

**MINISTRY OF AGRICULTURE OF THE REPUBLIC OF KAZAKHSTAN  
S. SEIFULLIN KAZAKH AGROTECHNICAL UNIVERSITY**

**Considered**


at the meeting of the Academic  
Council

S. Seifullin KazATU

Minutes № 19

31.08. 2022

**«Confirm»**  
Chairman of the Board  
NJSC "S. Seifullin Kazakh  
agrotechnical university"  
\_\_\_\_\_ 2022



**EDUCATIONAL PROGRAM  
«6B08201 Animal husbandry»**

Code and classification of the field of education: 6B08 Agriculture and bioresources

Code and classification of training direction: 6B082 Animal Husbandry

Code in the International Standard Classification of Education: 6B0811

Degree/qualification awarded: Bachelor's degree in the educational program "Animal Husbandry"

Period of study: 4 years

The author's team:

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

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Shauyenov Saukymbek - doctor in agricultural sciences, professor of the department "Technology of production and processing of livestock products" *Prof*

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Saginbaeva Mahabbat Borashevna, candidate in agricultural sciences, associate professor of the department "Technology of production and processing of livestock products" *Prof*

Mukhametzharova Ilmira Ermekovna, master of agricultural sciences, assistant of the Department "Technology of production and processing of livestock products" *Prof*

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The team of authors was approved by the order of the AO "S. Seifullin KATU" № 932 H from 12.12.2018 (order with changes № 517-H from 4.10.2022).

**Educational program 6B08201 «Animal husbandry»** considered at the meeting of the department "Technology of production and processing of livestock products"

Minutes № 1 of august 27, 2022

approved by the "Veterinary and animal husbandry technology" Faculty Council

Minutes № 1A of august 27, 2022

## The content of the educational program

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## **1. Passport of the educational program**

### **1.1 Educational program purpose**

Training of highly qualified and competitive specialists capable of monitoring, applying theoretical knowledge and practical skills in all sectors of livestock.

### **1.2 The formed educational outcomes**

**ON 1.** To know the basic concepts of economic theory, knowledge of the main events in the history of animal husbandry, as the consumption of livestock products per capita; to own the method of analysis of economic phenomena and processes, modern methods of mathematical statistics, to collect and process statistical data; to know the basics of production management in the management of livestock organizations;

**ON 2.** To understand the content of any information; skills to express their thoughts in writing and orally (listening, speaking, reading and writing); to demonstrate knowledge of foreign languages for special purposes and professional terminology for production activities in the livestock sector;

**ON 3.** To know the anatomical and morphological structure; to understand features and patterns of physiological processes and functions of individual systems of the organism of agricultural animals and poultry; to use physiological, biological, biochemical, morphological research methods for various species of animals;

**ON 4.** To demonstrate the structure and properties of organic and inorganic substances; to understand patterns of chemical processes, metabolism and energy in animals; to use general theoretical and experimental principles and methods of inorganic and organic chemistry;

**ON 5.** To understand theoretical and practical bases of forage production; to know characteristics of the main natural forage crops for drawing up norms and diets of feeding of animals; to have skills to develop norms of feeding and calculation of diets for farm animals by means of specialized computer programs.

**ON 6.** To know the basic laws of inheritance of signs and principles of heredity; to demonstrate knowledge of chromosomal theory of heredity; to understand the role of heterosis in increasing the productivity of agricultural animals and poultry; to use the genetic parameters of breeding, breeding work in livestock industries;

**ON 7.** To know the principle of operation of machines and equipment for primary processing of raw materials of animal origin; to demonstrate knowledge of complex mechanization of production processes, such as milking cows and primary processing of milk and meat; to realize the sanitary and hygienic assessment of various methods of removal, storage and disinfection of manure;

**ON 8.** To demonstrate knowledge in the biological characteristics of different species of cattle and small ruminant; to have skills to characterize animal breeds and use them in agricultural practice;

**ON 9.** To understand questions in insemination of animals; to demonstrate knowledge to identify signs of pregnancy; the skills of diagnosis, prevention, treatment and measures of liquidation of illnesses of animals of different ethology; to know the basis of veterinary;

**ON 10.** To understand of the meaning of rabbit breeding, to know the history, the status and prospects of rabbit breeding; to collect information about assessing the productive characteristics of rabbits;

**ON 11.** To use knowledge of the biology of the bee family; to understand of role and importance of the bee industry in the agro-industrial complex; to demonstrate knowledge to analyze the situation and apply technological methods to obtain bee products;

**ON 12.** To know the history, current state, prospects and objectives of horse breeding; to apply the skills of training horses for various equestrian competitions;

**ON 13.** To demonstrate knowledge of the origin of poultry, lines of crosses of chickens, ducks, geese, turkeys and Guinea fowl; to understand their role in the production of meat of different species of poultry; to apply the skills of breeding and breeding of poultry of different species; to know of reproduction technologies of poultry of different species.

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

The educational program "Livestock" was created on the basis of the request of employers in connection with the increased need for specialists who have general cultural, professional and profile competencies in the field of livestock production, contributing to its social mobility and demand in the labor market.

The peculiarity of the program being implemented is to strengthen fundamental knowledge and apply an interdisciplinary approach for the development of professional disciplines that combine knowledge and competencies in the field of animal husbandry. The educational program was developed in accordance with the National Qualifications Framework, professional standards, agreed with the Dublin descriptors and the European Qualifications Framework and agreed by the State Educational Standard of the Ministry of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604, taking into account the recommendations of professors of the Agro-ParisTech University, France.

The educational program is focused on providing comprehensive and high-quality training of competitive, highly qualified specialists capable of solving theoretical and practical problems of professional activity in modern conditions based on the development of skills and abilities necessary for a future specialist in combination with the requirements of advanced technologies.

The uniqueness of the educational program is the introduction and application of dual forms of training for practical training of professional disciplines directly at enterprises and farms of different forms of ownership, studying the issues of growing, feeding animals and birds, conducting agricultural operations, etc. (on the basis of the experimental station within North-Kazakhstan region "agricultural experimental station" and advanced farms of the Republic of Kazakhstan).

The educational program includes theoretical training in the amount of 218 credits and practical training in the amount of 10 credits and final control - 12 credits. At the same time, the student must master 51 credits or 1530 hours for the mandatory component, 112 credits or 3360 hours for the based disciplines and 60 credits or 1800 hours for the profile disciplines.

## **3 Competence model (portrait) of a graduate**

A graduate of the EP is a production manager who organizes the work of the livestock industry, using modern approaches and methods of production technology and processing of livestock products.

The graduate must know: the basics of the legislation of the Republic of Kazakhstan in the field of professional activity; innovative technologies for the production of livestock products; modern feed production technologies; new methods of conducting breeding work, evaluation of large and small cattle; technology for processing animal by-products; the basics of farming management; the basic principles of business planning at enterprises for the production of livestock products; digital technologies in animal husbandry; basic principles of marketing, commercial transactions in the enterprise.

A graduate should be able to: apply the knowledge, skills and abilities acquired in the process of training in professional activities; plan, organize production activities to obtain high-quality livestock products; manage existing technological processes based on a systematic approach to analyzing the quality of products and raw materials; work with information technology management in the economy; use innovative methods and means in practice to increase production; analyze the balance of fodder, develop schemes for pasture rotation, green conveyor, technologies for harvesting, storing and using different types of fodder.

### **3.1 Areas of professional activity**

The area of professional activity of the bachelor of agriculture of the educational program "Livestock" in the field of education 6B08 "Agriculture and Bioresources", in the direction of preparation 6B082 - "Livestock" is the selection and reproduction of farm animals, the technology of livestock production, the primary processing of animal raw materials in farms of various forms ownership, management of the production of livestock products using innovative technologies, organization of exhibitions, auctions of farm animals and birds, export and import of livestock products.

### **3.2 Types of professional activity**

The types of professional activities of the bachelor of agriculture of the educational program "Livestock" in the field of education 6B08 "Agriculture and bioresources", the direction of training 6B082 - "Livestock" are:

- production and technological,
- organizational and managerial,
- experimental research,
- educational pedagogical activity in secondary vocational educational institutions in the direction of animal husbandry.

### **3.3 General educational competencies**

Upon completion of the study of the compulsory disciplines of the Oriented basis of action cycle, students should: be able to communicate in oral and written forms in Kazakh, Russian and foreign languages to solve problems of interpersonal, intercultural and industrial (professional) communication; evaluate the surrounding reality on the basis of worldview positions formed by knowledge of the foundations of the philosophy of philosophical knowledge; show a civil position based on a deep understanding and scientific analysis of the main stages, patterns and use the methods and techniques of historical description to analyze the causes and consequences of events in the modern history of Kazakhstan; know the methods of scientific research; apply academic writing skills; assess situations in various areas of interpersonal, social and professional communication, taking into account basic knowledge of sociology, political science, cultural studies and psychology; use various types of information and communication

technologies in personal activities: Internet resources, cloud and mobile services for searching, storing, processing, protecting and disseminating information.

### **3.4 Core competencies**

Upon completion of the study of the basic disciplines of the database cycle, students should: be able to use the basics of natural science knowledge and methodology to identify production problems and solve professional problems and have the ability to apply modern methods and techniques for keeping, feeding, breeding and efficient use of animals and birds; the ability to collect, analysis and interpretation of materials in the field of animal husbandry and poultry farming; the ability to use modern information technologies and scientific achievements in assessing the quality of feed and products; the ability to justify the adoption of specific technological solutions, taking into account the characteristics of the biology of animals and birds; the ability to use the rules of safety, industrial sanitation, fire safety and labor protection standards; the ability to apply modern means of automation and mechanization in animal husbandry.

