for infectious animal diseases.

RE 7. Know the rules for conducting veterinary and sanitary control during the production, transportation, storage and sale of products and raw materials of animal origin, management and legislative regulation in veterinary medicine, methods for determining economic damage and the economic efficiency of veterinary measures.

RE 8. Interpret the basic laws of zoology, systematization of species of the animal world, apply the main groups of antiparasitic drugs to treat sick animals, birds, fish and evaluate their quality and effectiveness.

RE 9. Know the theoretical and practical foundations of veterinary radiobiology, work with dosimetric instruments, acquire skills in laboratory, clinical diagnostics, clinical examination, therapeutic techniques, carry out therapeutic and preventive measures for surgical, obstetric-gynecological and internal diseases of animals.

RE 10. Master the rules of veterinary care for slaughter animals, technology and hygiene in the production of products of animal origin, acquire the skills of veterinary and sanitary examination to assess the quality and safety of livestock products at each stage of production, as well as veterinary forensic examination.

RE 11. Be able to carry out veterinary and sanitary control at the border and transport, at meat and dairy enterprises, carry out quality control of meat and dairy products, as well as crop, fish farming and beekeeping products, know the rules for sanitary assessment of the quality and safety of products when contaminated with foreign substances.

RE 12. Consider issues of organization and production of livestock products on farms of various forms of ownership, master methods for determining the productivity of farm animals.

RE 13. Possess the skills of conducting epizootological examination and monitoring, organizing preventive and anti-epizootic measures, know the patterns of manifestation of transboundary and exotic animal diseases

RE 14. Know theoretical and practical knowledge of hormones, enzymes, proteins, nucleotides and nucleosides, the structures of DNA, RNA, biosynthesis of nucleic acids, AminoacyltRNA synthetase, have the skills to solve chemical problems, draw up reaction equations, determine the main ways of practical use of organic compounds in agriculture farm.

2. General characteristics of the educational program (relevance, features, competitive advantages, uniqueness, stakeholders and etc.)

The educational program "Food Safety" is compiled in accordance with the National Qualifications Framework and professional standards, consistent with the Dublin descriptors and the European Qualifications Framework. The educational program contains theoretical training, including the study of cycles of general education, basic and major disciplines; additional types of training, professional practice, physical education, etc. The volume of the educational program is 300 credits, including 240 credits of theoretical training, 28 credits of professional practice, 8 credits of physical education and 12 credits of writing a thesis or final certification.

The relevance of the developed educational program (EP) lies in the fact that it is harmonized with the requirements of the standard curriculum and the competencies of a first-day graduate (veterinary specialist) by the World Health Organization and FAO, which makes it possible to integrate the EP into the international veterinary educational space.

The peculiarity of the developed EP is that in terms of structure, logic of training and discipline components, it is 60-70 % with educational work programs with the world's leading universities in the field of veterinary education (J. Liebig University of Giessen, University of California Davis, Toulouse National veterinary school), which will contribute to the professional mobility of students.

The main stakeholders are: regional territorial inspections of the KVKN of the Republic of Kazakhstan, the Republican Veterinary Laboratory of the RSE on PCV, the Republican State Institution Republican Anti-Epizootic Squad, LLP Astana aulsharashylygy onimderi zerthanasy (TD "Alem", TD "Eurasia", KR "Shapagat", TD "Artem"), National veterinary reference center, as well as veterinary clinics located in the city of Astana.

3 Competency model (portrait) graduate

3.1 Professional areas activities

- veterinary laboratories (food departments security);
- laboratory of veterinary and sanitary examination of food markets;
- in-house production control laboratories of meat and dairy enterprises industry;
- enterprises for the production, processing, storage, sale of food products and animal

feed origin;

- institutions of the state veterinary service, at veterinary posts on the border and transport, at checkpointspoints;

- enterprises for the production and control of biological preparations and biologically active substances, veterinary pharmacies;

- research institutes, public and private veterinary organizations profile;
- slaughterhouses, vehicles for transporting animals, premises for keeping animals.
- all types of agricultural business entities production;

3.2 Types of professional activities

Types of professional activities are:

- production and technological;

- organizational and managerial;
- experimental research;
- scientific research;
- design;
- educational;

- military veterinary service;

3.3 General educational competencies

Disciplines of the mandatory component of the GED cycle:

- aimed at developing the worldview, civic and moral positions of a future specialist, competitive on the basis of mastery of information and communication technologies.

- form skills of self-development and education throughout life;

- upon completion of studying the compulsory disciplines of the GED cycle, the student is able to:

- evaluate the surrounding reality on the basis of ideological positions formed by knowledge of the fundamentals of philosophy.

- justify your own assessment of everything that happens in the social and industrial spheres;

The UC and (or) CC disciplines of the GED cycle consist of at least 5 academic credits, which are aimed at developing students' competencies in the field of economics and law, the basis of anti-corruption culture, ecology and life safety, as well as entrepreneurship skills and scientific research methods.

Descriptors reflect learning outcomes that characterize students' abilities:

1) demonstrate knowledge and understanding of the field of study based on advanced knowledge;

2) apply knowledge and understanding at a professional level, formulate arguments and solve problems in the field of study;

3) collect and interpret information to form judgments, taking into account social, ethical and scientific considerations;

4) apply theoretical and practical knowledge to solve educational, practical and professional problems in the field of study;

5) learning skills necessary for independent continuation of further education in the field of study;

6) know the methods of scientific research and academic writing and apply them to the field of study;

7) apply knowledge and understanding of facts, phenomena, theories and complex dependencies between them in the studied area;

8) understand the importance of the principles and culture of academic integrity.

3.4 Basic competencies

The programs of disciplines and modules of the BD and PD cycles are interdisciplinary and multidisciplinary in nature, providing training for veterinary specialists at the intersection of a number of areas of knowledge. The EP ensures that graduates acquire basic competencies that meet the WHO and FAO requirements for specialists. The OP trajectory provides for training graduates in special competencies in the field of examination, quality and food safety, veterinary hygiene, pharmacy, animal welfare, national and international veterinary legislation and ethics.

Graduates receive practical competencies in the field of organizing veterinary services, veterinary inspection and certification, food safety, risk methodology, analysis of scientific research, ensuring safe and high-quality products of animal origin in business.

3.5 Professional competencies

Legislative regulation of veterinary affairs in the Republic of Kazakhstan: know the structure of the veterinary service of the republic and the functions of state veterinary organizations, modern methods of disinfection of biological waste, wastewater from livestock breeding and processing enterprises; state policy in the field of veterinary medicine and veterinary activities related to the state monopoly;

Technical Regulations "On Food Safety": know the main indicators of state standards for determining the quality, safety and market value of livestock, poultry, fish farming, meat and milk products, beekeeping and crop products. Requirements for food products, for the processes of production (manufacturing), storage, transportation (transportation), sales and disposal.

