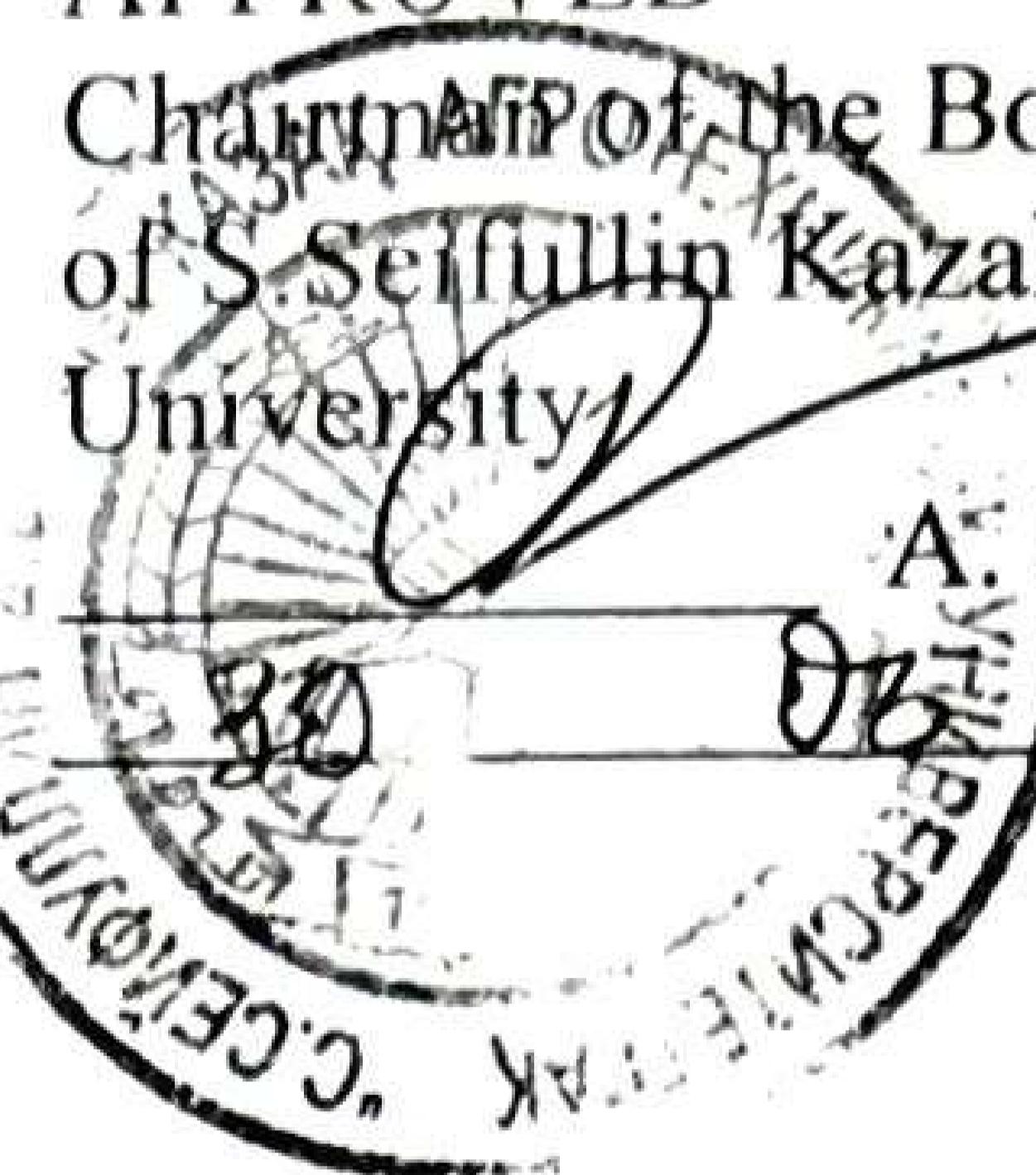


Ministry of Agriculture of the Republic of Kazakhstan
Seifullin Kazakh Agro Technical University

Reviewed
at the meeting of the
University Council
Protocol number 15
30.05 2019

APPROVED
Chairman of the Board
of S. Seifullin Kazakh Agro Technical
University
A. Kurishbayev
2019



EDUCATIONAL PROGRAM
«Veterinary Safety»

Code and classification of the field of education: 6B091 Veterinary Medicine

Code and classification of training field: 6B091 Veterinary Medicine

Code in the International Standard Classification of Education: 6B0841

Qualification: Bachelor of Veterinary in the Educational Program

"Veterinary Safety"

Duration of study: 5 years

Form of study: full-time

Nur-Sultan 2019

The author's team:

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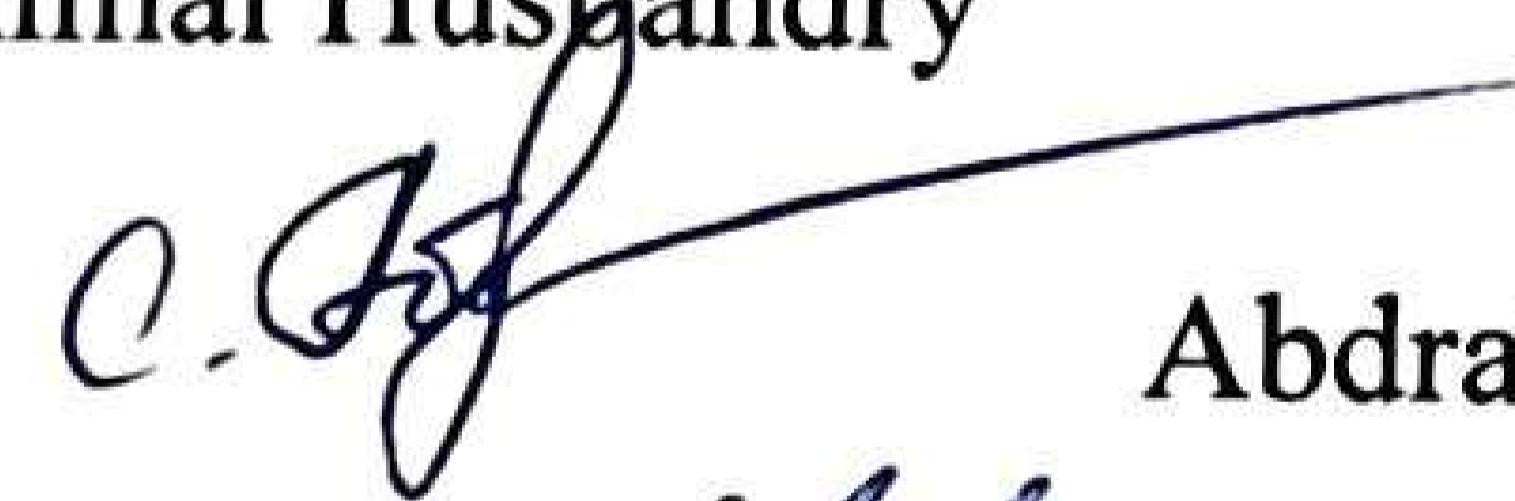
The team of authors was approved by the order of JSC "Saken Seifullin Kazakh Agro Technical Research University"

№ 932-H from 12.12.2018; № 962-H from 28.12.2018; № 964-H from 28.12.2018

Educational program " Veterinary safety "

considered at the meeting of the department "Veterinary Medicine"
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Dean of the Faculty of Veterinary Medicine and Animal Husbandry
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Doctor of Veterinary Sciences, Professor,



Abdrakhmanov S.K.