### **3.5 Professional competencies**

Upon completion of the study of the major disciplines of the Major disciplines cycle, students should: be able to apply various theoretical and practical methods to analyze and solve production situations; apply existing and new technologies in the field of growing agricultural animals; apply existing modern and new innovative technologies in the field of livestock production; have knowledge of economic aspects, issues of quality and safety of the products obtained; have communication skills and an internal need to maintain professional competence; have knowledge of the laws relating to the cultivation of animals and the technology of production of milk, beef, horsemeat, lamb; be flexible and mobile in various conditions and situations related to professional activities and modern methods for the production and processing of animal products; determination of breeding and productive qualities of farm animals; methods of marketing research and information.

## **4 Base of professional practice**

The educational program provides for the following types of practice: training in the discipline "General Biology of Organisms" - 2 credits each, industrial - 6 credits, pre-diploma practice - 2 credits, which are a university component and are a type of training sessions directly focused on professional and practical training students.

The passage of professional practices for students is planned mainly in the spring and summer periods, in the farms of large agricultural enterprises, peasants, farms in various regions of the republic.

The following are used as bases of production practice:

1) Educational practice: educational and economic clinic and campus of KATU. S.Seifullina

2) Industrial practice: LLP "Agrofirma Rodina", JSC Republican Center for breeding in animal husbandry "Asyl Tulik", LLP "Ush Bulak - 2005", farm "Batai Shu", LLP "Eurasia Invest LTD", farm "Shaushen", Izhevsk production cooperative, Pasika farm, Bauyrzhan farm, Zerenda Pedigree Farm LLP, Zholdasbay-Agro Pharmaceutical Holding Farm, NGO Republican Chamber of Kazakh White-Headed Breed, Tolay LLP -2", LLP "Uryupinsky and K", LLP "Altyndan", LLP "Mambetov and K", LLP "Astrakhan bird factory", LLP "Enbek", Individual entrepreneur "Nurzhamal" LLP "Capital ProjektsLTD", JSC "Astana Onim" and etc

3) Undergraduate practice: all agricultural enterprises and commodity farms of various forms of ownership in Akmola, Karaganda and North Kazakhstan regions and other regions of the Republic of Kazakhstan.

For persons with disabilities, the choice of places for internships is consistent with the requirement of their accessibility for these students and the state of health.

## 5 Structure of the educational program

№	Name of cycles and disciplines	Total labor intensity	
		in academic hours	in academic credits
1	2	3	4
<b>1</b>	<b>Cycle of general education disciplines</b>	<b>1680</b>	<b>56</b>
	<b>Required component</b>	<b>1530</b>	<b>51</b>
	History of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
	Kazakh (Russian) language	300	10
	Information and communication technologies	150	5
	Political Science and Sociology	120	4
	Cultural studies and psychology	120	4
	Physical Culture	240	8
2	University component	150	5
	Labor protection and basics of life safety	150	5
<b>2</b>	<b>Cycle of basic disciplines (BD)</b>	<b>3360</b>	<b>112</b>
	<b>University component</b>	<b>2160</b>	<b>72</b>
	Professionally-oriented Foreign Language	90	3
	Professional Kazakh (Russian) language	90	3
	Animal Morphology	90	3
	Inorganic and organic chemistry	120	4
	Analytical and physical and colloid chemistry	150	5
	Higher Mathematics*	300	10
	Bases of physics	120	4
	Bases of thermodynamics and electromagnetism	150	5
	Molecular and cellular biology	240	8
	Genetics, ontogenesis, phylogeny	150	5
	General biology of organisms	210	7
	Breeding and selection of agricultural animals	150	5
	Feeding of agricultural animals	150	5
	Zoohygiene the basics of designing livestock facilities	90	3
	Educational practice in the discipline "General	60	2



	biology of organisms"		
	<b>Component of choice</b>	<b>1200</b>	<b>40</b>
	Animal Physiology	90	3
	Python language and data analysis	90	3
	Forage production with fundamentals of agronomy and botany	90	3
	Mechanization of livestock production	90	3
	The fundamentals of Veterinary science	90	3
	Production management	90	3
	Physical and chemical research methods	90	3
	Biophysics	120	4
	Methods of Mathematical Modeling	150	5
	Obstetrics and biotechnology of reproduction	90	3
	Statistical analysis and data visualization	90	3
	Digital technologies in animal husbandry	120	4
<b>3</b>	<b>Cycle of profile disciplines (PD)</b>	<b>1800</b>	<b>60</b>
	<b>University component</b>	<b>930</b>	<b>31</b>
	Cattle breeding technology of milk and beef production	150	5
	Production technology of animal husbandry products	90	3
	Poultry, technology of poultry products	150	5
	Horse breeding, production technology of horse meat and cumis	150	5
	Sheep breeding, technology of wool, mutton production	150	5
	Internship	180	6
	Pregraduation practice	60	2
	<b>Component of choice</b>	<b>870</b>	<b>29</b>
	Bee keeping	90	3
	Technical regulation of animal husbandry products	120	4
	Commodity and expertise of animal raw materials	90	3
	Goat breeding, production technology of milk, meat, wool and cashmere	90	3
	Primary processing technology of animal origin raw materials	120	4
	Processing and storage technology of milk and meat	180	6
	Camel breeding, production technology of shubat, meat and wool	90	3
	Sport horse breeding	90	3
<b>4</b>	<b>Additional types of education</b>		
	<b>Final attestation</b>	<b>360</b>	<b>12</b>

Writing and defending a diploma thesis (project) or preparing and passing a comprehensive exam	360	12
<b>Total</b>	<b>7200</b>	<b>240</b>

## Appendix 1. Academic Calendar

**Confirmed**  
 Acting Chairman of the Academic Council  
 NAO 'S.Seifullin KATU'  
 E.N.Nysanbayev  
 05 \_\_\_\_\_ 2022

**ACADEMIC CALENDAR**  
 for 2022-2023 academic year  
 in areas of Bachelor degree training

<b>Beginning of 1st trimester</b>		<b>1 September</b>
1	Presentation week	from 1 September to September 2 <b>(from August 29 to September 2 for 1 course)</b>
2	<i>Constitution day</i>	<i>30 August</i>
3	<i>The day of knowledge</i>	<i>1 September</i>
4	Examination session	from 14 to 25 November
5	<i>The day of the First President</i>	<i>of 1 December</i>
6	FX delivery	from 14 November to 9 December
7	<i>Independence day</i>	<i>16 December</i>
8	Holidays	from 28 November to 31 December
9	<i>The New year's holiday</i>	<i>January 1,2,3</i>
<b>Beginning of 2nd trimester</b>		<b>1 January</b>
10	<i>Christmas</i>	<i>7 January</i>
11	<i>International Women's Day</i>	<i>on 8 March</i>
12	<i>Nauryz holiday</i>	<i>21,22,23 March</i>
13	Examination session	from March 13 to 24 March
14	FX delivery	from March 13 to 31 March
15	Holidays	from March 27 to March 31
<b>Beginning of 3rd trimester</b>		<b>1 April</b>
16	<i>Holiday of Unity of Nations of Kazakhstan</i>	<i>1 May</i>
17	<i>Defender is day</i>	<i>7 may</i>
18	<i>Victory Day</i>	<i>9 may</i>
19	Examination session	from 12 June to 23 June
20	Holidays	from 26 June to 31 August
21	FX delivery	from 12 June to 30 June
22	Enrollment for a trimester	from 26 June to 30 June
23	Final examination	until June 30
24	Summer trimester	from 3 June to 11 August
25	<i>Capital Day</i>	<i>6 July</i>

Approved by the Academic Council of the NAO 'S.Seifullin KATU',  
 Protocol No. 14 of 13.05 2022.

☑ **Note:** If it concurs with a weekend or a holiday, study begins on the next working day.

Appendix 1 to the Academic Calendar  
 Approved by the Academic Council of the NAO "S.Sейfullin KATU", Protocol No 14 of 13.05.2022

Schedule of the educational process for the 2022-2023 academic year for undergraduate specialties of the Faculty of Veterinary and Animal Husbandry Technology

Course	Semester	September									October									November									December									January									February									March									April									May									June									July									August																													
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10																													
I	PW																																																																																																																																	
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|--|---------------------------|----------------------------------|
| PW - presentation week                       | Ep - educational practice | MT - military training           |
| P - up-graduate practice/production practice | Pp - production practice  | Sr - submission of reports       |
| Ex - examination session                     | H - Holidays              | RD - Registration for discipline |
| S - summer trimester                         | DFx - delivery of FX      |                                  |
| SET - state exams and thesis defense         |                           |                                  |
| Cp - clinical practice                       |                           |                                  |

- Holidays**
- 30 august - Constitution Day
  - 1 december - Presidents Day
  - 16, 17 December - Independent Day of RK
  - 1, 2 january - New Year
  - 7 january - Merry Christmas
  - 8 march - International Woman day

- 21, 22, 23 march - Nauryz Holiday
- 1 may - Unity Day of people of the RK
- 7 may - Fatherland Defenders Day
- 9 may - Victory Day
- 6 july - Nur-Sultans Day