Veterinary and sanitary control and supervision of food quality and safety: master modern methods for assessing the quality and safety of food products during procurement, processing, production, transportation, storage and sales; exercise control over the veterinary and sanitary condition of enterprises processing products and raw materials of animal origin and ensure the production of high-quality products; carrying out a set of general veterinary-sanitary and organizational-economic measures upon detection of diseases of infectious, invasive and non-infectious etiology.

4 Professional passing base practitioner

The educational program "Food Safety" includes 4 types of practices, which are carried out in parallel with theoretical training or in a separate period.

- 1) Educational practice in a cycle DB;
- 2) Educational and clinical practice in a cycle DB;
- 3) Industrial practice in a cycle PD;
- 4) Pre-diploma internship in a cycle PD.

Educational practice - practice bases: veterinary clinics in Astana - "Zoosphere", "Kulager", JSC "Astana Onim", National Reference Center for Veterinary Medicine of the Ministry of Agriculture of the Republic of Kazakhstan.

Educational and clinical practice: KGP at the PVC "Vetservice", slaughter point "Altyn Taga", LLP "Astana Onim", veterinary clinics "Vitadog", "Zoosphere", Vetexpress", LLP Astana auylsharashylygy onimderi zerthanasy (TD "Alem", TD "Eurasia", KR "Shapagat", TD "Artem"), LLP "Virgin factory delicacies", RSU "Republican anti-epizootic detachment" Ministry of Agriculture RK, territorial Inspectorate of Astana, RSE at the RVC "Republican Veterinary laboratory".

Production practice – RGP "Republican veterinary laboratories" Ministry of Agriculture RK, regional territorial inspection, "Committee of Veterinary Control and Supervision" of the Ministry of Agriculture of the Republic of Kazakhstan of Akmola, North Kazakhstan, Karaganda, Pavlodar region, RSE "Republican Veterinary Laboratories" of the Ministry of Agriculture of the Republic of Kazakhstan, RGU "Republican Anti-Epizootic Squad" of the Ministry of Agriculture of the Republic of Kazakhstan, National Reference Center for Veterinary Medicine of the Ministry of Agriculture of the Republic of Kazakhstan, Astana.

Pre-graduation practice: RSE "Republican Veterinary Laboratories" of the Ministry of Agriculture of the Republic of Kazakhstan, regional territorial inspections, "Committee of Veterinary Control and Supervision" of the Ministry of Agriculture of the Republic of Akmola, North Kazakhstan, Karaganda, Pavlodar regions, RG "Republican Veterinary Laboratories" of the Ministry of Agriculture of the Republic of Kazakhstan, RSU "Republican Anti-Epizootic Squad" » Ministry of Agriculture of the Republic of Kazakhstan, National Reference Center in Veterinary of the Ministry of Agriculture of the Republic of Kazakhstan, Astana.

Na	Name of ovales and dis	Total labor int	ensity
No.	Name of cycles and dis-	in academic	in academic credits
	ciplines	hours	
1	2	3	4
1	Cycle of general education disciplines (GED)	1680	56
	Required component	1530	51
	History of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
1)	Kazakh (Russian) language	300	10
	Information and communication technologies	150	5
	Module of socio-political knowledge (political sci-	240	8
	ence and sociology, cultural studies and psycholo-	240	0
	gy)		
	Physical Culture	240	8
2)	Component of choice	150	5
	Fundamentals of Economics and Law	150	5
	Fundamentals of anti-corruption culture		
	Innovative entrepreneurship		
	Labor protection and basic life safety		
	Fundamentals of scientific research		
	Cycle of basic disciplines (BD)	3930	131
1)	University component	2 940	98
	Anatomy of animals and birds 1	150	5
	Anatomy of Animals and Birds 2	150	5
	Latin veterinary terminology	120	4
	Animal Physiology	150	5
	Biochemistry of animals	150	5
	Veterinary microbiology and immunology	1 80	6
	Private microbiology	120	4
	Veterinary hygiene and sanitation 1	150	5
	Veterinary hygiene and sanitation 2	150	5
	Veterinary pharmacology	120	4
	Clinical pharmacology with toxicologists _	150	5
	Cytology, embryology and histology	150	5
	Pathological physiology	150	5
	Pathological anatomy of animals 1	150	5
	Pathological anatomy of animals 2	1 50	5
	Feeding the animals	1 50	5
	Livestock	90	3
	Clinical diagnostics of animals	90	3
	Bioorganic chemistry	150	5
	Educational practice	120	4
	Educational and clinical practice	150	5
2)	Component of choice	990	33

Structure of the educational program

-

	Management in veterinary medicine	90	3
	Organization of veterinary affairs		
4	Additional types of training (ADE)		
5	final examination	240	8
1)	Writing and defending a thesis (project) or prepar- ing and passing a comprehensive exam	240	8
	Total	9000	300

Duration of training 5 years

Annex 1. Academic calendar

Утверждаю

Председатель Ученого Совета НАО «КАТИУ им.С.Сейфуллина» — Тиреуов К.М. « 29 » 05 2023 г.

АКАДЕМИЧЕСКИЙ КАЛЕНДАРЬ

на 2023-2024 учебный год

по уровням подготовки (БАКАЛАВРИАТ)

1	Презентационная неделя,	1 курс
	регистрация на дисциплины	с 28 августа включительно 31 августа
2	I семестр	с 1 сентября по 15 декабря
3	День конституции	30 августа
4	День знаний	1 сентября
5	День Республики	25 октября
6	День независимости	16 декабря
7	Экзаменационная сессия	с 18 по 29 декабря
8	Сдача FX	с 18 по 29 декабря
9	Новогодний праздник	1, 2 января
10	Каникулы	с 1 января по 26 января
11	II семестр	29 января по 10 мая
12	Международный женский день	8 марта
13	Праздник Наурыз	21,22,23 марта
14	Праздник единства народа Казахстана	1 мая
15	День защитника Отечества	7 мая
16	День Победы	9 мая
17	Экзаменационная сессия	с 13 мая по 24 мая
18	Сдача FX	с 13 мая по 31 мая
19	Запись на летний семестр	с 27 мая по 31 мая
20	Итоговая аттестация	до 30 июня
21	Летний семестр	с 3 июня по 12 июля
22	Каникулы	с 27 мая по 31 августа
23	День Столицы	6 июля
	Практика*	

Утвержден на Ученом совете НАО «КАТИУ им.С.Сейфуллина», протокол № 16 от 29.05.2023 г.

Примечание: В случае совпадения с выходным или праздничным днем занятие начинается в следующий рабочий день.

* Виды и сроки профессиональной практики определяются рабочим учебным планом образовательных программ.

Праложение 1 к Академическому календарю Утвержден на Ученом совете НАО "КАТНУ им. С.Сейфуллина", протокол 3016 от 29.05.2023 г.