Head of the Department "Veterinary Medicine"
Candidate of Veterinary Sciences, Associate Professor



Mykhanbetkaliyev Y.Y.

Considered at the meeting of the Academic
Council of the University
Protocol №
from « » 2023y.

APPROVE
Chairman of the Management Board
NCJSC «S.Seifullin Kazakh AgroTechnical
Research University»

« _____ » 2023 y.

EDUCATIONAL PROGRAM
«6B09101- Veterinary safety»

Code and classification of the field of education: 6B09- Veterinary

Code and classification of training areas: 6B091 - Veterinary

Code in the International Standard Classification of Education: 6B0841

Degree/qualification awarded: Bachelor of Veterinary Medicine in the educational program

"Veterinary Safety"

Duration of training: 5 years

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The team of authors was approved by the order of JSC " Saken Seifullin Kazakh Agro Technical Research University "

№ 932-H from 12.12.2018; № 962-H from 28.12.2018; № 964-H from 28.12.2018

Educational program " Veterinary safety "

considered at the meeting of the department "Veterinary Medicine"
protocol № 1 from «26» 08 2023,
approved by the Faculty Council
protocol № 1A from «27» 08 2023.

Dean of the Faculty of Veterinary Medicine and Animal Husbandry

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Candidate of Veterinary Sciences, Associate Professor

Mykhanbetkaliyev Y.Y.

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1 Passport of the educational program

The educational program «Veterinary Safety» in the specialty 6B09 – «Veterinary Medicine» was developed in agreement with employers, taking into account the needs of the labor market, as well as in accordance with the National Qualifications Framework, the professional standard «Veterinary Medicine» agreed with the Dublin descriptors and the European Qualifications Framework. The educational program is designed on the basis of a modular system.

Awarded qualification «Veterinary Specialist» in the educational program 6B091 – «Veterinary Safety». Possibility of further continuing education in master's and doctoral studies.

1.1 Purpose of the educational program

The goal of the educational program is to prepare specialists who are competitive in the labor market, have broad fundamental knowledge and practical experience, and are proficient in modern methods of diagnosing and treating animal diseases, taking into account the requirements of employers.

Main goals:

- prevention, diagnosis and treatment of animal diseases of various etiologies;
- veterinary and sanitary assessment of the quality of products and raw materials of animal origin;
- protection of the territory of the Republic of Kazakhstan from the introduction of infectious diseases from other countries;
- protection of the population from diseases common to humans and animals
- ability to work with scientific and technical information, using domestic and foreign experience in professional activities;
- formation of theoretical and practical knowledge, skills and abilities in professional activities.

1.2 Learning outcomes

PO 1. To describe and link knowledge in the field of general education disciplines, to know general concepts about legal and anti-corruption culture, to determine the importance of principles and culture of academic integrity for the formation of a competent personality with high thinking potential, as well as to extract modern ideas in the professional activity's field of information structure

PO 2. To formulate the macro- and microorganisms' zoological systematics and morphological features of organs' and systems' structure, understand the essence of physiological and biochemical processes in the body of animals, possess methods of studying tissue cells and body systems, to know Latin grammar and the basics of Latin veterinary terminology.

PO 3. To explain the inheritance patterns of living organisms' signs changing and to master the biometric processing skills of primary material

PO 4. To interpret the role of microorganisms in the occurrence of pathological processes in animals, to explain the basics of immunology and serology, as well as the importance of the main epidemiological links.

PO 5. To apply knowledge the veterinary and sanitary standards in maintenance, feeding and exploitation of animals.

PO 6. To master the academic writing techniques, abstracting, compiling and processing research results.

PO 7. To understand the basic pharmacodynamic effects' mechanisms caused by medicinal substances, and to know the dosing and regulation of veterinary drug prescriptions.

PO 8. To learn the technology and hygiene rules of production of animal and plant products and veterinary and sanitary assessment of their quality.

PO 9. To formulate the main regularities of the systematization of animal species, to study the main methods of diagnosing diseases of infectious and invasive etiology, as well as to present the methodology of therapeutic and preventive measures for these pathologies of productive and non-productive animals.

PO 10. To formulate the theoretical and practical foundations of etiopathogenesis, therapeutic and preventive measures for non-infectious pathologies, ionizing radiation and poisoning diseases, to possess the laboratory diagnostics skills and to interpret obtained results

PO 11. To justify the choice of therapeutic measures for various pathologies, taking into account the physiological state and nature of the disease occurrence, to interpret pathological changes in organs and tissues in productive and non-productive animals.

PO 12. To analyze the animal organs and tissues' anatomical and physiological state, the diagnosis and elimination methods of various pathologies, to integrate the medical thinking into professional activity

PO 13. Evaluate information about the state of the environment and working conditions in the workplace, integrate the results of scientific research in the field of occupational safety and health, understand legislative regulations and the nomenclature of document management in veterinary medicine, provide economic justification for veterinary measures, be competent in matters of forensic examination.

PO 14. Formulate the theoretical and practical foundations of environmental protection, ensuring environmental well-being and veterinary safety of animals and products.

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

The educational program contains theoretical training, including the study of cycles of general education, basic and profile disciplines; professional practice, physical culture, etc. The volume of the educational program (EP) is 303 credits, including 263 credits of theoretical training, 24 credits of professional practice, 8 credits of physical culture, and 8 credits of final certification.

The relevance of the developed educational program (EP) lies in the fact that it is harmonized with the requirements of a standard curriculum and the competencies of a first-day graduate (veterinary specialist) The World Organization for Animal Health (OIE), which provides an opportunity to integrate the EP into the international veterinary educational space. The importance of the EP for the national economy is determined by the fact that it trains specialists for the labor market to ensure the veterinary, biological and food security of the country.

The peculiarity of the developed EP is that in terms of structure, consistency of training and components of disciplines, it is 60-70□ coordinated with the training work programs of the world's leading universities in the field of veterinary education (Giessen University named after J. Liebig, University of California Davis, Toulouse National Veterinary School), which will contribute to the professional mobility of students.

The competitive advantages of this EP is that it was developed taking into account the specific proposals of the National Chamber of Entrepreneurs «Atameken», which provides training of specialists adapted to the requirements of regional labor markets in Kazakhstan.