Additional modules beyond qualification																																		
Modules of choice																																		
Scientific research																																		
56	BS	U	RSSZh 3210	Breeding and selection of agricultural animals	5	7	7		7	5/150	20	30.0										5.0												
57	BS	U	KSZh 3211	Feeding of agricultural animals	5	8	8		8	5/150	20	30.0										5.0												
58	BS	U	ZOPZh 3212	Zoohygiene the basics of designing livestock facilities	3	9	9			3/90	10	20.0									3.0													
59	BS	ES	YaPAD 2285	Python language and data analysis	1	4		4		1/30	10	10.0							1.0															
60	BS	ES	YaPAD 2286	Python language and data analysis	2	5	5			2/60	20	20.0							2.0															
61	BS	ES	KOAB 3218	Forage production with fundamentals of agronomy and botany	3	7	7			3/90	10	20.0										3.0												
62	BS	ES	MPPZh 3220	Mechanization of livestock production	3	7	7			3/150	20	30.0										3.0												
63	BS	ES	OV 3221	The fundamentals of Veterinary science	3	7	7			3/90	10	20.0										3.0												
64	BS	ES	PM 3222	Production management	3	7	7			3/90	10		20									3.0												
65	BS	ES	FHMI 3234	Physical and chemical research methods	3	7	7			3/90	30	40.0										3.0												
66	BS	ES	Bio 3222	Biophysics	4	7	7			4/120	50	50.0										4.0												
67	BS	ES	MMM 3222	Methods of Mathematical Modeling	2	7	7			2/60	10		10									2.0												
68	BS	ES	ABR 3223	Obstetrics and biotechnology of reproduction	3	8	8			3/90	10	20.0										3.0												
69	BS	ES	MMM 3258	Methods of Mathematical Modeling	2	8	8			2/60	10		10									2.0												
70	BS	ES	SAVD 3229	Statistical analysis and data visualization	3	8	8			3/90	30	40.0										3.0												
71	BS	ES	MMM 3267	Methods of Mathematical Modeling	1	9	9			1/30	5		5									1.0												
72	BS	ES	CTZh 3239	Digital technologies in animal husbandry	4	9	9			4/120	20	20.0										4.0												
73	AS	U	STPMG 3302	Cattle breeding technology of milk and beef production	5	9	9		9	5/150	20	30.0										5.0												
74	AS	U	TPPZh 3315	Production technology of animal husbandry products	3	9	9			3/90	10	20.0										3.0												
75	AS	U	PTPPP 4301	Poultry, technology of poultry products	5	10	10		10	5/150	20		30									5.0												
76	AS	U	KTPKK 4303	Horse breeding, production technology of horse meat and curmish	5	11	11			5/150	20		30									5.0												
77	AS	U	OTPSHB 4304	Sheep breeding, technology of wool, mutton production	5	11	11			5/150	20		30									5.0												
78	AS	ES	Pohe 3314	Bee keeping	3	8	8			3/90	10		20									3.0												
79	AS	ES	TRPZh 3310	Technical regulation of animal husbandry products	4	8	8			4/150	20	30.0										4.0												
80	AS	ES	TEZHS 3311	Commodity and expertise of animal raw materials	3	8	8			3/90	10	20.0										3.0												
81	AS	ES	KTPMMSHP	Goat breeding, production technology of milk, meat, wool and	3	10	10			3/90	10		20									3.0												
82	AS	ES	TPOShP 4307	Primary processing technology of animal origin raw materials	4	10	10			4/120	20	20.0										4.0												
83	AS	ES	TPHMM 4308	Processing and storage technology of milk and meat	8	10	10			8/180	20	40.0										8.0												
84	AS	ES	VTPSHMSH	Camel breeding, production technology of shubat, meat and wool	3	10	10			3/90	10		20									3.0												
85	AS	ES	SK 4309	Sport horse breeding	3	11	11			3/90	10		20									3.0												
Weekly average workload at hours																																		
1	General education subjects(GER)				51	12	12	0	1530	120	50	560	0	0	202	598	19	7	6	6	5	8	0	0	0	0	0	0						
	Core subjects(GER/CS)				51	12	12	0	1530	120	50	560	0	0	202	598	19	7	6	6	5	8	0	0	0	0	0	0	0					
	University component(GER/UC)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	Electives(GER/ES)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
2	Base requirements(BS)				117	33	12	2	3570	815	770	255	0	60	494	1176	0	14	15	14	12	15	26	13	8	0	0	0	0					
	Core subjects(BS/CS)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	University component(BS/UC)				77	19	11	2	2310	560	480	210	0	60	333	667	0	14	15	13	10	12	5	5	3	0	0	0	0					
	Electives(BS/ES)				40	14	1	0	1280	255	290	45	0	0	181	509	0	0	0	1	2	3	21	8	5	0	0	0	0	0				
3	Profession requirements(VRS)				60	13	0	2	1830	200	160	170	0	240	212	848	0	0	0	0	0	0	0	10	8	27	13	2	2					
	Core subjects(VRS/CS)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	University component(VRS/UC)				31	5	0	2	930	90	50	90	0	240	92	368	0	0	0	0	0	0	0	0	8	11	10	2	2					
	Electives(VRS/ES)				29	8	0	0	900	110	110	80	0	0	120	480	0	0	0	0	0	0	0	10	0	16	3	0	0	0				
4	Disciplines for the formation of professional competencies(BDFPC)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	Core subjects(BDFPC/CS)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	University component(BDFPC/UC)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Electives(BDFPC/ES)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5	Disciplines of personal development and the formation of leadership qualities(BDPD)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Core subjects(BDPD/CS)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	University component(BDPD/UC)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Electives(BDPD/ES)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total on curriculum				228				24	4	6930	1135	980	985	0	300	908	2622	19	21	21	20	17	23	26	23	16	27	13	2	2			
6	Additional courses																																	
7	Module of final certification (MoFC)																																	
	Total including FCS																																	
												Number of credits				Semester				Number of hours				Number of weeks										
												12				360.0				4140.0														
												240																						



**Appendix 3. Matrix of achievability of the formed learning outcomes according to the educational program with the help of academic disciplines**

№	Name of the discipline	Brief description of the discipline	Number of credits	Generated learning outcomes												
				ON 1	ON 2	ON 3	ON 4	ON 5	ON 6	ON 7	ON 8	ON 9	ON 10	ON 11	ON 12	ON 13
<b>Cycle of general education disciplines Required component</b>																
1	History of Kazakhstan	The discipline studies the characteristics of history, the specifics of historical processes and phenomena. The evolutionary path of creating a nation-state. Historical origins of the formation of Kazakhstan: nature, measures and consequences. Feats and losses of Kazakhstanis in the fight against fascist aggression. The apogee of the "cult of personality" and the influence of the "thaw" on the socio-political sphere. Socio-economic and spiritual "stagnation". Environmental problems in Kazakhstan. Attempts to "perestroika" Soviet Kazakhstan. Formation of the state structure of the Republic of Kazakhstan. Kazakhstan's model of economic development. Ethnodemographic processes and strengthening of interethnic harmony.	5													
2	Philosophy	The subject, purpose and objectives of philosophy.	5													

		Philosophy and worldview. The main stages of the development of world and Kazakh philosophical thought. The concept of worldview, its structure and main functions. Historical types of worldview. The structure of philosophical knowledge. The specifics of philosophical thinking. Reflexivity and criticism as fundamental characteristics of classical philosophy. Heuristic and creative nature of philosophical thinking.													
3	Foreign language	Teaching practical knowledge of everyday speech and the language of the specialty for the active use of a foreign language, both in everyday and professional communication. Word-formation models, contextual meanings of polysemous words, terms and lexical constructions of a sublanguage corresponding to the profile of the specialty being studied.	10												
4	Kazakh (Russian) language	Fundamentals of the theory of speech communication; to study the rules of the Kazakh and Russian languages. Free and correct presentation of their thoughts in oral and written form; to argue their point of view; in the process of studying	10												

		the Kazakh and Russian languages, students will be able to freely formulate conclusions, build their own argumentation, express and justify their position. Reviewing a scientific text. Culture of oral speech (general concept). The culture of speech behavior in the professional sphere. Improving the ethics of speech behavior (speech etiquette, business etiquette).													
5	Information and communication technologies	General concepts of computer technologies used in the profession. The necessity and possibility of introducing modern computer technologies into professional activity. MS Word word processor. Basic document settings. Theoretical and practical foundations of solving problems using the Microsoft Excel spreadsheet processor. The main technologies for creating a presentation in the PowerPoint environment. Databases. MS Access database management system. Basic concepts of operating systems. Networks and telecommunications. Types of computer networks. Global computer network Internet. Web application development technologies. The use of services and information resources in	5												

		professional activities Information security and its components. Antivirus programs.														
6	Political Science and Sociology	The module involves the study of four scientific disciplines – sociology, political science, cultural studies, psychology, each of which has its own subject, terminology and research methods. Interactions between these scientific disciplines are carried out on the basis of the principles of informational complementarity; integrativity; methodological integrity of research approaches of these disciplines; commonality of result-oriented teaching methodology; unified system representation of the typology of learning outcomes in the form of formed abilities.	4													
7	Cultural studies and psychology	The module involves the study of four scientific disciplines – sociology, political science, cultural studies, psychology, each of which has its own subject, terminology and research methods. Interactions between these scientific disciplines are carried out on the basis of the principles of information complementarity; integrativity; methodological integrity of research approaches	4													