График учебного процесса на 2023-2024 учебный год для образовательных программ факультета Ветеринарии и технологии животноводства

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ш				-	1	-	1		-	2	÷			+	÷	100	C 3/C		-	K	K		-	1										KII)	KII KI	КП	KII	3/C	3/C	С/ЗД/К	JI/K/B	с Л/К/ВС	С Л/К/ВС	C JI/K/BC	Л/К/В	с лж	K	K	K	K	Пр	Пр	Пţ
IV		. 4				-	-			-	-			-	1	1.5	р Пр				ILI/IIp		-				t i	+		÷			1			1	3/C	3/C	HA	НА	HA	ИА	HA	ИА									
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Условные обозначение:

 теоретическое обучение ПП-презентационная меделя ПД-предликломная практика Э-сессия экзаменационная л-летний семестр УП-учебная практика Пр-производственная практика К-Каникулы 3Д-Занись на дисциплины С-сдача FX ВС - военные сборы

КП - производственно-клиническая практика

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Appendix 2. Working curriculum

				РАБОЧИЙ УЧЕБНЫЙ ПЛАН																								
				на 2023-2028 учебные годы																								
				для Модульной образовательной программы "Пищевая безопасно																								
				по специальности/труппа образовательных программ В083 – Ветерн	нария																							
				Степень: Бакалавр																								
				Форма обучения: Очное (бакалавр 5 лет) семестры																								
				Год поступления: 01-09-2023																								
					¥	¥	_	K	оль по академ					Kenne	ество часов													
		Цикл дисциплины компонент	аниглит 1944 и СП И		Академическ	ие кредиты Академическ ий период	, "	контро	периодам	ическим			A		ество часов и работа			PO	4.	га сурс		тение кр курс	редитов п	ю акадек урс	ическия 4 ку			
-		<u>E</u>			z	z z g	5				-	-		<u> </u>			<u> </u>		1	*	3	4	5	урс 6	4 K) 7	8	5 ку 9	10
Шифр модуля	Наименование модуля	- 25	로 도	Наименование дисциплины	l er		E	Экзаме ны	Диффе ренцир ованн ый зачет	13 5	p	Лекции	Лабора торные	Практи ческие	Студий Ные заняти я	Практи ка	Ē	_	<u> </u>	2	-						3	
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					_			Общие	модули								,	-										
1		00 OK		Политология и социология	4	_	_	1			4/120	15		30			16	59	4.0	<u> </u>			+					
2		00 OK		Культурология и психология	4	_	_	1			4/120	15		30			16	59	4.0	<u> </u>	-	-	+					
3		00 OK		История Казахстана	5		_	1	-		5/150	15		30		-	20	85	5.0	L		-	+					
4		00 OK		Философия	5	3		3	-	_	5/150	15		30		-	20	85	-	-	5.0	-	+					
5	Общественно-политический	OO KE		Основы экономики и права	_		ļ	3			5/150	15		30			20	85		-	4		+					
6		00 KE		Основы антикоррупционной культуры				3			5/150	15		30			20	85					+					
7		00 KE		Инновационное предпринимательство	5	3		3			5/150	15		30			20	85			5.0		+					
8		00 KE		Охрана труда и основы безопасности жизнедеятельности	_			3			5/150	15		30			20	85			-							
9		OO KE		Основы научных исследований	+ -		-	3		_	5/150	15		30			20	85			-	-						
10		00 OK		Казахский (русский) язык	5	_	_	1			5/150			45			20	85	5.0	-	-							
11	Языковой	00 OK		Иностранный язык	5	_		1			5/150			45			20	85	5.0									
12		00 OK		Иностранный язык	5	-		2		_	5/150			45			20	85		5.0								
13		00 OK		Казахский (русский) язык	5			2		\rightarrow	5/150 2/60			45 30			20	85	0.0	5.0			+					
		00 OK		Физическая культура.		_	_	1		+	2/60			30			8	22	2.0	0.0			+			\rightarrow		
15		00 04		Физическая культура.	2			2		+ +	2/60			30		-	8	22		2.0	2.0	-	+					
16	Общеобразовательный	00 00		Физическая культура.				3			5/150	15	30.0	30		-	20	22 85			2.0	5.0	+					
18		00 00		Информационно-коммуникационные технологии Физическая культура.	2	-	_	4		+	2/60	10	50.0	30		-	8	22		-	-	2.0	+					
10		00 10	FN 2100						разовательно					50			0	22				2.0						
19		БД ВК	AZhP 1216	Анатомия животных и птиц 1	5			1	pasobalejibni		5/150	15	30.0				20	85	5.0									
20		БД ВК		Анатомия животных и птиц т Анатомия животных и птиц 2	5		+	2			5/150	15	30.0				20	85	J.0	5.0	+		+			+		
20		БД ВК		Латинская ветеринарная терминопосия	4			2			4/120	15	45.0		1		16	59		4.0	+	-	+			+		
22		БД ВК		Учебная практика	1	_		2		+ +	1/30		40.0			30	10			1.0	-	-	+					
23	Морфология животных и зоология	БД КВ		Зоология				2			3/90	15	15.0				12	48			+	-	+			+		
24		БД КВ		3ooreorpadwa	- 3	2	1 8	2			3/90	15	15.0			-	12	48		3.0			+					
25		БД КЕ		Ветеринарная генетика			H	4	• • / •		5/150	15	30.0				20	85					-			_		
26		БД КЕ		Ветеринарная генетика с основами селекции животных	-/ 1	4	1. 1	4			5/150	15	30.0				20	85				5.0						
27		БД ВК		Цитопогия, эмбриология и гистопогия	5	- 2	- 1	2			5/150	15	30.0				20	85		5.0	1		-					
28		БД BK		Физиология животных	5			3			5/150	15	30.0			-	20	85			5.0		+					
29		БД BK		— — — — — — — — — — — — — — — — — — —	6	_	_	4		+ +	6/180	30	30.0				24	96		-		6.0	+					
30	Микробиология, физиология и биохимия	БД BK		Биохимия животных	5			4			5/150	15	30.0				20	85		-	-	5.0	+					
31		БД ВК		Учебная практика	1	4					1/30					30				-	-	1.0	+					
32		БД ВК		Частная микробиология	4			5	1		4/120	15	30.0				16	59					4.0					
33		БД КЕ		Ветеринарная вирусопогия		5		5			4/120	15	30.0				16	59					40					
34		БД КЕ		Методы вирусологического исследования	- 4	5		5			4/120	15	30.0				16	59					7 4.0					-
35		БД ВК		Кормление животных	5	3		3	1		5/150	15	30.0				20	85			5.0							
36		БД ВК	Zhiv 2227	Животноводство	3	4		4			3/90	15	15.0				12	48				3.0						
37	Основы животноводства и гигиена	БД ВК		Ветеринарная гигиена и санитария 1	5	5		5			5/150	15	30.0				20	85					5.0					
38		БД ВК		Ветеринарная гигиена и санитария 2	5	6		6			5/150	15	30.0				20	85						5.0				
39		БД ВК	UP 3204	Учебная практика	2	6					2/60					60								2.0				