The uniqueness of the EP makes it possible to create conditions for the comprehensive development of the personality of a future veterinary specialist with stable professional competencies, as well as capable of developing social partnership and entrepreneurship.

The regional territorial inspections of the Committee of Veterinary Control and Supervision of the Republic of Kazakhstan, the Republican Veterinary Laboratory, the National Reference Center of Veterinary Medicine, veterinary clinics, agricultural formations took part in the development of the EP.

3 Competence model (portrait) graduate:

students should have the following key competencies:

- possess basic knowledge of natural science (socio-humanitarian and economic) disciplines that contribute to the formation of a highly educated person with a broad outlook and a culture of thinking;

- be able to formulate and practically solve problems in the field of veterinary medicine, the preservation and maintenance of animal and human health, use information technologies in the field of professional activity, teach in educational institutions, successfully carry out research and production activities

- possess the skills to acquire new knowledge necessary for daily professional activity and continuing education in the master's degree.

Learning outcomes are expressed through competencies and are designed based on Dublin descriptors

3.1 Areas of professional activity

A specialist in this field should be prepared for:

- protection of animals from diseases and their treatment;
- diagnostics, prevention and treatment of infectious, invasive and non-infectious diseases of animals, birds and fish bred in farms of various directions and forms of ownership;
- protection of public health from diseases common to animals and humans;
- conducting veterinary and sanitary examination of animal products;
- development and circulation of medicines for animals;
- protection of the environment from pathogens transmitted through sick animals and corpses of fallen animals;
- protection of the territory of the state from the introduction and spread of infectious and exotic diseases from other states;

3.2 Types of professional activity

The types of professional activity are:

- medical;
- production and technological;
- organizational and managerial;
- experimental research;
- scientific research;
- project;
- educational.
- military veterinary service;
- all types of economic entities of agricultural production;
- circuses, racetracks, associations engaged in breeding breeding animals;
- veterinary hospitals, veterinary pharmacies, laboratories, zoos, nature reserves;
- institutions of the state veterinary service;
- slaughterhouses, animal burial grounds, vehicles for transporting animals, premises for keeping animals;

3.3 General education competencies

Disciplines of the mandatory component of the GED cycle:

- aimed at the formation of ideological, civil and moral positions of the future specialist, competitive on the basis of possession of information and communication technologies.

- form skills of self-development and education throughout life;
- upon completion of the study of compulsory disciplines of the GED cycle , the student is able to:

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

- to argue their own assessment of everything that is happening in the social and industrial spheres;

The disciplines of the University component and (or) the component of the choice of the GED cycle amount to at least 5 academic credits, which are aimed at developing students' competencies in the field of economics and law, the basics of anti-corruption culture, ecology and life safety, as well as entrepreneurship skills, research methods.

Descriptors reflect learning outcomes that characterize students' abilities to:

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

- 2) apply knowledge and understanding at a professional level, formulate arguments and solve problems of the studied area;
- 3) to collect and interpret information for the formation of judgments taking into account social, ethical and scientific considerations;
- 4) apply theoretical and practical knowledge to solve educational, practical and professional tasks in the field under 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 in the field under study;
- 7) apply knowledge and understanding of facts, phenomena, theories and complex dependencies between them in the field under study;
- 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 of veterinary specialists at the junction of a number of fields of knowledge.

The EP ensures that graduates acquire basic competencies that meet the requirements of the OIE for specialists. The trajectory of the EP provides for the training of graduates in special competencies in the field of treatment, prevention and control of diseases of various animal etiologies, food hygiene, pharmacy, animal welfare, national and international veterinary legislation and ethics.

Graduates receive practical competencies in the field of organization of veterinary services, veterinary inspection and certification, food safety, risk methodology, analysis of scientific research, ensuring the safe trade of animals and animal products in business.

3.5 Professional competencies

The specialist must:

have an idea:

- about modern factors in the development of the disease; general principles of studying the etiology, pathogenesis of diseases, diagnosis, treatment and prognosis, development of disease prevention measures;

To know:

theoretical bases of classification, specifics of etiology and symptoms, modern diagnostic methods, effective methods of prevention and treatment of animal diseases;

be able to:

to carry out diagnostics, differential diagnostics, treatment and prevention of diseases; to draw up a protocol of pathoanatomic autopsy;

have skills:

- clinical examination of animals, diagnosis;
- treatment and prevention of diseases of animals, birds and fish;
- transportation, reception and delivery of slaughter animals and birds for slaughter;

be competent:

--in the field of diagnosis, treatment and prevention of animal diseases.

4 Bases of passing professional practices

The educational program «Veterinary Safety» includes 4 types of practices that are conducted in parallel with theoretical training or in a separate period.

- 1) Educational practice in the BD cycle;
- 2) Educational and clinical practice in the BD cycle;
- 3) Production practice in the PD cycle;
- 4) Pre-graduate practice in the PD cycle.

Educational practice - veterinary clinic of Saken Seifullin Kazakh Agro Technical Research University, medical and diagnostic centers, veterinary hospitals of Astana, Republican Veterinary Laboratory.

Educational and clinical practice: agricultural formations of Akmola, Karaganda, Almaty, Kostanay, North Kazakhstan, Turkestan regions.

Industrial, pre-graduate practices - agricultural formations of all regions of the Republic of Kazakhstan, district veterinary stations, veterinary hospitals.

5 Structure of the Bachelor's degree program

№	Name of cycles and disciplines	Total labor intensity	
		in academic hours	in academic credits
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 (in English)	150	5
	Political Science and Sociology	120	4
	Cultural studies and psychology.	120	4
	Physical Culture	240	8
		150	5
2)	University component and (or) optional component		
	Economics/ Law and Anti-corruption culture/Ecology/ Life Safety /Entrepreneurship/ Methods of scientific research/	150	5
2	Cycle of basic disciplines (BD)	4530	119
1)	University component	3150	105
	Anatomy of animals and birds	300	10
	Latin veterinary terminology	120	4
	Professionally-oriented (foreign) language	90	3
	Cytology, embryology and histology	150	5
	Animal husbandry	150	5
	Bioorganic chemistry	150	5
	Veterinary genetics	150	5
	Veterinary microbiology and Immunology	150	5
	Private microbiology	150	5
	Veterinary Virology	150	5
	Animal Physiology Animal	150	5
	Biochemistry	150	5
	Clinical diagnostics of animals	150	5
	Feeding animals	150	5
	Veterinary Pharmacology	150	5
	Clinical pharmacology with toxicology	150	5
	Pathological physiology	150	5
	Pathological anatomy of animals	300	10
	Veterinary hygiene and sanitation	150	5
2)	Component of choice (BD)	420	14
	Animal welfare and ethology	90	3
	Herd Health Management		
	Zoology	90	3
	Zoogeography		
	Veterinary Radiobiology	90	3
	Radiation safety of animals		