		of these disciplines; generality of the methodology of learning, result-oriented; unified system representation of the typology of learning outcomes as formed abilities.														
8	Physical Culture	The purpose and objectives of physical training in the chosen sport. Concepts, definitions. Means, methods for the development of physical qualities and optimization of functional training. Testing, evaluation of the dynamics of the development of physical qualities (speed, strength, flexibility, endurance, agility, coordination of movements). Preparation of physiological systems: cardiovascular, respiratory, neuromuscular, sensory, bioenergetic. The role of functional fitness of the body in the manifestation of physical qualities.	8													
University component																
1	Labor protection and basics of life safety	Knows the labor protection management system at computer facilities, regulatory frameworks, fire safety fundamentals; understands the function of labor protection management, supervision and control over the state of labor protection, ergonomic foundations of labor;	5		v					v						

		applies sanitary requirements to the device at computer facilities, protection from harmful radiation; analyzes industrial lighting, electrical safety in the operation of electronic computers.														
<b>Cycle of basic disciplines University component</b>																
1	Analytical and physical and colloid chemistry	Knows equilibrium in a homogeneous system; understands stages of analytical processes: selection and preparation of samples for analysis, measurement steps, evaluation of measurement results; applies gravimetric analysis, colloid chemistry, disperse systems, structure of the micelle, physico-chemical methods of analysis; evaluates buffer capacity, chemical thermodynamics and equilibrium, chemical kinetics and electrochemistry, volumetric analysis, two, three and multi-component systems.	5				v									
2	Higher Mathematics*	Knows all the necessary sections of mathematics: elements of mathematical logic and number theory; understands complex numbers, linear algebra for the finite-dimensional case; applies differential and integral calculus of functions of one variable, ordinary differential equations of	10	v												

		the first and second order, series theory, introduction to probability theory, numerical solution of mathematical tasks.														
3	Genetics, ontogenesis, phylogeny	Knows the area of genetic information and its meaning; understands the molecular nature and way of expressing genetic information, development, developmental determinism with its genetic aspects; analyzes its critical importance at the cellular level and its central role in heredity, growth and development of the organism, from fertilization to adulthood, and until the end of life, study of changes in genetic information, from the molecular nature of various mutations to the evolution of living organisms, including changes in the genome of individuals and populations; evaluates models of population genetics and mechanisms of speciation.	5		v			v								
4	Zoohygiene the basics of designing livestock facilities	Knows hygiene of the air environment, soil, water and drinking animals; understands zoo-hygienic requirements for feed, hygiene of transportation, keeping, feeding and care of farm animals; applies sanitary and hygienic requirements for the preparation of feeding, storage, transportation of feed,	3		v			v								

		slaughter and primary processing of products; evaluates the sanitation of livestock facilities.														
5	Feeding of agricultural animals	Knows the feeding of farm animals; understands chemical composition and digestibility of feed; applies methods of determination, digestibility and assimilation of feed nutrients; analyzes a comprehensive assessment of the nutritional value of feed, classification of feed and feed products; green and coarse feed, juicy and concentrated feed; synthesizes rules of normalized feeding of farm animals and preparation of diets.	5			v			v							
6	Molecular and cellular biology	Knows the structure of molecules in living organisms before they function inside cells; understands the functioning of living organisms at the micro level, using the concepts of chemistry and physics; applies the properties of membranes and their molecular organization in connection with the organization of cells; analyzes the laws of kinetics and thermodynamics with the main features of cellular bioenergetics; evaluates the problems of heredity and variability at the level of the molecular organization of the organism.	8			v			v							



7	Animal Morphology	Knows the anatomical structure of the organism of farm animals and its organs; understands features of the body structure of various types of farm animals, basics of cell structural organization, body tissues of farm animals; applies the basics of cytology, general and private embryology and histology, the nervous system, the circulatory system and lymph formation, the immune system, respiration, digestion, lactation, metabolism, energy, reproduction process.	3			v									
8	Inorganic and organic chemistry	Knows the basic laws of chemistry, structure and properties of matter, regularities and features of chemical processes, thermodynamics, solutions, properties of elements; understands limit and unsaturated aliphatic hydrocarbons, aromatic hydrocarbons, halogen-Derived hydrocarbons, oxygen-and nitrogen-containing organic compounds: alcohols and esters, aldehydes and ketones, and carboxylic acids; applies general concepts of oxo-and amino acids, amines and diazo compounds.	4			v									
9	General biology of organisms	Knows the general biology of organisms studies the general laws of life phenomena for all	7			v		v		v					

		organisms; understands the biology of living organisms, plant ecology, animal ecology, the biology of bacteria and fungi, their interactions with other organisms and soil biocenosis; analyzes the mechanisms of living organisms on specific examples of biological functions related to zoology, botany, animal physiology and plant physiology; evaluates the scientific and practical (eg agronomic) importance of the topics under consideration.													
10	Bases of thermodynamics and electromagnetism	Knows the basic concepts, research methods and parameters of thermodynamic systems; understands equilibrium and nonequilibrium processes, reversible and irreversible processes, polytropic processes, entropy, the second law of thermodynamics, phenomenon of transfer, the main task of electrostatics, electromagnetism; applies Gauss's theorem, capacitors, electric and magnetic fields, laws of Ohm; analyzes elements of geometric and wave optics, quantum optics, atomic and nuclear physics.	5						v						
11	Bases of physics	Knows the branch of physics that studies the movement of material bodies and the interaction between them,	4						v						

		fundamentals of thermodynamics; understands the elements of the mechanics of liquids and gases, the mechanics of solids and elastic bodies, mechanical vibrations and waves; applies dynamic and kinematic methods for describing mechanical systems, conservation laws in mechanics, basic laws of hydrodynamics, laws of statistical physics; analyzes ideal gases, real gas physics, atmospheric air.														
12	Professionally-oriented Foreign Language	Knows the basics of reading, translation, writing, listening and speaking a foreign language; understands the special topics; applies the terminology dictionary in the field of animal husbandry; analyzes thematic issues in English.	3		v											
13	Professional Kazakh (Russian) language	Knows professional russian (kazakh) language, basic concepts and definitions in the field of animal husbandry, theoretical and practical professional terms; applies russian (kazakh) language, both in everyday and professional communication.	3		v											
14	Breeding and selection of agricultural animals	Knows the basic laws of inheritance signs and principles of heredity in the individual development of agricultural	5			v					v					

		animals, exterior, interior and constitution of agricultural animals; understands the selection and assortment, genetic parameters of selection, the doctrine of the breed; applies methods of breeding animals; analyzes selection and breeding work in animal husbandry.													
<b>Cycle of basic disciplines Component of choice</b>															
1	Obstetrics and biotechnology of reproduction	Knows basics of obstetrics and reproduction of animals, the doctrine of infertility and barrenness, fertilization, pregnancy and its diagnosis, parturition and the postpartum period, physiology and biochemistry of sperm; understands of pathology of pregnancy, parturition and the postpartum period, physiological features and diseases of newborns, biotechnology of reproduction; applies of males in the reproduction biotechnology, artificial insemination and embryo transplantation.	3									v			
2	Biophysics	Knows physical and physico-chemical processes at different levels of living matter (molecular, cellular, organ, the whole body), patterns and mechanisms of influence of physical environmental factors on living matter; applies the	4				v								

		main methods of biophysical studies of cell and vital systems of the body.														
3	Forage production with fundamentals of agronomy and botany	Knows the theoretical and practical bases of feed production as a science of obtaining high and stable yields of forage crops, characteristics of the main natural forage lands; applies technology of preparation and storage of feed; analyzes the improvement of natural hayfields and pastures.	3					v								
4	Methods of Mathematical Modeling	Knows random variables, probability density; understands the basics of the theory of errors, numerical algorithms for solving systems of linear algebraic equations; applies statistical methods, statistical hypothesis testing, correlation analysis, analysis of variance, mathematical modeling and its methods, in particular, statistical ones, to study various processes.	5	v												
5	Mechanization of livestock production	Knows general information about farms and complexes; understands of mechanization of water supply to livestock farms and pastures, preparation and distribution of feed, milking, shearing and preventive bathing of sheep, comprehensive mechanization of production processes; applies intrafarm	3							v						

		transport, machinery and equipment for processing raw materials of animal origin; evaluates the maintenance of machinery and equipment at livestock farms and complexes.														
6	The fundamentals of Veterinary science	Knows fundamentals of pathology, diagnosis, prevention, treatment and measures of elimination of diseases of various ethologies, basics of pharmacology, surgery, basics of internal non-communicable and surgical diseases of animals, diseases of lacteal gland, obstetrics and gynecology, infectious diseases, basics of epizootology and parasitology; applies methods of clinical diagnosis of internal non-communicable and surgical diseases of animals.	3								v					
7	Production management	Knows the basics of production management; understands the designing a new product, types of production processes, management of innovative projects, placement of enterprises, the production structure of enterprise, organization of production maintenance, product quality strategy; applies flow methods, manufacturing inventory management, production planning and sales organization,	3	v												

		the formation of production programs.														
8	Statistical analysis and data visualization	Knows databases using the Pandas data analysis library and the R programming language for statistical computing, a package for processing geospatial data, and using Scilab for numerical analysis; applies these tools to solve specific problems in the field of agriculture and bioresources.	3	v			v									
9	Physical and chemical research methods	Knows the classification of physical and chemical analysis methods, general characteristics of the methods, the indicator electrode and the reference electrode, classification of chromatographic methods, ion exchange and sediment chromatography, gas and liquid chromatography; understands equilibrium and non-equilibrium electrochemical systems, sensitivity and selectivity of physicochemical methods of analysis; applies electrogravimetric, conductometric, potentiometric, polarographic, coulometric methods, chromatography in quantitative analysis, electrochemical methods of analysis.	3	v			v									
10	Animal	Knows the theoretical and	3			v										