					. .													· · · · ·		
40	6д В		Биоорганическая химия	5	3	3		5/150	15	30.0		 	10	85	5.0	<u> </u>	<u> </u>	\square		
41	БД К		Лабораторное дело в ветеринарии	3	3	3		3/90	15	15.0		 	2	48	3.0		<u> </u>			
42	БД К		Лабораторная диагностика в ветеринарии			3		3/90	15	15.0		-	2	48			<u> </u>			
43	БД В		Ветеринарная фармакология	4	5	5		4/120	15	30.0			6	59			4.0			
44	БД В		Клиническая диагностика животных	3	5	5		3/90	15	15.0			2	48			3.0			
	БД В	3K PF 3230	Патологическая физиология	5	5	5		5/150	15	30.0		2	0	85			5.0			
46	БД В	3K 🛛 PAZh 3214 🛛	Патологическая анатомия животных 1	5	6	6		5/150	15	30.0		- 2	0	85				5.0		
47	БД В	3K KFT 3223	Клиническая фармакология с токсикологией	5	6	6		5/150	15	30.0		- 2	0	85				5.0		
48	БД В	3K PAZh 4215	Патологическая анатомия животных 2	5	7	7		5/150	15	30.0		2	10	85					5.0	
49	БД К	(B) VH 4211	Ветеринарная хирургия	4	7	7		4/120	15	30.0		1	6	59					4.0	
50	БД К	(B HMZh 4211	Хирургия мелких животных	4	'	7		4/120	15	30.0		1	6	59					4.0	
51	ПД В	3K POlYa 2316	Профессионально-ориентированный иностранный язык	3	4	4		3/90			30	1	2	48		3.0				
52	БД К	(B VBZh 3210	Внутренние болезни животных	F	0	6		5/150	15	30.0		1	10	85				5.0		
53	БД K	(B PT 3210	Практическая тералия	2	0	6		5/150	15	30.0		2	10	85				5.0		
54 Клиническая диагностика, радиооиология и	БД К	(B VR 4206	Ветеринарная радиобиология		7	7		3/90	15	15.0		1	2	48					- 10	
55 внутренние болезни живо	БД К	(B RB 4206	Радиобиологическая безопасность	3	1	7		3/90	15	15.0		1	2	48					3.0	
56	ПД В		Ветеринарное акушерство и гинекология	5	10	10		5/150	15	30.0		1	10	85		-				
57	БД В	3K UKP 4208	Учебно-клиническая практика	5	8			5/150				150								5.0
58	ПД В	3K VSEPZhP 4304	Ветеринарно- санитарная экспертиза продуктов животноводства и птицеводства	5	7	7		5/150	15	30.0		1	0	85					5.0	
59	ПД В		Ветеринарно-санитарная экспертиза продуктов растениеводства, рыбоводства и	5	7	7		5/150	15	30.0		1	10	85					5.0	
60	ПД К		Ветеринарный контроль на границе и транспорте	0	7	7		3/90	15	15.0		1	2	48						
61	пд к	B VSNPEIP 4318	Ветеринарно- санитарный надзор при экспертно- импортных перевозках	3	1	7		3/90	15	15.0		1	2	48					3.0	
62	ПД В	3K VSEPZhP 4305	Ветеринарно- санитарная экспертиза продуктов животноводства и птицеводства	5	8	8		5/150	15	30.0		2	10	85						5.0
63	ПД В		Технология, санитария и ветеринарная-санитарная экспертиза мясо-молочных	5	8	8		5/150	15	30.0			0	85		-	-			5.0
64	ПД Е	3K VSEPRRP 4314	Ветеринарно-санитарная экспертиза продуктов растениеводства, рыбоводства и	5	8	8		5/150	15	30.0			0	85		-				5.0
65 Ветеринарно-санитарная экспертиза и	пд к		Безопасность пищевых продуктов 1	-		8		5/150	15	30.0			0	85			-			
66 безопасность пищевых продуктов	ПД К		Контаминация продуктов животноводства 1	5	8	8		5/150	15	30.0			10	85		-	-			5.0
67	ПД В		Производственная практика	20	9	-		20/600				600				-				20.0
68	ПДЕ		Ветеринарно- санитарная экспертиза продуктов животноводства и птицеводства	5	10	10		5/150	15	30.0		 	0	85			+			
69	ПД Е		Технология, санитария и ветеринарная-санитарная экспертиза мясо-молочных	5	10	10		5/150	15	30.0		 	0	85		-	-			
70	ПДЕ		Преддипломная практика	1	10			1/30				30				+	<u> </u>		\rightarrow	
71	ПДК		Безопасность пищевых продуктов 2			10		5/150	15	30.0			10	85		+	<u> </u>	+	$ \rightarrow $	
72	ПД К		Контаминация продуктов животноводства 2	5	10	10		5/150	15	30.0				85		+	<u> </u>	<u> </u>		
73	пд к		Судебная ветеринарная экспертиза			10		5/150	15	30.0			· · ·	85		+			+	
74	ПД К		Судебная танатология	5	10	10		5/150	15	30.0			.0	85		+	<u> </u>	++		
	н д П				1	10	1	00100	12	0.00		- 4	×	VV	1 1 1	1	1	1 1		