	Laboratory diagnostics in veterinary medicine Laboratory work in veterinary medicine	150	5
3	Cycle of profile disciplines (PD)	2793	96
1)	University component	1980	66
	Veterinary epidemiology	300	10
	Internal diseases of animals	270	9
	Veterinary obstetrics and gynecology	270	9
	Parasitology and invasive animal diseases	300	10
	Veterinary and sanitary examination	300	10
	Operative surgery.	150	5
	General surgery	150	5
	Private surgery	120	4
	Organization of veterinary business.	120	4
	Cycle of profile disciplines component of choice	813	30
	Veterinary Orthopedics and ophthalmology	90	3
	Veterinary Anesthesiology		
	Forensic examination.	90	3
	Forensic Thanatology.		
	Scientific basis of animal breeding biotechnology. Biotechnics of animal reproduction	90	3
	Infectious diseases of carnivores	90	3
	Infectious diseases of fish and bees		
	Invasive diseases of carnivores	90	3
	Invasive diseases of fish and bees		
	Practical therapy of carnivores	150	5
	Practical therapy		
	Obstetrics of carnivorous animals	150	5
	Diseases of female genital organs		
	Carnivorous Animal Surgery	150	5
	Practical surgery		
	Biometrics in veterinary medicine	90	3
	Bioinformatics		
2	Professional practice	720	24
	Educational practice	150	5
	Educational and clinical practice	150	5
	Production practice	360	12
	Pre-graduate practice	60	2
4	Additional types of training (ATT)		
5	Final certification	240	8
1)	Writing and defending a thesis, graduation project or preparing and passing a comprehensive exam	240	8
	Total	9090	303

Academic calendar 2023-2024

Approve

Chairman of the Academic Council
NJSC "Seifullin KATIUS"

Tireuov K.M.
« 29 » 05 2023 y.

ACADEMIC CALENDAR

for 2023-2024 academic year

by levels of training
(BACHELOR)

1	Presentation week, registration for disciplines	I course August 28 - 31
2	I semester	September 1 - December 15
3	<i>Constitution day</i>	<i>August 30</i>
4	Knowledge Day	September 1
5	<i>Republic Day</i>	<i>October 25</i>
6	<i>Independence Day</i>	<i>December 16</i>
7	Exam session	December 18 - 29
8	Passing FX	December 18 - 29
9	<i>New Year's Holiday</i>	<i>January 1, 2</i>
10	Holidays	January 1-26
11	II semester	January 29 to May 10
12	<i>International Women's Day</i>	<i>March 8</i>
13	<i>Holiday Nauryz</i>	<i>March 21,22,23</i>
14	<i>Holiday of unity of the people of Kazakhstan</i>	<i>May 1</i>
15	<i>Defender of the Fatherland Day</i>	<i>May 7</i>
16	<i>Victory Day</i>	<i>May 9</i>
17	Exam session	from May 13 to May 24
18	Passing FX	May 13 - 31
19	Registration for the summer semester	May 27 - 31
20	Final examination	until June 30
21	Summer semester	from June 3 to July 12
22	Holidays	from May 27 to August 31
23	<i>Capital Day</i>	<i>July 6</i>
	Practice*	

Approved by the Academic Council of NJSC «S. Seifullin KATIU»,
protocol № 16, 29.05. 2023 y.

Note: If it coincides with a weekend or a holiday, the lesson begins on the next working day.

* Types and terms of professional practice are determined by the working Curriculum of Educational Programs.

INTERSTATE AND INTRASTATE POLICY INVESTIGATIONS

PH-gradualizing area	Unglued rigid polyurethane pre-coated	Gradualized area	Smooth boundary	PH - fluid boundaries	Gradualized area

HT, history, fractioning
CP, combustion and charred products
HP, heating and pyrolyzed products

Considered at the meeting of Academic Council of the
 University Protocol № ____ 20 ____ y.
 " " 20 ____ y.

The Ministry of Agriculture of the Republic of Kazakhstan
 NC JSC "S.Seifullin Kazakh Agrotechnical Research University"

APPROVED

Member of the Board
 Vice-Rector for Academic
 NC JSC "KATTU"
 Abisheva R.D.

" " 20 ____ y.

for 2023-2028 academic year
 For the modular education program "Veterinary safety"
 by the speciality/group of educational programmes B083 – Veterinary science
 Degree: Bachelor
 Form of education: Full-time (bachelor 5 year) semester
 Entry year: 01-09-2023

Module code	Discipline cycle	Discipline component	Code of subject	Subject name	Control in the academic period	Number of hours	Distribution of credits per academic period								
							Academic credits	Differentiated	Total	Classroom work	Independent work of students	1 course	2 course	3 course	4 course
1	Linguistic	GER	CS	IYa 1101	Foreign language	5	1	1	5/150		45	20	85	5.	0
2		GER	CS	KRYa 1103	Kazakh (russian) language	5	1	1	5/150		45	20	85	5.	0
3		GER	CS	IYa 1102	Foreign language	5	2	2	5/150		45	20	85	5.	0
4		GER	CS	KRYa 1104	Kazakh (russian) language	5	2	2	5/150		45	20	85	5.	0
5 social and political		GER	CS	PS 1107	Political science and sociology	4	1	1	4/120	15	30	16	59	4.	0
6		GER	CS	KP 1112	Cultural studies and psychology	4	1	1	4/120	15	30	16	59	4.	0
7		GER	CS	IK 1113	History of Kazakhstan	5	1	1	5/150	15	30	20	85	5.	0
8		GER	CS	Fil 2106	Philosophy	5	3	3	5/150	15	30	20	85	5.	0
9 physical culture		GER	CS	FK 1108	Physical education.	2	1	1	2/60		30	8	22	2.	0
10		GER	CS	FK 1109	Physical	2	2	2	2/60		30	8	22	2.	

11																			
12																			
13	general education	GER	CS	FK 2110	Physical education.	2	3	3	2/60	30	8	22	0	2.	0	0	0	0	
14		GER	CS	FK 2111	Physical education.	2	4	4	2/60	30	8	22	0	2.	0	0	0	0	
15		GER	ES	OAK 2114	Basics of anti-corruption culture	5	3	3	5/150	15	30	85	5.	0	0	0	0	0	
16		GER	ES	IP 2114	Innovative entrepreneurship	3			5/150	15	30	85							
17		GER	ES	OEP 2114	Basics of economics and law	3			5/150	15	30	85							
18		GER	ES	VLO 2114	Introduction to leadership in education	3			5/150	15	30	85							
19	professional languages	GER	CS	OTOBZh 2114	Labor protection and basics of life safety	3			5/150	15	30	85							
		GER	CS	IKT 2105	Information and communication technologies	5	4	4	5/150	15	30.0	85							
			BS	UC	POIYa 2211	Professionally-oriented Foreign Language	3	4	4	3/90	12	48	0	3.	0	0	0	0	
																		Modules of specialty/education program	