	Physiology	methodological foundations of physiology; understands mechanisms and patterns of activity of the vegetative functions of organism, qualitative differences in physiological functions in farm animals and poultry, ethology of farm animals and poultry, features and patterns of physiological processes and functions of individual body systems: nervous, sensory, endocrine, blood, blood circulation, respiration, etc.														
11	Digital technologies in animal husbandry	Knows digital technologies in animal husbandry; understands of production processes in real time; applies animal-centered feeding, production and keeping systems, continuous collection, analysis and use of information, traceability of origin and quality of products throughout the production chain, which prevents the spread of diseases and illegal trade in livestock products. ensure continuous collection, analysis and use of information, ensure traceability of origin and quality of products throughout the production chain, which prevents distribution diseases and illegal trade in livestock products.	4							v						
12	Python language	Knows of the Python data	3					v								



	and data analysis	structure; understands classical programming paradigms and the Numpy library to approach linear algebra and its algorithms; applies these deepening to solve concrete problems, SQL queries and web database applications.													
<b>Cycle of profile disciplines University component</b>															
1	Horse breeding, production technology of horse meat and cumis	Knows the national economic importance of horse breeding, the evolution and domestication of horses, the biological characteristics of horses, types of constitution, the exterior and interior of horses, the peculiarities of horse breeding technologies in various directions, horse reproduction, milk and meat productivity of horses; understands the classification of horse breeds, selection and breeding work, sports horse breeding; applies the technology of keeping, feeding and breeding horses, technology of production kumis and horse meat.	5												v
2	Sheep breeding, technology of wool, mutton production	Knows of biological features, exterior, constitution and fatness of sheep, classification and characteristics of the main breeds of sheep, meat and dairy productivity of sheep, fur, fur coat and lamb fur sheep products, feeding sheep;	5							v					

		understands of breeding work in sheep breeding; applies of sheep keeping and breeding technology, zootechnical and breeding registration, tagging and valuation of sheep.													
3	Poultry, technology of poultry products	Knows the current state of poultry farming and the prospects for increasing the production of eggs and poultry meat, the origin and breeds, lines, crosses of chickens, ducks, geese, turkeys, guinea fowls, features of feeding of chickens, ducks, turkeys, geese; understands the breeding work: valuation, evaluation and selection of poultry; applies hybridization, production technology of eggs and meat of broilers, ducks, turkeys, geese, slaughter and processing technology of poultry, processing technology of feather-down raw materials.	5												v
4	Cattle breeding technology of milk and beef production	Knows the national economic significance of cattle breeding, biological and economic features of cattle, dairy, meat productivity of cattle, selection and genetic parameters of their evaluation, cattle breeds, breeding and reproduction of herd; applies the innovative technologies of cattle keeping and feeding, technology of milk	5							v					

		and beef production, selection and breeding work in cattle breeding.														
5	Production technology of animal husbandry products	Knows the modern methods of breeding agricultural animals; understands the economic prerequisites of organization and production of livestock products in farms, peasant farms, joint-stock farms of the Republic of Kazakhstan, the CIS countries and other foreign countries; applies the production technologies of livestock products.	3								v		v		v	
<b>Cycle of profile disciplines Component of choice</b>																
1	Camel breeding, production technology of shubat, meat and wool	Knows the origin, biological features, species, breeds of camels, reproduction and breeding, feeding and keeping, productivity, the main diseases of camels and their prevention; evaluates the breeding value of camels.	3								v					
2	Goat breeding, production technology of milk, meat, wool and cashmere	Knows the biological features, exterior, constitution and fatness of goats, classification and characterization of the main goats breeds, products of goat breeding, reproduction of the herd and breeding of youngsters, feeding goats; understands economic efficiency of production of goat breeding products; applies breeding work	3								v					

		in goat breeding.														
3	Bee keeping	Knows the biological features of bees and their structure, the composition of bee family and its structure, feeding and breeding of bees, breeds of bees, diseases and pests of bees; applies pollination of agricultural plants, breeding of bees household farms, organization of beekeeping.	3											v		
4	Sport horse breeding	Knows the breeds of sport horses, selection of horses by origin, exterior, behavior, natural and artificial gaits, keeping, feeding and care of sport horses; applies the zooveterinarian control of sport horses, general training and preparation of sport horses, special preparation horses for competition.	3												v	
5	Technical regulation of animal husbandry products	Knows regulatory documents and research methods for various types of products; understands product standards, documenting, trends of technical regulation of livestock products; applies order and implementation of the rules of technical regulation; analyzes the degree of technical regulation.	4						v							
6	Primary processing technology of animal origin raw	Knows the technology of primary processing of animal raw materials; applies the technological process of cattle	4			v					v					

	materials	slaughter and cutting of carcasses, primary processing of raw materials, supplying cattle for processing, immobilizing and raising animals on the path of exsanguination, collecting blood, rimming-over, skinning, refrigeration of meat and meat products.														
7	Processing and storage technology of milk and meat	Knows the status and prospects of development of dairy and meat industry, composition and properties of milk and meat of agricultural animals, requirements for harvested milk, requirements for the preparation, transportation and delivery of slaughter animals; understands the standardization of livestock products; applies the processing of milk, primary processing of slaughter animals, resource-and energy-saving technologies of milk and meat processing, sanitary processing of technological equipment.	6						v	v						
8	Commodity and expertise of animal raw materials	Knows the general issues of commodity of animal raw materials, valuable consumer properties of products (woolen, leather, fur, sheepskin coat, fur and additional types of raw materials); analyzes the resources increase ways for obtaining raw materials and ways to improve their quality.	3			v				v						

**MAP of methodological support  
"6B08201 Animal husbandry"**

Total disciplines of the educational program – 48

Of these, how many disciplines are taught at the graduating department – 18

Of these, how many in other departments – 30

Map №1.

Information on the availability of a fund of educational and scientific literature

Non-profit joint stock company "S.Seifullin Kazakh Agro Technical University" of the department "Technology of production and processing of livestock products" for the 2022-2023 academic year

№ i/n	Academic subject, academic discipline	The number of students studying the subject, discipline (estimated enrollment)	Educational literature (title, year of publication, authors)	Educational and methodical, scientific literature (title, year of publication, authors)	Quantity at least 1 copy
1	2	3	4	5	6
1	History of Kazakhstan		1 Aminov T.M. Sovremennaya istoriya Kazahstana: uchebnoe posobie /T.M. Aminov; Ministerstvo obrazovaniya i nauki Respubliki Kazahstan. - Almaty: Bastau, 2017. - 456 s. 2 Brmanov N.SH. Bol'shoj put' slavnogo naroda: Razmyshleniya ob istorii zemli kazahskoj, narodov i plemen, prinyavshih uchastie v formirovanii kazahskogo naroda s drevnejshih vremen / N.SH. Brmanov. - Ural'sk: Poligrafservis, 2021. - 424 s.	1 Gosudarstvenno-konfessional'nye otnosheniya v Kazahstane nachalo HKH v. - konec 1930-h gg.: otchet o nauchno-issledovatel'skoj rabote. - Nur-Sultan: KazATU im. S.Sejfullina, 2021. - 68 s.	100 1 3
2	Philosophy		1 Myrzaly Serik. Filosofiya: uchebnoe posobie / S. Myrzaly; M-vo	1 Filosofiya: ucheb.-metod. kompleks / M-vo obrazovaniya i nauki RK, Kaz.	75 69

			<p>obrazovaniya i nauki Respubliki Kazahstan. - Almaty: Bastau, 2016. - 448 s.</p> <p>2 Zekrist R.I. Filosofiya v cifrovom mire = Philosophy in the Digital World: ucheb. posobie. I tom = I vol. / R.I. Zekrist. - Almaty: Bastau, 2020. - 328 s.</p> <p>3 Zekrist R.I. Filosofiya v cifrovom mire = Philosophy in the Digital World : uchebnoe posobie. II tom = II volume / R.I. Zekrist. - Almaty: Bastau, 2020. - 344 s.</p>	<p>agrotekhn. un-t im. S.Sejfullina; sost.: A.K. Abdina, T.M. Sadykova, D.V. Ni; rec. ZH.T. Kul'zhanova. - Astana: KazATU im.S.Sejfullina, 2015. - 162 s.</p>	<p>25</p> <p>25</p>
3	Foreign language		<p>1 Volkova S.A. Anglijskij yazyk dlya agrarnyh vuzov: ucheb. posobie / S. A. Volkova. - SPb. : Lan', 2016. - 256 s.</p> <p>2 Anglijskij yazyk dlya studentov universitetov. CHtenie, pis'mennaya praktika i praktika ustnoj rechi = English for University Students. Reading, Writing and Conversation: uchebnik. v 2-h ch. CH.1 / S. I. Kostygina [i dr.]. - M.: Izdatel'skij centr "Akademiya", 2017. - 400 s.</p>		<p>5</p> <p>10</p>
4	Kazakh (Russian) language		<p>1 Kәsibi қазақ тили: оқу қыралы / қыраст.: N.Қ. Nәsieva, Қ.Ж. Serrazina; pikir zhazfan: A.Қ. Utanova, A.E. Abdrahmanova. - Astana: S.Sejfullin atyndary ҚАТУ, 2014. - 150 b.</p>	<p>1 Қазақ тили: оқу-әдістемелік кешен / қыраст.: A.E. Abdrahmanova, Ж.Б. Abdulla; rec. A.S. Nырzhanova. - Astana: S.Sejfullin atyndary ҚАТУ, 2017. - 125 b.</p>	<p>10</p> <p>2</p>
5	Information and communication technologies		<p>1 Nurpeisova T.B. Informacionno-kommunikacionnye tekhnologii: ucheb. posobie / T.B. Nurpeisova, I.N. Kajdash; M-vo obrazovaniya i nauki</p>	<p>1 Nurtazina R.A. Sovremennye massovye kommunikacii v usloviyah globalizacii: uchebnoe posobie. CHast' 1 / R.A. Nurtazina;</p>	<p>29</p> <p>4</p>