75 БД КВ ЕМОVM 5212 Эпизоотический мониторинг и организация ветеринарных мероприятий	6	10	10			6/180	30	30.0				24	96									6.0
76 БД КВ ТЕВИ: 5212 Трансграничные и экзотические болезни животных	0	10	10			6/180	30	30.0				24	96									0.0
77 ПД ВК VE 3306 Ветеринарная эпидемиология 1	5	5	5			5/150	15	30.0				20	85					5.0				
78 Изгразионные и иниформиции на Баларии ПД ВК VE 3308 Ветеринарная эпидемиология 2	5	6	6			5/150	15	30.0				20	85						5.0			
79 Инвазионные и инфекционные болезни ПД ВК РІВД'я 3312 Паразитология и инвазионные болезни животных 1	3	6	6			3/90	15	15.0				12	48						3.0			
80 ПД ВК РІВІІ 4313 Паразитопогия и инвазионные болезни животных 2	5	7	7			5/150	15	30.0				20	85							5.0		
81 ПД КВ МV 4317 Менеджмент в ветеринарии	5	8	8			5/150	15	30.0				20	85								5.0	
82 ПД КВ ОVD 4317 Организация ветеринарного дела		l °	8			5/150	15	30.0				20	85								J.0	
Доп	олнительн	ые моду	/ли, выхо	дящие за ра	мки квал	ификаци	И															
			Лодули по																			
	Hay	чно-исс	педовател	пьская рабо	та (НИР)												_		_			
Средняя недельная нагрузка в часах														60	60	60	60	60	60	60	60	40 64
1 Общеобразовательные дисциплины(ООД)	56		14	0	0	1680	90	30	450	0	0	224	886	25	12	12	7	0	0	0	0	0 0
Обязательный компонент(ООД/ОК)	51		13	0	0	1530	75	30	420	0	0	204	801	25	12	7	7	0	0	0	0	0 0
Вузовский компонент(ООД/ВК)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0
Компонент по выбору(ООД/КВ)	5		1	0	0	150	15	0	30	0	0	20	85	0	0	5	0	0	0	0	0	0 0
2 Базовые дисциплины(БД)	131		27	0	0	3930	420	750	0	0	270	488	2002	5	18	18	20	25	22	12	5	0 6
Обязательный компонент (БД/ОК)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0
Вузовский компонент(БД/ВК)	98		19	0	0	2940	285	555	0	0	270	356	1474	5	15	15	15	21	17	5	5	0 0
Компонент по выбору(БД/КВ)	33		8	0	0	990	-135	195	0	0	0	132	528	0	3	3	5	4	5	7	0	0 6
3 Профилирующие дисциплины(ПД)	105		18	0	0	3150	255	480	30	0	630	336	1419	0	0	0	3	5	8	18	25	20 26
Обязательный компонент(ПД/ОК)	0		0	C	0	0	-0 -1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0
Вузовский компонент(ПД/ВК)	82		13	0	0	2460	180	345	30	0	630	244	1031	0	0	0	3	5	8	15		20 16
Компонент по выбору(ПД/КВ)	23		5	0	0	690	75	135	0	0	0	92	388	0	0	0	0	0	0	3	10	0 10
Итого по учебному плану	292			0	[0	8760	765	1260	480	0	900	1048	4307	30	30	30	30	30	30			20 32
4 Дополнительные виды обучения										Количест		ИТОВ	T	риместр	p	Коли	чество ч	Iacob		Количес	тво нед	аль
5 Модуль итоговой аттестации (МИА)										[8						240.0					
Итого с уч. ИГА										[300						9000.0					

Appendix 3 Matrix of achievability of the generated learning outcomes in the educational program using academic disciplines

Ν	Name of the	Brief description of the discipline	Num						Forn	ned learn	ing out	comes					
0.	discipline		ber of	RO 1	RO 2	RO 3	RO 4	PO5	RO 6	RO 7	RO 8	RO 9	RO 10	RO 11	RO 12	PO13	PO14
			credit														
			s														
			comr														
			ade														
		e of general education disciplines University co	mponer		tive co	mpon	ent										
	Fundamentals	Studies the basics of economics and law, gives	5	V													
	of Economics	basic concepts on social production, economic sys-															
	and Law	tems, mechanisms of functioning of the market															
		system (demand, supply, price and competition).															
		Forms concepts about production, costs and income															
		of the company. Includes the study of the national															
		economy (content, structure and measurement of															
		results), government regulation and economic secu-															
		rity of the national economy, the main branches of															
		Kazakhstan law (civil, labor, criminal law).															
	Entrepreneur-	The discipline is focused on developing in students	5	V													
	ship	a comprehensive understanding of entrepreneurship															
		and the possibilities of organizing entrepreneurial															
		activities. The content of the discipline characteriz-															
		es the essence of entrepreneurial activity, its types															
		and functions, business entities and the business															
		environment, and also reflects the features of the															
		mechanism for creating your own business, busi-															
		ness planning, financial and personnel support,															
		characterizes the types of business risks and ways															
		to prevent and minimize them.															
	Law and anti-	Issues under study: the essence of corruption as a	5	V													
	corruption	social and legal phenomenon; manifestation of cor-															
	culture	ruption in public life; measure of moral and legal															
		responsibility for corruption offenses; current legis-															
		lation in the field of anti -corruption; prevention of															
		crime . Competencies being developed: orientation															
		in matters of current legislation; possession of skills															
		in the analysis of legal acts, relations regulated by															
		law, legal analysis of information; application of															

					r	1	1	-			
	the law in specific situations, adherence to moral										
	and legal norms in everyday practice; expression										
	and justification of one's own point of view on is-										
	sues of law and anti-corruption culture; conducting										
	polemics in the legal field.										
Safety vital	Formation of knowledge and practical skills in stu-	5	V								
activity	dents to identify dangerous and harmless natural										
	conditions, to prevent the causes and conditions of										
	dangerous situations, to protect the population and										
	production facility and the national economy from										
	the possible consequences of dangerous situations.										
	Features of labor protection for women and youth,										
	supervision and control over compliance with labor										
	protection legislation and responsibility for compli-										
	ance with labor protection standards.										
Ecology	·	5	V								
Scientific Re-		5	V								
search Meth-											
ods											
	Cycle of basic disciplines University	or compo	onent								
Anatomy of	Studies the general patterns of the structure of the	5		V					 	 	
animals and	animal body, determines the sections and directions	5		•							
birds 1	of the animal body. Considers the sections of oste-										
01103 1	ology, syndesmology, myology, dermatology.										
Anatomy of	Studies the patterns of structure of the internal or-	5		V		 					
Animals and	gans of animals and birds, features of topographic	5		v							
Birds 2	data depending on the species. Describes the struc-										
Difus 2	ture of the digestive and respiratory systems, as										
	well as the urinary, endocrine, immune, cardiovas-										
	cular and nervous systems and reproductive organs										
	of animals, the features of their structure depend-										
	ing on the type of animal. Examines the features of										
	the organs of the circulatory and lymph circulation										
	systems and the importance of analyzers (organs of										
	vision, hearing, smell, touch and taste).										