31			BS	CS	UP 2206															
32	Microbiology and Virology	BS	UC	VMI 2213		Educational practice	1	4												
33		BS	UC	VV 3210	Veterinary Virology	5	5	5												
34		BS	UC	ChM 3214	Private microbiology	4	5	5												
35		BS	UC	KZh 2231	Feeding animals	4	4	4												
36		BS	UC	Zhiv 2225	Animal husbandry	5	4	4												
37	veterinary and sanitary examination	BS	UC	VGS 3212	The veterinary hygiene and sanitation	5	5	5												
38		AS	UC	OVD 3311	Organization of veterinary business	4	6	6												
39		AS	ES	SE 4318	Forensic examination	3	8	8												
40		AS	ES	ST 4318	Forensic thanatology			8												
41		AS	UC	VSE 5309	Veterinary and sanitary examination 1	5	9	9												
42		AS	UC	VSE 5310	Veterinary and sanitary examination 2	5	10	10												
43	veterinary pharmacology and toxicology	BS	UC	VF 3215	Veterinary pharmacology	5	5	5												
44		BS	UC	KFT 3216	Clinical pharmacology with toxicology	5	6	6												
45	animal pathology	BS	UC	PF 3218	Pathological physiology	5	5	5												
46		BS	UC	PAZh 3219	Pathological anatomy of animals 1	5	6	6												
47		BS	UC	PAZh 4220	Pathological anatomy of animals 2	5	7	7												
48	internal non-communicable diseases	BS	ES	LDV 3230	Laboratory diagnostics in veterinary medicine	5	5	5												
49		BS	ES	LDV 3230	Laboratory work in veterinary	5	5	5												

2	Base requirements(BS)		13 5	24	0	0	4050	34 5	675	30	0	72 0	444	1836	5	15	18
	Core subjects(BS/CS)		24	0	0	0	720	0	0	0	0	72 0	0	0	3	0	5
	University component(BS/UC)		10 0	21	0	0	3000	30 0	615	30	0	400	1655	5	14	15	22
	Electives(BS/ES)		11	3	0	0	330	45 0	60	0	0	44	181	0	0	3	0
3	Profession requirements(VRS)		10 1	23	0	0	3030	36 0	600	0	0	404	1666	0	3	0	10
	Core subjects(VRS/CS)		0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	0
	University component(VRS/UC)		68	14	0	0	2040	22 5	420	0	0	272	1123	0	0	0	10
	Electives(VRS/ES)		33	9	0	0	990	13 5	180	0	0	132	543	0	3	0	0
	Total on curriculum		29	4	0	8760	79 5	130	48 5	0	72 0	1072	4388	30	30	30	31
4	Additional courses																
	5	Module of final certification (MoFC)															
	Total including FCS																

Examinations (semester)* - The final form of control on Physical Culture and types of professional practice is a differentiated credit.

The modular curriculum is made in accordance with the standard curriculum of the speciality (approved by the Order of the MES RK from 16.08.2013 № 343). State obligatory standards of education (approved by the Order of the Ministry of Education and Science of the Republic of Kazakhstan from 23.08.2012 № 1080), modular educational programme of the specialty. The modular curriculum was considered and approved at the meeting of the methodical commission of the faculty, Protocol № 20 _____

Жүргенов Жакенбай Сарсенбаевич

**Director of Department of Academic Affairs
Deputy Director of the Department of Academic Affairs**

Dean of the faculty

Ақибеков Оркен Султанхамитович

Муханбеткалиев Ерсын Ергазыевич

Head of the Department

Considered at the meeting of Academic Council of the
University Protocol № _____
“ ” 20 ____ y.

The Ministry of Agriculture of the Republic of Kazakhstan
NC JSC "S.Seifullin Kazakh Agrotechnical Research University"

APPROVED

Member of the Board
Vice-Rector for Academic
NC JSC "KATTU"
Abisheva R.D.
“ ” 20 ____ y.

WORKING CURRICULUM
for 2023-2024 academic year
For the modular education program “Veterinary safety”
by the speciality/group of educational programmes B083 –
Veterinary science
Degree: Bachelor
Form of education: Full-time (bachelor 5 year) semester
Entry year: 01-09-2022

Module type	Module name	Subject name	Distribution of hours		Academic credits	Exams (semester)* (academic period)	Term paper / Course project	Independent work of students with independent work					
			3 Academic period	4 Academic period									
1	General modules	Physical culture	GER CS	PE 2132	Physical education.	2	60	30	60	30	60	30	30
2			GER CS	PE 2133	Physical education.	2	1	150	15	30	20	85	22
3	общественно- политический образовани	GER CS	Ph 2110	Philosophy		5	1	150	15	30	20	85	22
4	general education	GER ES	IE 2128	Innovative entrepreneurship		5	1	150	15	30	20	85	22
5		GER ES	ITLIE 2129	Introduction to leadership in education		5	1	150	15	30	20	85	22
6		GER ES	BOACC 2130	Basics of anti-corruption culture		1	150	15	30	20	85	22	22
7		GER ES	BOLS 2131	Basics of Life Safety		1	150	15	30	20	85	22	22
8		GER ES	BOEAL 2123	Basics of economics and law		1	150	15	30	20	85	22	22
9	Modules of specialty/education programm	BS UC	APAB 2275	Animal physiology and biochemistry 1		4	1	120	15	30	16	59	22
10	animal physiology and biochemistry	BS ES	VGWTBOB 2227	Veterinary genetics with the basics of biostatistics		5	1	150	15	30	20	85	22
11		BS ES	GWTOAB 2273	Genetics with the basics of animal breeding		5	1	150	15	30	20	85	22
12		BS ES	Zoo 2207	Zoology		5	1	150	15	30	20	85	22
13		BS ES	Zoo 2261	Zoogeography		5	1	150	15	30	20	85	22
14		BS UC	APAB 2274	Animal physiology and biochemistry 2		6	2			180	30	30	24
										0	0	0	96

15		BS	CS	EP 2240	Educational practice	1		1	150	15	30		20	85											
16		BS	ES	FOA 2209	Feeding animals	5		1	150	15	30	0	20	85											
17		BS	ES	FAFA 2268	Feed and feed additives		1	150	15	30	0											24	96		
18	Microbiology and Virology	BS	UC	VM 2212	Veterinary microbiology 1	6		2															16	59	
19	internal non-communicable diseases	BS	UC	CDWR 2231	Clinical diagnostics with radiobiology	4		2																	
20	veterinary and sanitary examination	BS	ES	VSEOPPGBA FF 2206	Veterinary-sanitary examination of products of plant growing, beekeeping and fish farming	5		2																	
21		BS	ES	TSAVASEOMA DP 2270	Technology, sanitation and veterinary and sanitary examination of meat and dairy products		2																		
22		BS	ES	VASSDEIT 2271	Veterinary and sanitary supervision during export-import transportation	5		2																	
23			BS	ES	VCATBAT 2241	Veterinary control at the border and transport		2																	
	Total on curriculum					10		198	19	21	210		26	110	117	13	60	180		30	15	61	2	3	
	Weekly average workload at hours					5		0	5	0	4		1	0	5										
	Total credits per semester																								
	Total exams per semester																								
	Total term paper and projects																								
4	Additional courses																								
4.1	Modules of professional practice, which includes																								
	Practical training																								
	Total on practice																								
	Total																								

Examinations (semester)* - The final form of control on Physical Culture and types of professional practice is a differentiated credit.