			RK. - Almaty: Bastau, 2017. - 544 s. 2 Maskaeva A.M. Osnovy teorii informacii: ucheb. posobie / A.M. Maskaeva. - M.: FORUM: INFRA-M, 2019. - 96 s.	Ministerstvo obrazovaniya i nauki Respubliki Kazahstan. - 2-e izd. - Almaty : Bastau, 2016. - 224 s.	25
6	Political Science and Sociology		1 Muhambetkalieva G.M. Politologiya: ucheb. posobie / G.M. Muhambetkalieva; rec.: A.M. Nurgalieva, A.ZH. Bajmagambetova. - Astana: KATU im.S.Sejfullina, 2017. - 100 s. 2 Kozyrev G.I. Politologiya: ucheb. posobie / G.I. Kozyrev. - M.: FORUM: INFRA-M, 2018. - 368 s.	1 Politologiya: ucheb.-metod. kompleks / M-vo sel'skogo hoz-va RK ; sost.: A.ZH. Bajmagambetova, Z.A. Kaskarbaeva; rec. G.R. SHer'yazdanova. - Astana: KazATU im.S.Sejfullina, 2015. - 151 s.	30 25 5
7	Cultural studies and psychology		1 Sarsenova ZH.N. Kul'turologiya : ucheb. posobie / ZH.N. Sarsenova. - 2-e izd., dop. - Almaty: Nur-Print, 2013. - 300 s. 2 Ospanova B.A. Kreativnaya psihologiya: uchebnik /B.A. Ospanova, A.A. ZHoldasbekov; M-vo obrazovaniya i nauki RK. - Almaty: Nuraj Print Servis, 2012. - 420 s. 3 Viktorov V.V. Kul'turologiya: uchebnik /V.V. Viktorov; Fin. un-t pri Pravitel'stve RF. - izd. dop. - M.: Vuzovskij uchebnik: INFRA-M, 2013. - 411 s.		5 52 1
8	Physical Culture		1 Fizicheskoe vospitanie v vuze, uchebnoe posobie, Botagariev T.A., Tulegenov E.K., Mambetov N.M., Aralbaev A.S., 2018 g.		1
9	Analytical and physical and colloid chemistry		1 Sebryaeva N.S. Fizicheskaya i kolloidnaya himiya: uchebnoe posobie /N.S. Sebryaeva; recenzenty: L.A.	1 Muhanbetova Nazira Amangazievna. Analiticheskaya himiya: ucheb.-metod. kompleks	19 30



			<p>Kusepova, S.G. Ospanova; Ministerstvo obrazovaniya i nauki Respubliki Kazahstan, Kazahskij agrotekhnicheskij universitet im. S.Sejfullina. - Astana: KazATU im.S.Sejfullina, 2013. - 169 s.</p> <p>2 Abilkanova F.ZH. Analiticheskaya himiya. Himicheskie metody analiza: uchebnik i praktikum /F.ZH. Abilkanova; M-vo obrazovaniya i nauki RK. - Almaty: Bastau, 2018. - 288 s.</p>	<p>/N.A. Muhanbetova; rec. A.B. Bukeeva. - Astana: KATU im. S.Sejfullina, 2016. - 195 s.</p>	5
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			im.S.Sejfullina, 2014. - 312 s. 2 Nikol'skij V.I. Prakticheskie zanyatiya po genetike: ucheb. posobie /V.I. Nikol'skij. - M.: Izdatel'skij centr "Akademiya", 2012. - 224 s.		20
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23	Breeding and selection of agricultural animals		1 Borisenko E.YA. Razvedenie sel'skohozyajstvennyh zhiivotnyh. – M.: Lan',pereizdannoe, 2012 g. 2 Kahikalo V.G., Lazarenko V.N., Fenchenko N.G. Razvedenie zhiivotnyh.-M.: Lan', 2014 g. 3 Kahikalo V.G., Predeina N.G., Nazarchenko O.V. Praktikum po razvedeniyu zhiivotnyh. Uchebnoe posobie. - M.: Lan', 320 s.-2013 g.		1 5 3
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			<p>ucheb. posobie /G.D. Nekrasov, I. A. Sumanova. - M.: FORUM, 2015. - 176s.</p> <p>2 Polyancev N.I. Veterinarnoe akusherstvo, ginekologiya i biotekhnika razmnozheniya: uchebnik / N. I. Polyancev. - SPb.: Lan', 2015. - 480 s.</p> <p>3 Polyancev, Nikolaj Ivanovich. Akusherstvo, ginekologiya i biotekhnika razmnozheniya zhitovnyh: uchebnik /N.I. Polyancev, A.I. Afanas'ev. - SPb.: Lan', 2012. - 400s.</p>		<p>26</p> <p>10</p>
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36	Horse breeding, production technology of horse meat and cumis		1 Akimbekov B.R., Dujsembaev K.I., Akimbekov A.R. dr. Konevodstvo (uchebnik) /Almaty, «Al'manah». – 2016. 2 Akimbekov B.R. i dr. Razvedenie i sodержanie loshadej. – uch. posobie. Almaty, «Al'manah». – 2016		30  5
37	Sheep breeding, technology of wool, mutton production		1 Erohin A.I., Kotarev V.I., Erohin S.A. - Ovcevodstvo / Pod red. professora Erohin A.I. – Voronezh: FGBOU VPO Voronezhskij GAU, 2014. – 450 s. - Uchebniki i ucheb. posobiya dlya vyssh. ucheb. zavedenij. 2 Traisov B.B., Selionova M.I., Skoryh L.N., Esengaliev K.G. Praktikum po ovcevodstvu / ZKATU im. ZHangir-		1  Элект.ресурс

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41	Camel breeding, production technology of shubat, meat and wool		<p>1 Razvedenie zhivotnyh: uchebnik /V.G. Kahikalo, N.G. Fenchenko, O.V. Nazarchenko, S.A. Gricenko. — Sankt-Peterburg: Lan', 2020. — 336s.  2 SHEjko YU.N., ZHumagazieva S.M. Verblyudovodstvo, Astana 2018, 138s.</p>	<p>1 Praktikum po razvedeniyu sel'skohozyajstvennyh zhivotnyh: uchebnik /YU.A. YUldashbaev, T.T. Tarchokov, Z.M. Ajsanov [i dr.]. — Sankt-Peterburg : Lan', 2020. — 112 s.  2 Zdereva L.B., Ismailova M.E. Verblyudovodstvo, tekhnologiya proizvodstva shubata, myasa i shersti. Uchebno-metodicheskoe posobie po special'nosti 5V080200-Tekhnologiya proizvodstva produktov zhivotnovodstva – Kostanaj, 2017. – 80 s.</p>	<p>1 1  20 1</p>
42	Goat breeding, production technology of milk, meat, wool and		<p>1 Razvedenie zhivotnyh: uchebnik /V.G. Kahikalo, N.G. Fenchenko, O.V. Nazarchenko, S.A. Gricenko. —</p>	<p>1 Praktikum po razvedeniyu sel'skohozyajstvennyh zhivotnyh: uchebnik /YU.A. YUldashbaev, T.T.</p>	<p>1 1</p>

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43	Bee keeping		1 SHurkin A. Tekhnologiya proizvodstva produkci pchelovodstva: ucheb. posobie /A. SHurkin, N. Omarkozhauy; rec. ZH.K. Kurzhikaev; M-vo sel'skogo hoz-va RK, Kaz. agrotekhn. un-t im. S.Sejfullina. - Astana: KazATU im. S.Sejfullina, 2018. - 253 s. 2 Rid D.B. Razvedenie i sodержanie pchel. M.: Lada, 2015. – 476 s. 3 Tihomirov V. Pchelovodstvo dlya nachinayushchih. Samoe ponyatnoe poshagovoe rukovodstvo na ves' god. M.: OOO Izdatel'stvo Astrel', 2014. – 500 s. 4 Ponamerov P.I. Tekhnologiya uhoda za pchelami Primorskogo kraya. M.: OOO «LitRes», 2020. – 80s.		20  1  1  1
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45	Technical regulation of animal husbandry		1 Sergeev A.G. Sertifikaciya.-M.: Logos, 2012.-264 s.		1