Latin veterinary terminology	Considers issues of knowledge of the Latin alphabet and Latin terminology, classification of medical and veterinary terms, reading words and phrases of the Latin language in compliance with the rules of the lexical and grammatical minimum of the veterinary profile, and the implementation of spelling correct writing of anatomical, histological and clinical terms. Forms skills in using Latin veterinary terminology in professional activities.			v						
Veterinary hygiene and sanitation 1	Determines the sanitary and hygienic assessment of systems for keeping, feeding and watering animals and birds, the influence of various climatic factors on the health and productivity of animals and birds. Studies soil hygiene, sanitary and hygienic assess- ment of various methods of removal, storage and disinfection of manure, veterinary and sanitary methods for testing and disinfecting water, as well as veterinary and sanitary standards and require- ments for feed quality.	5			V					
Veterinary hygiene and sanitation 2	Studies sanitary and hygienic requirements for live- stock buildings, sanitary and hygienic assessment of ventilation of livestock buildings, zoohygienic requirements for keeping farm animals, the basics of designing livestock buildings. Gives skills in calculating air exchange and heat balance of live- stock buildings. Studies private hygiene and zoohy- gienic requirements when transporting animals.	5			V					
Feeding the animals	Studies the importance and role of animal feeding in the production of livestock products, assessment of the nutritional value of feed, methods of zootechnical analysis of feed. Forms skills in prescribing and selecting the correct, standardized feeding of animals, taking into account the species, breed, age, and productivity.	5			V					
Livestock	Considers issues of organization and production of livestock products on farms of various forms of ownership, methods for determining the productivity of farm animals. Studies the	5							v	

			r			1		1		r		 1
	characteristics of breeds bred in Kazakhstan and											
	abroad, their use for the production of one or											
	another type of product in the country and in the											
	world.											
Animal	Forms theoretical knowledge on the structural and	5		V								
Physiology	functional organization of animals, homeostasis, the											
	principles of nervous and humoral regulation of											
	functions, the physiology of parts of the central											
	nervous system and the autonomic nervous system,											
	the cerebral cortex, modern ideas about ethology,											
	the physiology of the cardiac system, digestive and											
	respiratory systems. Studies the physiological pro-											
	cesses occurring in the body of animals, the role											
	and physiology of the endocrine glands, the biolog-											
	ical significance of energy and metabolic processes,											
	the processes of excretion of waste products of the											
	body											
Bioorganic	Studies the basic concepts of theoretical organic	5		V								
chemistry	chemistry, the relationship between composition											
	and structure, and the reactivity of organic sub-											
	stances. Forms skills in solving chemical problems,											
	drawing up reaction equations, and determines the											
	main ways of practical use of organic compounds in											
	agriculture.											
Biochemistry	Forms theoretical and practical knowledge on hor-	5		V								
of animals	mones, enzymes, proteins, nucleotides and nucleo-											
	sides, DNA, RNA structures, nucleic acid biosyn-											
	thesis, Aminoacyl-tRNA synthetase. Studies the											
	stages of protein synthesis, the multi-enzyme											
	mechanism of protein synthesis, recombinant mole-											
	cules and problems of genetic engineering, methods											
	of hybridization, protein biosynthesis, biochemistry											
	of blood, muscle tissue, urine excretion, milk and											
	milk formation.											
Veterinary	Studies the systematics, genetics, distribution, mor-	6					V					
microbiology	phology, physiology and immunology of patho-											
and	gens, the defense mechanisms of the macroorgan-											
immunology	ism (immune system, cells that carry out the im-											
	mune response, antibodies, cellular receptors for											
	them and complement, the body's immune re-											
	sponse). Forms competencies in studying the cul-											

	tural and biochemical properties of									
	microorganisms, studying the microflora of water, milk, soil, and air.									
Private micro-	Studies the causative agents of infectious diseases:	4				V				
biology	pathogenic cocci, enterobacteria families, brucello-									
	sis, tuberculosis, swine erysipelas, listeriosis, lepto- spirosis, anthrax, pathogenic anaerobes, pathogenic									
	spirosis, anunax, paulogenic anaerooes, paulogenic spirium, dermatomycosis. Considers issues of mod-									
	ern diagnostics and specific prevention of the most									
	common infectious animal diseases.									
Cytology	Studies the microscopic and submicroscopic struc-	5								
embryology	ture and basic aspects of cell life, cell division and									
and histology	differentiation, classification of organ tissues, fea-									
	tures of their development and structure, morpho-									
	logical basis of reactivity, adaptation and character- istics of organs and tissues. Forms skills in using									
	microscopic and electron microscopic forms of									
	technology									
Pathological	Studies pathoanatomical and pathohistological	5			V					
anatomy of	changes in organs and tissues in systemic non-									
animals1	contagious animal diseases of various etiologies:									
	pathophysiology of general and local circulatory									
	disorders and their relationship, typical microcircu-									
	lation disorders, types of peripheral or local blood circulation and microcirculation. Considers issues									
	of pathomorphology of the blood system and blood									
	formation, hematopoietic organs, respiratory sys-									
	tem, digestive organs, liver diseases, kidney diseas-									
	es, diseases of the endocrine and nervous systems.									
Pathological	Studies the general clinical and pathomorphological	5			V					
anatomy of	characteristics of infectious diseases, the pathogen-									
animals 2	esis of local and general changes, their diagnostic									
	significance, mixed infections and complications,									
	the influence of various body reactions on the course and outcome of infectious diseases. Consid-									
	ers the features of pathomorphological and patho-									
	histological changes in organs and tissues during									
	acute and chronic bacterial infections, viral diseas-									
	es, mycoses and mycotoxicoses by animal species,									
	as well as protozoosis and helminthiasis. Forms the									
	skills of pathological dissection of the corpses of									

	various domestic animals and birds.		T							
Pathological	Studies the general patterns of development of	5	+		V					
physiology	pathological processes in the body of animals in	5			v					
physiology	various diseases: general nosology, thanatology,									
	general etiology, the effect of environmental fac-									
	tors, general pathogenesis, the influence of heredi-									
	ty, constitution, age, resistance, reactivity on the									
	development of pathology. Considers issues of the									
	damaging effects of causes, as well as inflammato-									
	ry, dystrophic, necrobiotic, necrotic, tumor process-									
	es and compensatory-adaptive, restorative and									
	pathomorphological, histological manifestations in									
	these processes.									
Veterinary	Studies the classification of medicinal substances,	4			V					
pharmacology	the general patterns of interaction of medicinal sub-	-								1
1 85	stances with the body's biosubstance, as well as the									1
	pharmacokinetics and pharmacodynamics of medic-									1
	inal products. Considers the mechanisms of action									1
	of substances that depress and excite the central									1
	nervous system (narcotic substances, opioid and									1
	non-opioid analgesics, neuroleptics and tranquiliz-									1
	ers, analeptics of the cerebral cortex, medulla ob-									1
	longata and spinal cord, general tonics).									
Clinical	He studies substances that change the conduction of	5								1
pharmacology	impulses through the efferent section of the reflex									1
with	arc, reduce and increase the sensitivity of afferent									
toxicology	nerve endings, substances that act on certain physi-									
	ological and metabolic processes in the body, anti-									
	microbial and antiparasitic agents. Considers the									1
	general patterns of the action of poisons on the body, methods of diagnosis and treatment of poi-									
	soning, classifies poisons by origin and purpose,									1
	studies poisoning with mineral poisons and perti-									1
	cides, feed toxins, mycotoxins, phytotoxins, and									1
	animal poisons.									1
Clinical	Studies the methodology of clinical diagnosis of	3					V			
diagnostics of	non-communicable diseases of farm animals,	2								
animals	carnivores and birds, the scientific basis of									
	diagnosis, prognosis assessment and establishment									
	of epicrisis for diseases of various etiologies using									
	classical and modern instrumental, clinical and la-									