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State obligatory standards of education (approved by the Order of the Ministry of Education and Science of the Republic of Kazakhstan from 23.08.2012 № 1080), modular educational programme of the specialty.

The modular curriculum was considered and approved at the meeting of the methodical commission of the faculty, Protocol № 20 —

Жүргенов Жакенбай Сарсенбайұлы

Ақибеков Оркент Султанханитович

Муханбеткалиев Ерсын Ерғазымевич

Director of Department of Academic Affairs
Deputy Director of the Department of Academic Affairs
Dean of the faculty
Head of the Department

Considered at the meeting of Academic Council of the
University Protocol № _____
20_____.y.
“ ”

The Ministry of Agriculture of the Republic of Kazakhstan
NC JSC "S. Seifullin Kazakh Agrotechnical Research University"

APPROVED
Member of the Board
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NC JSC "KATIU"
Abisheva R.D.
" 20

WORKING CURRICULUM

for 2023-2024 academic year

For the modular education program "Veterinary safety by the speciality/group of educational programmes B083 -

Veterinary science

Degree: Bachelor
Field of education: Full-time Bachelor 5 year) semester

Entry year: 01-09-2021

10														
11														
12														
13														
14														
Total on curriculum														
Weekly average workload at hours														
Total credits per semester														
Total exams per semester														
Total term paper and projects														
4 Additional courses														
4.1 Modules of professional practice, which includes														
Practical training														
Total on practice														
Total														

products of plant growing, beekeeping and fish farming

Veterinary control at the border and transport

Educational practice

Operative surgery

Veterinary Surgery 1

Veterinary obstetrics and gynecology 1

Veterinary obstetrics and gynecology 1

61

900

90

180

120

510

930

105

180

60

62

31.0

7.0

0.0

2

60

60

2.0

60

60

2.0

60

2.0

Examinations (semester)* - The final form of control on Physical Culture and types of professional practice is a differentiated credit.

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Director of Department of Academic Affairs
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Dean of the faculty

Head of the Department

Жүргенов Жакенбай Сарсенбасевич

Ақибеков Оркен Сұттанханитович
Мұханбетқалиев Ерсын Ергазыевич

Considered at the meeting of Academic Council of the
 University Protocol № _____
 “ ” 20 ____y.

The Ministry of Agriculture of the Republic of Kazakhstan
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WORKING CURRICULUM

for 2023-2024 academic year

For the modular education program “Veterinary safety”
 by the speciality/group of educational programmes B083 –

Veterinary science

Degree: Bachelor

Form of education: Full-time (bachelor 5 year) semester

Entry year: 01-09-2020

Module type	Module name	Subject name	Distribution of hours	8 Academic period	
				7 Academic period	
1	Modules of speciality/education programm	Internal non-communicable diseases	AS UC IAD 4306 Internal Animal Diseases 1	Total 150 15 30.0	85
2	Modules of Specialty	AS UC IAD 4312 Internal Animal Diseases 2			20
3	Veterinary and sanitary Expertise	BS CS EACP 4242 Educational and clinical practice			150
4		AS UC VASEOLP 4307 Veterinary and sanitary examination of livestock products 1			150
5		AS UC VASEOLP 4313 Veterinary and sanitary examination of livestock products 2			150
6	Veterinary surgery	AS UC VS 4305 Veterinary Surgery 2	1 90 15	15.0	12 48
7		AS UC VS 4311 Veterinary Surgery 3	2	120 15	16 59
8	Infectious diseases	BS ES MIV 4229 Management in veterinary	1 150 15	30.0	20 85
9		AS UC VE 4303 Veterinary Epidemiology 1	1 150 15	30.0	20 85
10		AS UC VE 4308 Veterinary Epidemiology 2	2		150 15 30.0
11	obstetrics and gynecology	BS ES FOARB 4230 Fundamentals of animal reproduction	1 150 15 30.0	20 85	20 85

Examinations (semester)* - The final form of control on Physical Culture and types of professional practice is a differentiated credit.

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Director of Department of Academic Affairs
Deputy Director of the Department of Academic Affairs
Dean of the faculty
Head of the Department

Жүргенов Жакенбай Сарсенбасинч Ақибеков Оркен Султанхамитович Мұханбетқалиев Ессең Енгашемінч

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

№	Name of the discipline	Brief description of the discipline (30-50 words)	Number of credits	Generated learning outcomes (codes)										
				PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
University component														
1	Anatomy of animals and birds 1	Studies the general patterns of the structure of the animal body, determines the departments and directions of the animal body. Examines the sections of osteology, syndesmology, myology, dermatology.	5	V										
2	Anatomy of animals and birds 2	Studies the patterns of the structure of the internal organs of animals and the features of topographic data depending on the species. Describes the structure of the digestive, respiratory, urinary, endocrine, immune and reproductive systems of animals. Describes the structure of internal organs and systems. Studies the anatomy of birds.	5	V										
3	Latin veterinary terminology	Examines the issues of reading words and phrases of the Latin language in compliance with the rules, the	4	V										

use of Latin veterinary terminology in professional activities, the implementation of orthographic correct spelling of anatomical and histological and clinical terms. Application knowledge of Latin terminology . Latin alphabet, classification of medical and veterinary terms, rules of lexical and grammatical minimum of veterinary profile; application knowledge of the main characteristics of the part of speech of the Latin language	To form the professional foreign language speech of future specialists to increase the level of professional competence, proficiency in a professional foreign language for the implementation of written and oral information exchange, further development of speech activity. Rules of speech behavior in accordance with situations of professional communication, depending on the style and nature of communication in the social, household and academic spheres.	V	V

5	Cytology, embryology and histology	Studies the issues of general cytology (the device and rules of working with a microscope, types of microscopes, methods of cell research and cell theory), general embryology (gametogenesis, embryogenesis of mammals, birds) and general histology. Determines the classification of animal tissues, features of their development, structure and functions. Examines the issues of private histology (microscopic structure of internal organs).	5	V	V	V	V
6	Animal husbandry	Technology of production of products of individual animal husbandry branches: Biological features and productivity of different animal species, characteristics of breeds bred in Kazakhstan and abroad, their use for the production of a particular type of product in the country, modern technologies of herd reproduction and rearing of young animals.	5	V	V	V	V
7	Bioorganic chemistry	Studies the basic concepts of theoretical organic chemistry. Forms the skills of solving chemical problems,	5	V	V	V	V