	products		<p>2 Standartizaciya i sertifikaciya v sfere uslug. A.V.Rakov, V.I.Korol'kova i dr.-M.-2014.-156 s.</p> <p>3 Lific I.M. Standartizaciya, metrologiya i sertifikaciya. M.: YUrajt-Izdat., 2014.-335 s.</p> <p>4 Krylova G.D. Osnova standartizacii, sertifikacii,metrologii.- M., YUNITI-DANA, 2020,-671 s.</p> <p>5 Lichko N.M. Standartizaciya i podtverzhenie sootvetstviya sel'skohozyajstvennoj produkcii: uchebnik dlya vuzov /N.M. Lichko. - M.: DeLi plyus, 2013. - 512 s.</p>		<p>1</p> <p>1</p> <p>1</p> <p>2</p>
46	Primary processing technology of animal origin raw materials		<p>1 Antipova L. V. Tekhnologiya obrabotki syr'ya: myaso, moloko, ryba, ovoshchi: uchebnoe posobie dlya srednego professional'nogo obrazovaniya / L.V. Antipova, O. P. Dvoryaninova; pod nauchnoj redakciej L. V. Antipovoj. — 2-e izd., pererab. i dop. — Moskva: Izdatel'stvo YUrajt, 2020. — 204 s.</p> <p>2 CHernobaj E.N. Tekhnologiya pervichnoj pererabotki produktov zhivotnovodstva, Uchebnoe posobie, Stavropol', 2012.</p> <p>3 Omarova K.M. Tekhnologiya pervichnoj obrabotki syr'ya zhivotnogo proiskhozhdeniya. Uchebnoe posobie. Astana: KazATU im.S.Sejfullina, 2022, 186 s.</p>	<p>1 Auyl sharuashylyk onimderdi endejtin tekhnologiyalyk zhabdyktar: praktikum /A.M. Əbdirov [zh.b.]; Syn-pikirshi M. Kakimov. - Astana : S.Sejfullin atyndary KazATU, 2018. - 156 b.</p>	<p>1 25</p> <p>1</p> <p>1</p>
47	Processing and storage technology of milk and meat		<p>1 Mamaev A.V., Sergeeva E.YU., Rodina N.D. Tekhnologiya moloka i molochnyh produktov. Uchebnoe posobie. SPb.: Prospekt Nauki. 2016.</p>		<p>3</p>

			<p>224 s.</p> <p>2 Hromova L., Vostroilov A., Bajlova N. Molochnoe delo. Uchebnik. 2017. 332 c.</p> <p>3 Bujlova L.A. Tekhnologiya proizvodstva molochnyh konservov. Uchebnik i praktikum dlya SPO.: VG molochnohozyajstvennaya akademiya imeni N.V. Vereshchagina. Vologda. 2018. 206 s.</p> <p>4 Bredihin S.A. Tekhnologiya i tekhnika pererabotki moloka. Uchebnoe posobie dlya podgotovki bakalavrov. 2-e izd. INFRA-M.: Moskva. 2018. 443 s.</p> <p>5 Bekkozhin A.ZH., Nurtaeva A.B. Tekhnologiya moloka i molochnyh produktov. Uchebnoe posobie. Izdatvo «Kazahskij agrotekhnicheskij universitet im. S.Sejfullina». Astana. 2014. 175 s.</p>		<p>3</p> <p>1</p> <p>1</p> <p>30</p>
48	Commodity and expertise of animal raw materials		<p>1 A. Kiladze. Tovarovedenie i ekspertiza zhivotnogo syr'ya. M.: Izdatel's'vo Prospekt Nauki, 2012.</p> <p>2 Kalachev S.L. TEORETICHESKIE OSNOVY TOVAROVEDENIYA I EKSPERTIZY /Uchebnik, Izdatel'stvo: YUrajt, 2020 g., 478 s.</p> <p>3 Slavnova T.P., Vilkova S.A. Tovarovedenie i ekspertiza odezhno-obuvnyh i pushno-mekhovyh tovarov: Uchebnoe posobie. Izdatel'stvo: Dashkov i K, 2020, 164s.</p> <p>4 Zonova L.N., Mihajlova L.V., Vlasova E.N. Teoreticheskie osnovy tovarovedeniya i ekspertizy: Uchebnoe</p>		<p>2</p> <p>1</p> <p>1</p> <p>1</p>

			posobie dlya bakalavrov, Izdatel'stvo: Dashkov i K, 2020, 192s.	
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## Map №2.

Information about the availability of educational and scientific literature on digital media  
 NJSC "S.Seifullin KATU" of the Department "Technology of production and processing of animal products" for the 2022-2023 academic year

№ п/п	Academic discipline by profession, direction of personnel training, according to the qualifications of the specialty being prepared	Name, year of creation	Author(s)	Information about the availability of subscriptions to international, national databases
1	2	3	4	5
1	History of Kazakhstan	Sovremennaya istoriya Kazakhstana, 2016	G.A. Sarmurzina, K.K. Chatibekova, G.A. Davletova	<a href="http://rmebrk.kz/book/1159039">http://rmebrk.kz/book/1159039</a>
2	Philosophy	Filosofiya, 2021	M.V. Romm, V.V. Vihman, M.P. Danilkova	<a href="https://e.lanbook.com/book/216317">https://e.lanbook.com/book/216317</a>
3	Foreign language	Angliiskii yazik dlya agrarnykh vuzov, 2021	S.A. Volkova	<a href="https://e.lanbook.com/book/168931">https://e.lanbook.com/book/168931</a>
4	Kazakh (Russian) language	kazak tili, 2016	T.M. Artykova, S.S. Isakova	<a href="http://www.iprbookshop.ru/67072.html">http://www.iprbookshop.ru/67072.html</a>
5	Information and communication technologies	Informacionno-kommunikacionnie tehnologii, 2017	Nurpeisova T.B., Kaidash I.N.	<a href="http://rmebrk.kz/book/1174726">http://rmebrk.kz/book/1174726</a>
6	Political Science and Sociology	Politologiya, 2021	A.V. Kulnazarova	<a href="https://e.lanbook.com/book/180289">https://e.lanbook.com/book/180289</a>
7	Cultural studies and psychology	Osnovi formirovaniya lichnosti, 2021	G.A. Bykovskaya, A.A. Borisova, A.N. Zlobin	<a href="https://e.lanbook.com/book/254459">https://e.lanbook.com/book/254459</a>
8	Physical Culture	Fizicheskoe vospitanie v vuze,	Botagariev T.A.,	<a href="https://library.tou.edu.kz/fulltext/buuk/b3133.pdf">https://library.tou.edu.kz/fulltext/buuk/b3133.pdf</a>

		2018	Tulegenov E.K., Mambetov N.M., Aralbaev A.S.	
9	Analytical and physical and colloid chemistry	Analiticheskaya i fizkolloidnaya himiya, 2015	Golodova I.V., Rube V.A.	<a href="http://rmebrk.kz/book/1146020">http://rmebrk.kz/book/1146020</a>
10	Higher Mathematics*	Elementarnaya i visshaya matematika, 2022	V.I. Antonov, F.I. Kopelevich	<a href="https://e.lanbook.com/book/208565">https://e.lanbook.com/book/208565</a>
11	Genetics, ontogenesis, phylogeny	Genetika, 2021	N.M. Makrushin, Yu.V. Plugatar, E.M. Makrushina	<a href="https://e.lanbook.com/book/158959">https://e.lanbook.com/book/158959</a>
12	Zoohygiene the basics of designing livestock facilities	Zoogigiena, 2021	N.I. Kulmakova, I.N. Khakimov, V.G. Semenov, R.M. Mudarisov	<a href="https://e.lanbook.com/book/183360">https://e.lanbook.com/book/183360</a>
13	Feeding of agricultural animals	Osnovi pitaniya i kormleniya selskohozyaistvennih jivotnih, 2015	V.G. Ryadchikov	<a href="https://e.lanbook.com/book/64337">https://e.lanbook.com/book/64337</a>
		Racionalnoe kormlenie jivotnih, 2022	Khaziakhmetov F.S.	<a href="https://e.lanbook.com/book/206411">https://e.lanbook.com/book/206411</a>
14	Molecular and cellular biology	Osnovi molekulyarnoi biologii, 2021	I.A. Bazhenova, T.A. Kuznetsova	<a href="https://e.lanbook.com/book/152444">https://e.lanbook.com/book/152444</a>
15	Animal Morphology	Morfologiya jivotnih, 2015	Bashina S.I., Minchenko V.N., Tkachev D.A.	<a href="https://elibrary.ru/download/elibrary_23553911_91755807.pdf">https://elibrary.ru/download/elibrary_23553911_91755807.pdf</a>
16	Inorganic and organic chemistry	Organikalik himiya, 2015	A.E. Biktimirova	Доступна книга в эл.каталоге
17	General biology of organisms	Obschaya biologiya, 2017	N.V. Bugero, N.A. Ilyina	<a href="https://e.lanbook.com/book/112087">https://e.lanbook.com/book/112087</a>
18	Bases of termodynamics and electromagnetism	Elektrichestvo i magnetizm, 2017	Y.S. Grinberg, E.A. Koshelev, A.G. Moiseev	<a href="https://e.lanbook.com/book/118450">https://e.lanbook.com/book/118450</a>
19	Bases of physics	Osnovi fiziki plazmi, 2022	V.E. Golant, A.P. Zhilinsky, I.E. Sakharov	<a href="https://e.lanbook.com/book/210629">https://e.lanbook.com/book/210629</a>