			1			1	-			1	
	boratory methods for assessing the functions of										
	organs and body systems. Forms competencies in										
	X-ray diagnostic methods: fluoroscopy, radiog-										
	raphy, computed tomography, fluorography.										
Educational	Provides skills in autopsy of corpses and disposal of	5							V		
and clinical	pathological materials, as well as carrying out a set										
practice	of diagnostic, therapeutic, preventive and anti-										
-	epizootic measures at veterinary facilities. Master-										
	ing the rules of sampling, methods of organoleptic										
	and laboratory analysis of the good quality of food										
	products, techniques for pre-slaughter and post-										
	slaughter inspection of carcasses and internal or-										
	gans of slaughtered animals.										
1	Cycle of basic disciplines Elective compone	nt with	alterr	atives	\$						
Zoology	Forms knowledge in matters of fitness and patterns	4			-			V			
0	of distribution of various animals on Earth. Studies	-									
	all types of invertebrate and vertebrate animals,										
	their body structure, taxonomy, origin of various										
	animal species, development paths, diversity of										
	animals, their role in nature, animal ecology.										
Zoogeography	Demonstrates the basic patterns of distribution of	4						V			
	various animals depending on natural and climatic										
	conditions. Forms theoretical knowledge in the										
	field of ecology of the animal world.										
Veterinary	Studies the fundamentals of modern genetics, the	5				V					
genetics	laws of heredity and variability using cytological	-									
0	and molecular principles of genetic analysis. Forms										
	skills in the use of interspecific and intergeneric										
	hybridization, statistical processing of experimental										
	data.										
Veterinary	He studies the basics of molecular genetic analysis	5			1	V		1			
genetics with	and its role in animal breeding. Forms theoretical										
the basics of	and practical skills in breeding work in livestock										
animal	breeding units.										
breeding	č										
Veterinary	Determines the characteristics, isolation and	4					V				
virology	reproduction of viruses, the stability of viruses in										
0,	the environment, the genetics and ecology of										
	viruses, the pathogenesis of viral diseases, the										
	body's antiviral immunity. Forms skills in										
	diagnosis and specific prevention of viral diseases										

	of farm animals.									
Virological research methods	General description of viruses, chemical composition, their resistance to various physicochemical and biological factors, rules and safety precautions when working with materials containing viruses, methods of growing viruses in chicken embryos and cell cultures, immunological methods of combating viruses, the emergence and spread of viral diseases, the fight against them, familiarization with the features of treatment and prevention.	4			V					
Laboratory diagnostics in veterinary medicine	Forms theoretical and practical skills for working in a veterinary laboratory, studies modern methods of laboratory diagnosis of animal diseases. Studies the rules for organizing work in veterinary laboratories and maintaining the necessary documentation.	5					V			
Laboratory work in veterinary medicine	Familiarizes with the structure, activities and ongo- ing research in state veterinary laboratories, with the definition of safety rules when working in veter- inary laboratories. Studies modern laboratory re- search methods for diagnosing diseases of conta- gious and non-contagious etiology in animals.	5					V			
Veterinary surgery	Forms surgical thinking skills when treating surgically ill animals. The issues of identifying surgical pathologies and carrying out therapeutic and preventive measures aimed at preserving the lives of animals and increasing their productivity are considered.	4					V			
Small Animal Surgery	Forms theoretical and practical skills of the peculiarities of the course of surgical pathologies in small animals. Methods of diagnosis and treatment of surgical diseases.	4					V			
Veterinary radiobiology	Examines the patterns of biological effects of ioniz- ing radiation on the animal body. Forms knowledge in the field of dosimetry and radiometry.	3					V			
Radiobiologic al safety	Considers the issues of protecting animals from exposure to ionizing radiation, and methods of providing assistance to animals exposed to radia- tion. Develops skills in working with measuring instruments in radiobiology.	3					V			
Internal	Forms a general understanding of internal diseases	5					V			

diseases of	of animals and the features of clinical examination										
animals	of animals, clinical examination, therapeutic										
	techniques, physiotherapy and physioprophylaxis.										
Hands-on	Forms medical thinking skills and practical ability	5						V			
therapy	to use therapeutic equipment when carrying out										
	therapeutic and preventive measures for internal										
	diseases of animals.										
Epizootic	Studies the general principles of epizootological	6				V					
monitoring	research and monitoring, methods of										
and	epizootological analysis, planning of preventive and										
organization of	anti-epizootic measures. Develops skills in										
veterinary	conducting epizootological examinations, statistical										
activities	processing of obtained data, and organizing										
	veterinary activities.										
Transboundary	Studies the patterns of manifestation of	6				V					
and exotic	transboundary and exotic animal diseases, features										
animal	of the epizootic process and develops skills in using										
diseases	modern methods in the diagnosis, treatment and										
	prevention of these diseases.										
	Cycle of major disciplines Universit	y comp	onent								
Professionally	Forms professional foreign language speech of fu-	3		V							
oriented	ture specialists to improve the level of professional										
foreign	competence, proficiency in a professional foreign										
language	language for the implementation of written and oral										
0 0	information exchange, and further development of										
	speech activity. Studies the rules of speech behavior										
	in accordance with situations of professional com-										
	munication, depending on the style and nature of										
	communication in the social, everyday and academ-										
	ic spheres.										
Veterinary and	Studies regulatory documentation, methods of	6							V		
sanitary	sanitary and hygienic examination of livestock										
examination of	products, determines the rules for their veterinary										
livestock and	and sanitary assessment. Studies the basics of										
poultry	technology and hygiene of animal slaughter, post-										
products 1	mortem veterinary and sanitary examination.										
•	Studies veterinary and sanitary examination of										
	carcasses and internal organs for non-contagious,										
	infectious and invasive diseases.										
Veterinary and	Studies veterinary and sanitary examination and the	5							V		
sanitary	basics of milk production technology, examination	-									