			V	V	V	V	V	V
12	Animal physiology	Forms theoretical knowledge on basic studies of the structural and functional organization of animals, homeostasis, principles of nervous and humoral regulation of functions, physiology of the central nervous system and autonomic nervous system, modern ideas about ethology, physiology of the cardiac system, digestive and respiratory systems.	5	V	V	V	V	V
13	Animal Biochemistry	Forms knowledge of the physiological processes occurring in the body of animals. Studies the role and physiology of the endocrine glands, the biological significance of energy and metabolic processes, the processes of excretion of vital products of the body. Provides theoretical and practical knowledge on hormones, enzymes, proteins, nucleosides, nucleotides, DNA, RNA structures, nucleic acid biosynthesis, Aminoacyl-tRNA synthetase.	5	V	V	V	V	V
14	Clinical diagnostics of animals	Studies the issues of diagnostics and differentiation in various	5	V	V	V	V	V

	animal diseases, modern clinical and laboratory methods of systems and organs research. Forms competencies in the methods of X-ray diagnostics: fluoroscopy, radiography, computed tomography, fluorography	V	V	V	V	V
15	Feeding of agricultural animals	Studies the importance and role of animal feeding in the production of animal products, assessment of the nutritional value of feed, methods of zootechnical analysis of feed. Forms skills for the purpose and selection of the correct, normalized feeding of animals, taking into account the type, breed, age, productivity.	5			

		system (analeptics, mainly stimulating the function of the cerebral cortex, medulla oblongata and spinal cord, general ionizing substances).	V	V	V	V	V	V	V	V	V
17	Clinical pharmacology with toxicology	Studies substances that change the sensitivity of afferent nerve endings, lowering and increasing the sensitivity of afferent nerve endings, acting on individual physiological processes in the body, cardiac glycosides and vasodilating substances, diuretics, substances acting on blood, uterine agents acting on liver function, as well as medicinal substances acting on metabolic processes.	5								
18	Pathological physiology	Studies the general patterns of the development of pathological processes in the body of animals in various diseases: general nosology, thanatology, general etiology, the effect of environmental factors, general pathogenesis, the influence of heredity, age constitution, resistance, reactivity on the development of pathology. inflammatory, dystrophic, necrotic, tumor processes and	5								

		compensatory-adaptive, restorative and pathomorphological, histological manifestations in these processes.							
19	Pathological anatomy of animals 1	Studies pathoanatomic and pathohistological changes in organs and tissues in systemic non-infectious diseases of animals of various etiologies: Examines the pathomorphology of the blood system and blood formation, hematopoietic organs, respiratory system, digestive system, liver, kidney diseases, diseases of the endocrine and nervous systems.	5						
20	Pathological anatomy of animals 2	Studies the general clinical and pathomorphological characteristics of infectious diseases, the pathogenesis of local and general changes, their diagnostic significance, mixed infections and complications, the significance during and outcome of infectious diseases of various reactions of the body. Examines the features of pathomorphological and pathohistological changes in	5						

21	Veterinary hygiene and sanitation	Defines the rules of sanitary and hygienic assessment of the system of keeping, feeding and watering animals and birds. Studies the influence of various climatic factors: air temperature, air mobility, atmospheric pressure, radiant energy on the health and productivity of animals and birds.	5	V	V	V	V	V
22	Animal welfare and ethology	Examines the problems of animal welfare under different conditions of detention, behavior and psychology of animals at the level of an individual and as part of associations. Develops skills for assessing the well-being of cattle, poultry, horses and other animals.	3	V	V	V	V	V
23	Herd Health Management	Examines the general principles of managing the health of livestock and aquatic animal herds. Teaches biosecurity measures, the	3	V	V	V	V	V

	animals	protection from exposure to ionizing radiation, and methods of providing assistance to animals exposed to radiation. Develops skills of working with measuring instruments in radiobiology.		V	V	V	V	V	V	V	V
28	Laboratory diagnostics in veterinary medicine	Develops theoretical and practical skills of working in a veterinary laboratory, studies modern methods of laboratory diagnostics of animal diseases. Defines the rules for organizing work in veterinary laboratories, and maintaining the necessary documentation.	5	V							
29	Laboratory work in veterinary medicine	Familiarizes with the structure, activities and ongoing research in state veterinary laboratories, with the definition of safety rules when working in veterinary laboratories.	5	V							
30	Veterinary Epidemiology 1	Studies infection, its types and forms, the theory of the epizootic process, its driving forces and methods of epizootic research, infectious diseases common to all animal species. Forms the development of students' abilities to carry out diagnostics, prevention of	5	V	V	V	V	V	V	V	V

		infectious diseases of animals and carrying out recreational activities.							
31	Veterinary epidemiology 2	Studies infectious diseases of ruminants, horses, pigs, young animals and birds, pathogens, epizootological data, pathogenesis of diseases, manifestations, pathoanatomic changes. Teaches the skills of modern methods of diagnosis, treatment and organization of preventive and antiepizootic measures.	5	V	V	V	V	V	V
32	Internal diseases of animals 1	Studies issues of general prevention and therapy for internal diseases, modern methods and means of physiotherapy, therapeutic techniques, as well as private pathology of diseases of the cardiovascular, respiratory and digestive systems. Forms the skills of developing the abilities of medical thinking and practical skills of conducting medical analysis and interpretation of research results, diagnosis, treatment and prevention of internal diseases of animals.	5	V	V	V	V	V	V

33	Internal diseases of animals 2	Studies the problems of general prevention and therapy of internal diseases of animals, modern methods and means of physiotherapy, methods of treatment, as well as individual pathologies of diseases of the cardiovascular, respiratory and digestive systems. Develops skills in conducting a dispensary examination of animals, analysis and interpretation of research results, the development of medical thinking and practical skills in the diagnosis, treatment and Prevention of internal diseases of animals.	4	V	V	V	V	V	V	V	V
34	Veterinary obstetrics, gynecology 1	Studies anatomical features and functions of reproductive organs of farm animals, specific features of the structure and function of the mammary gland of females of different animal species, the necessary conditions for the normal course of pregnancy, childbirth and the postpartum period. Forms the skills of diagnosis, prevention and treatment of pathology of the genitalia of farm animals.	5	V	V	V	V	V	V	V	V

35	Veterinary obstetrics, gynecology 2	Examines pathological processes in the genital and other organs of females that have arisen after the end of the postpartum period and lead to infertility. Forms theoretical and practical skills for conducting gynecological and andrological studies, organizing a set of measures for the prevention of infertility of animals.	4	V	V	V	V	V
36	Parasitology and invasive animal diseases 1	Studies the ecological patterns of the relationship between parasites and their hosts, transmissible natural focal invasive diseases, classification, life cycles of parasites, innovative approaches to the diagnosis, treatment and prevention of parasitoses caused by them. Forms the skills of modern helminthological diagnostics.	5	V	V	V	V	V
37	Parasitology and invasive animal diseases 2	Studies private helminthology, veterinary acarology, protozoology and entomology, methods of studying animals and samples from them for helminthiasis, arachnoentomosis and protozoosis. Forms theoretical and practical skills in the organization of	5	V	V	V	V	V

38	Veterinary and sanitary examination 1	Studies methods of sanitary and hygienic research of animal products, rules of their veterinary and sanitary assessment. Forms knowledge on the basics of technology and animal hygiene, post-slaughter veterinary and sanitary examination of carcasses and internal organs.	5		V	V	V	V	V
39	Veterinary and sanitary examination 2	Studies veterinary and sanitary examination of carcasses and internal organs in diseases of various etiologies. Forms the skills of conducting veterinary and sanitary examination of slaughter products of various animal species. Studies veterinary and sanitary expertise and the basics of milk production technologies, evaluation of the quality of products obtained from sick animals. Masters the methods of veterinary and sanitary examination of poultry meat, eggs, as well as the	5		V	V	V	V	V

40	Operative surgery	examination of animal raw materials.	Studies anatomical and topographic data of animal organs and tissues, surgery technique. Forms the skills of surgical thinking when performing surgery, identifying surgical pathologies and carrying out therapeutic and preventive measures aimed at preserving the life of animals and increasing their productivity.	5	V	V	V	V	V	V	V
41	General surgery	Provides the student with theoretical knowledge, practical skills, the formation of clinical thinking necessary for the treatment of surgical pathologies aimed at preserving animal life and quality characteristics, as well as increasing productivity.	5	V	V	V	V	V	V	V	V
42	Private surgery	Examines the issues of diagnosis, treatment and prevention of surgical pathology of organs and tissues. Forms the skills of medical thinking when carrying out therapeutic measures for surgical diseases of animals.	4	V	V	V	V	V	V	V	V
43	Organization of veterinary business	Forms the skills of organizing veterinary activities in	4	V	V	V	V	V	V	V	V

		economic entities for the prevention and elimination of animal diseases of infectious and non-infectious etiology.					
44	Veterinary Orthopedics and ophthalmology	Studies the anatomy and physiology of the distal extremities, diagnosis and treatment of diseases. Examines the structure of the organs of vision, its physiology and methods of diagnosis, treatment and prevention of diseases of the eyeball and the protective and adaptive apparatus of the eye.	3				
45	Veterinary Anesthesiology	Provides students with theoretical and practical skills in general and local anesthesia. Studies the methods of anesthesia and the means used for general and local anesthesia, resuscitation issues in case of complications during anesthesia.	3				
46	Forensic examination	Studies the issues of judicial proceedings in cases of disputed cases, intentional falsification, veterinary toxicology and thanatology about court proceedings. Forms knowledge in the documentation of the	3				

47	Forensic Thanatology	examinations carried out.	They form knowledge and skills for solving judicial issues arising in legal, investigative and judicial practice on the basis of knowledge about the structure and logic of the pathoanatomic diagnosis.	3	V V	V V	V V	V V	V V
48	Scientific basis of animal breeding biotechnology	Studies the general biological foundations of animal biotechnology, morphological and functional features of germ cells of eggs and spermatozoa, gametogenesis, spermatogenesis and oogenesis. Masters methods of obtaining sperm and determining its quality, methods of artificial insemination of mares, cows, sheep, goats, pigs, methods of transplantation of animal embryos.	3	V V	V V	V V	V V	V V	V V
49	Biotechnics of animal reproduction	Studies the main issues of reproduction biotehnics. They form the skills of diagnosis and treatment of physiology and pathology of reproductive organs and breast. It is aimed at the formation of specialists' knowledge in the field of obstetric and gynecological	3	V V	V V	V V	V V	V V	V V

	diseases, biotechnics of reproduction and the application of this knowledge to solve problems of herd reproduction.						
50	Infectious diseases of carnivores	Studies infectious diseases of carnivores: the definition of the disease, the history of its study, the causative agent, epizootological features, pathogenesis, clinical signs, pathoanatomic changes, diagnosis and treatment, prevention and control measures. Develops diagnostic skills, general and specific prevention, organization of preventive and antiepizootic measures.	3		V	V	V
51	Infectious diseases of fish and bees	Studies common infectious diseases of fish and bees, epizootiology and pathogenesis. Determines the etiology and epizootic situation of diseases, the specifics of their clinical manifestation, methods of diagnosis and differential diagnosis, the organization of therapeutic, preventive and antiepizootic measures.	3		V	V	V
52	Practical therapy of carnivores	Forms theoretical and practical skills of the peculiarities of the course of	5		V	V	V

		internal diseases of carnivorous animals. Masters modern methods of diagnosis and therapy of internal diseases of carnivores.	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	
53	Practical therapy	Forms the skills of medical thinking and practical ability to use therapeutic techniques in carrying out therapeutic and preventive measures for internal diseases of animals.	5																	
54	Obstetrics of carnivorous animals	Studies anatomical features and functions of reproductive organs of carnivorous animals, specific features of the structure and function of the mammary gland of females of different animal species, the necessary conditions for the normal course of pregnancy, childbirth and the postpartum period. Forms the skills of diagnosing, preventing and treating pathology of the genitals of carnivorous animals.	5																	
55	Diseases of female genital organs	Studies the pathological processes developing in the genitals of females of all animal species, the organization of therapeutic measures when they are -	5																	

		detected. Develops practical skills of diagnosis and treatment using traditional and biophysical methods.					
56	Carnivorous Animal Surgery	Forms theoretical and practical skills of the peculiarities of the course of surgical pathologies in small animals. Defines methods of diagnosis and treatment of surgical diseases.	5	V	V	V	V
57	Practical surgery	Forms medical thinking skills and practical ability to use surgical methods when carrying out treatment and preventive measures for surgical pathologies	5	V	V	V	V
58	Invasive diseases of carnivores	Reviews theoretical knowledge in the field of taxonomy, population dynamics of pathogens and epidemiology of parasites in dogs and cats. Forms practical skills in the diagnosis, monitoring, prevention and treatment of invasive diseases of domestic carnivores.	3	V	V	V	V
59	Invasive diseases of fish and bees	Studies the basic epidemiology and population dynamics of parasitic diseases of fish and bees. Forms practical skills in the prevention, diagnosis and	3	V	V	V	V

analyzing biological data.

**Head of the Department
of «Veterinary Medicine»**

Mukhanbetkaliyev Y.Y.

Employer

Tyulegenov S.B.

**Chairman of the Faculty Council for
Academic Quality**

Shaikenova K.H.

**Dean of the Faculty of Veterinary
Medicine and Animal Husbandry
Technology**

Akibekov O.S.