				1			1	r - 1				
	examination of	of milk obtained from sick animals. Studies										
	livestock and	veterinary and sanitary examination of livestock										
	poultry	raw materials (leather and fur, keratin containing,										
	products 2	intestinal, offal).										
	Veterinary and	Studies methods of veterinary and sanitary	4						V			
	sanitary	examination of poultry meat and poultry products,										
	examination of	veterinary and sanitary assessment of poultry meat										
	livestock and	and eggs for non-contagious, infectious and										
	poultry	invasive diseases.										
	products 3											
	Veterinary and	Studies general characteristics, types of quality	5							V		
1	sanitary	control, defects and nutritional value of plant										
	examination of	products, methods of quality control of fresh root										
	crop, fish and	vegetables, vegetables, fruits, berries and										
	beekeeping	mushrooms, nuts, grain products and exotic fruits.										
	products 1	Studies the basics of technology and veterinary and										
		sanitary examination of salted, pickled, dried fruits										
		and vegetables, production technology and quality										
		control of canned vegetable products.										
	Veterinary and	Studies the nutritional value of fish meat, the	5							V		
	sanitary	characteristics of commercial fish, veterinary and										
	examination of	sanitary examination of fish for infectious, invasive,										
	crop products,	mycotic diseases, technology and quality control of										
	fish farming	canned, dried, dried, salted and smoked fish.										
	and	Quality control of meat of marine mammals and										
	beekeeping 2	invertebrates.						 	 	• •		
	Technology,	Studies the prospects for the development of meat	5						V	V		
	sanitation and	production, the nutritional value and classification										
	veterinary and	of meat products, the basics of technology and										
	early sanitary	hygiene in sausage production. Forms the skills of										
	examination of	sampling, conducting sanitary and hygienic										
	meat and dairy	examination and technochemical control of										
	products 1	sausages.						 		.	 	
	Technology,	Studies the basics of technology and hygiene in the	5						V	V		
	sanitation and	production of dairy products, nutritional value and										
	veterinary and	classification, requirements for the quality of raw										
	early sanitary	materials and finished products. Forms sampling										
	examination of	skills, methods of sanitary and hygienic										
	meat and dairy	examination of liquid fermented milk products,										
	products 2	sour cream, cottage cheese, cheeses, butter, national										
		dairy products.										

	Vataria am	Ctuding infection its teners and their enire states in t	5				V				<u> </u>	1
	Veterinary	Studies infection, its types and their epizootological	5				v					
	epidemiology	significance, the theory of the epizootic process, its										
	1	driving forces and research methods, infectious										
		diseases common to all animal species. Forms the										
		development of students' abilities to diagnose,										
		prevent infectious diseases of animals and carry out										
		health measures.										
	Veterinary	Studies infectious diseases of animals: definition of	5				V					
	epidemiology	the disease, history of its study, causative agent,										
	2	epizootological features, pathogenesis, clinical										
		signs, pathological changes, diagnosis and										
		treatment, prevention and control measures. Forms										
		diagnostic skills, general and specific preventative										
		care, planning and organization of preventive and										
		anti-epizootic measures.										
	Parasitology	He studies the ecological patterns of relationships	3					V				
	and invasive	between parasites and their hosts, transmissible										
	animal	natural focal invasive diseases, classification, life										
	diseases 1	cycles of parasites, innovative approaches to the										
		diagnosis, treatment and prevention of parasitoses										
		caused by them. Forms the skills of modern										
		helminthological diagnostics.										
	Parasitology	He studies private helminthology, veterinary	5					V				
	and invasive	acarology, protozoology and entomology, methods										
	animal	of studying animals and samples from them for										
	diseases 2	helminthiasis, arachnoenthomosis and protozoosis.										
		Forms theoretical and practical skills in organizing										
		therapeutic and preventive measures against										
		parasitosis of humans, animals, poultry and fish.										
	Veterinary	Studies the identification and pathological	5						V			
	obstetrics and	processes developing in the reproductive apparatus										
	gynecology	of female farm animals during the periods of										
		puberty, pregnancy, childbirth and the postpartum										
		period, diseases of newborns, diseases of the										
		mammary gland, obstetrics techniques, operational										
		methods of providing obstetric care, diagnostics,										
		treatment and prevention of obstetric diseases.										
		Determines the specific features of the structure and										
		function of the mammary gland of females of										
		different animal species.										
		Cycle of major disciplines Optional	compa	nent								
L			· · · · · · · · · · · · · · · · · · ·					1				

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Forensic	He studies issues of judicial proceedings in cases of	5							V				
veterinary	controversial cases, with deliberate falsification,												
examination	forensic veterinary autopsy, toxicology and												
	thanatology of judicial proceedings. Generates												
	knowledge in the preparation of documentation of												
	examinations performed.												
Forensic	They develop in students the knowledge and skills	5							V				
thanatology	to resolve judicial issues that arise in legal,												
	investigative and judicial practice based on												
	knowledge of the structure and logic of a												
	pathological diagnosis. Thanatology is based on the												
	knowledge base of pathological anatomy in												
	comparison with normal one.												
Management	Studies general organizational issues, legislative	5					V						
in veterinary	regulation and structure in veterinary affairs, plan-												
medicine	ning of veterinary activities, logistics of veterinary												
	services. He studies issues of veterinary services												
	abroad, regulations of international veterinary												
	organizations, legislative regulation, and the												
	structure of veterinary affairs. Provides training for												
	veterinary specialists and scientific support for												
	veterinary services.												
Organization	He studies the organizational structure of the	5					V						
of veterinary	veterinary service, its management on a republican												
affairs	and regional scale, organization in districts and												
	rural districts. Develops skills in organizing												
	veterinary activities in business entities for the												
	prevention and elimination of animal diseases of												
	contagious and non-contagious etiology. Studies												
	issues of international cooperation in the field of												
	veterinary medicine, scientific, financial and												
	logistical support of veterinary services. Forms												
	skills in calculating the economic efficiency of												
	veterinary activities.												
Food safety 1	Studies the general concept of foreign substances,	5								V			
	regulatory documentation regulating the quality and												
	safety of food products, assessing the safety of												
	livestock products when contaminated with foreign												
	substances of biogenic origin (microbial												
	contaminants).												
Food safety 2	Studies the assessment of food safety when	5								V			

	contaminated with foreign substances of biogenic origin (antibiotics, hormonal drugs, microscopic fungi and mycotoxins), as well as the assessment of the safety of genetically modified foods.									
Contamination of livestock products 1	Studies methods for studying contaminated animal products and technical raw materials of animal origin, contaminated with biogenic foreign substances, and determines the rules for their veterinary and sanitary assessment.	5						7		
Contamination of livestock products 2	Studies methods for studying contaminated animal products and technical raw materials of animal origin, contaminated with technogenic foreign substances, and determines the rules for their veterinary and sanitary assessment.	5						7		
Veterinary control at the border and transport	Studies the issues of carrying out veterinary and sanitary measures to prevent the spread of diseases along the routes of road, rail and air transport, implementing veterinary and sanitary measures and ensuring security at the border and transport. Develops skills in control and accounting of controlled goods and documentation.	3						T		
Veterinary and sanitary supervision during expert import transportation	Develops knowledge on organizing movements during export-import operations by all types of transport of animals, products and raw materials of animal origin. Studies measures to prevent the spread of diseases along the route, and to comply with veterinary and sanitary requirements during transportation.	3						7		

Head of the department

Employer

Chairman of the Faculty Council for Academic Quality

Dean of the Faculty

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