20	Labor protection and basics of life safety	Ohrana truda, 2022	M.A. Krivova, D.A. Melnikova, N.G. Yagovkin	<a href="https://www.iprbookshop.ru/116280.html">https://www.iprbookshop.ru/116280.html</a>
21	Professionally-oriented Foreign Language	Animal Science and Aquaculture, 2012	Nguyen Xuan Trach	<a href="https://www.slideshare.net/salakuoara/bg-english-for-animal-science-and-aquaculture">https://www.slideshare.net/salakuoara/bg-english-for-animal-science-and-aquaculture</a>
		Angliiskii yazik dlya zooveterinarnih vuzov, 2021	S.K. Voynatovskaya	<a href="https://e.lanbook.com/book/174291">https://e.lanbook.com/book/174291</a>
22	Professional (Russian) language Kazakh	Kazak tili, 2018	Abdrakhmanova K. Zh.	<a href="http://library.atu.kz/files/9360.pdf">http://library.atu.kz/files/9360.pdf</a>
		Kasibi kazak tili, 2015	Zhagyparova M.	<a href="http://rmebrk.kz/book/1151434">http://rmebrk.kz/book/1151434</a>
23	Breeding and selection of agricultural animals	Razvedenie selskohozyaistvennih jivotnih s osnovami chastnoi zootehnii,	N.I. Kulikova	<a href="https://kubsau.ru/upload/iblock/1b1/1b10fef3e11d7c7ad40a41433cf7d9e6.pdf">https://kubsau.ru/upload/iblock/1b1/1b10fef3e11d7c7ad40a41433cf7d9e6.pdf</a>
		Razvedenie selskohozyaistvennih jivotnih i osnovi selekcii, 2017	L.A. Tanana, V.I. Karaba, V.V. Peshkov	<a href="https://e.lanbook.com/book/131956">https://e.lanbook.com/book/131956</a>
24	Obstetrics and biotechnology of reproduction	Veterinarnoe akusherstvo, ginekologiya i biotekhnika razmnojeniya, 2021	N.I. Polyantsev	<a href="https://e.lanbook.com/book/168774">https://e.lanbook.com/book/168774</a>
25	Biophysics	Biofizika, 2013	Ivleva L.P.	<a href="http://rmebrk.kz/book/73177">http://rmebrk.kz/book/73177</a>
26	Forage production with fundamentals of agronomy and botany	Kormoproizvodstvo s osnovami agronomii, 2018	Veretennikov N.G.	<a href="https://www.iprbookshop.ru/101724.html">https://www.iprbookshop.ru/101724.html</a>
27	Methods of Mathematical Modeling	Matematicheskoe modelirovanie i metodi optimizacii, 2022	F.G. Akhmadiev, R.M. Gilfanov	<a href="https://www.iprbookshop.ru/116448.html">https://www.iprbookshop.ru/116448.html</a>
28	Mechanization of livestock production	Mehanizaciya i avtomatizaciya jivotnovodstva, 2017	E.A. Tretyakov	<a href="https://e.lanbook.com/book/130707">https://e.lanbook.com/book/130707</a>
29	The fundamentals of Veterinary science	Osnovi veterinarii, 2012	Khusainov D.M.	<a href="http://rmebrk.kz/book/1006563">http://rmebrk.kz/book/1006563</a>
30	Production management	Proizvodstvennii menedjment, 2021	Syryamkin V.I., Syryamkin M.V., Filonov N.G.	<a href="https://elibrary.ru/download/elibrary_47176986_44456918.pdf">https://elibrary.ru/download/elibrary_47176986_44456918.pdf</a>
31	Statistical analysis and data	Modelirovanie i vizualizaciya	Krahotkina E.V.	<a href="https://www.iprbookshop.ru/92565.html">https://www.iprbookshop.ru/92565.html</a>

	visualization	eksperimentalnih danih, 2018		
32	Physical and chemical research methods	Fiziko_himicheskie metodi analiza. Metodi analiza biologicheskii aktivnih veschestv i polimerov, 2020	E.S. Zhavoronok, N.V. Karpov, P.Y. Demenyuk, S.A. Kedik	<a href="https://e.lanbook.com/book/163896">https://e.lanbook.com/book/163896</a>
33	Animal Physiology	Fiziologiya jivotnih, 2021	V.V. Akhmetova, S.V. Dezhatkina, Sh.R. Zialalov	<a href="https://elibrary.ru/download/elibrary_47262105_20048043.pdf">https://elibrary.ru/download/elibrary_47262105_20048043.pdf</a>
34	Digital technologies in animal husbandry	Statisticheskaya obrabotka rezultatov issledovani, 2022	O. A. Shakhova	<a href="https://www.iprbookshop.ru/119099.html">https://www.iprbookshop.ru/119099.html</a>
35	Python language and data analysis	Intellektualnii analiz danih na yazyke Python, 2021	L.A. Demidova	<a href="https://e.lanbook.com/book/218693">https://e.lanbook.com/book/218693</a>
36	Horse breeding, production technology of horse meat and cumis	Konevodstvo, 2012	Kozlov S.A., Parfenov V.A.	<a href="http://rmebrk.kz/book/1006375">http://rmebrk.kz/book/1006375</a>
37	Sheep breeding, technology of wool, mutton production	Ovcevodstvo	Erokhin A.I., Kosarev V.I., Erokhin S.A.	<a href="https://www.twirpx.com/file/2118350/">https://www.twirpx.com/file/2118350/</a>
		Praktikum po ovcevodstvu, 2019	Yu.A. Yuldashbayev, M.B. Ulimbashev, O.V. Nazarchenko, B.K. Salaev	<a href="https://e.lanbook.com/book/116382">https://e.lanbook.com/book/116382</a>
38	Poultry, technology of poultry products	Osnovi korrektsii kormleniya selskohozyaistvennoi ptici, 2021	Leonid Podobed	<a href="https://aldebaran.ru/tags/94535/">https://aldebaran.ru/tags/94535/</a>
		Pticevodstvo, tehnologiya proizvodstva produktov pticevodstva, 2015	Zh.Zh. Uakhitov, T.K. Bekseitov, T.Sh. Asanbayev	<a href="http://rmebrk.kz/book/1159233">http://rmebrk.kz/book/1159233</a>
39	Cattle breeding technology of milk and beef production	Skotovodstvo, 2022	S.V. Karamaev, H.Z. Valitov, A.S. Karamaeva	<a href="https://e.lanbook.com/book/206396">https://e.lanbook.com/book/206396</a>
40	Production technology of animal husbandry products	Teoreticheskie osnovy proizvodstva produkcii jivotnovodstva, 2012	I.V. Sitnikova, A.V. Gubin	<a href="https://kindbook.net/kniga/teoreticheskie-osnovy-proizvodstva-produkcii-zhivotnovodstva">https://kindbook.net/kniga/teoreticheskie-osnovy-proizvodstva-produkcii-zhivotnovodstva</a>
		Tehnologiya proizvodstva	V.E. Gaponova	<a href="https://elibrary.ru/download/elibrary_23543103_80581338.pdf">https://elibrary.ru/download/elibrary_23543103_80581338.pdf</a>

		produkcii jivotnovodstva, 2012		
41	Camel breeding, production technology of shubat, meat and wool	Tipi konstitucii selskohozyaistvennih jivotnih i ih ispolzovanie selekcionno_plemennoi tehnologicheskoi rabote, 2018	L.A. Tanana, N.N. Klimov, S.I. Korshun	<a href="https://e.lanbook.com/reader/book/103078/#1">https://e.lanbook.com/reader/book/103078/#1</a>
		Verblyudovodstvo, 2016	A.V. Popov, V.P. Plotnikov	<a href="https://e.lanbook.com/book/76676">https://e.lanbook.com/book/76676</a>
42	Goat breeding, production technology of milk, meat, wool and cashmere	Industrialnaya tehnologiya ovcevodstva i kozovodstva, 2012	Sabdenov K.S.	<a href="https://library.psu.kz/index.php?option=com_catalog&amp;search=field=author&amp;page=0&amp;cat=book&amp;lang=kaz">https://library.psu.kz/index.php?option=com_catalog&amp;search=field=author&amp;page=0&amp;cat=book&amp;lang=kaz</a>
		Kozovodstvo, 2022	L.P. Moskalenko, O.V. Filinskaya	<a href="https://e.lanbook.com/book/210998">https://e.lanbook.com/book/210998</a>
43	Bee keeping	Pchelovodstvo, 2017	N.I. Krivtsov, V.I. Lebedev, G.M. Tunikov	<a href="https://e.lanbook.com/book/93716">https://e.lanbook.com/book/93716</a>
		Pchelovodstvo, 2022	R.B. Kozin, N.I. Krivtsov, V.I. Lebedev, V.M. Maslennikova	<a href="https://e.lanbook.com/book/210470">https://e.lanbook.com/book/210470</a>
44	Sport horse breeding	Konevodstvo, 2022	V.A. Demin, A.R. Akimbekov, D.A. Baymukanov	<a href="https://e.lanbook.com/book/208466">https://e.lanbook.com/book/208466</a>
45	Technical regulation of animal husbandry products	Tovarovedenie i ekspertiza jivotnogo sirya, 2018	Kiladze A.B.	<a href="https://rus.logobook.kz/prod_show.php?object_uid=2272964">https://rus.logobook.kz/prod_show.php?object_uid=2272964</a>
		Osnovi tehničkog regulirovaniya kachestva pischevoi produkcii. Standartizaciya metrologiya ocenka sootvetstviya, 2020	T.V. Renzyaeva	<a href="https://e.lanbook.com/book/130191">https://e.lanbook.com/book/130191</a>
46	Primary processing technology of animal origin raw materials	Standartizaciya tehnologiya pererabotki i hraneniya produkcii jivotnovodstva, 2020	G.S. Sharafutdinov, F.S. Sibagatullin, N.A. Balakirev	<a href="https://e.lanbook.com/book/130579">https://e.lanbook.com/book/130579</a>
47	Processing and storage	Tehnologiya myasa i myasnih	Rogov I.A., Zabashta	<a href="https://www.studentlibrary.ru/book/ISBN9785953206433.html">https://www.studentlibrary.ru/book/ISBN9785953206433.html</a>

	technology of milk and meat	produktov. Kniga 1. Obschaya tehnologiya myasa, 2013	A.G., Kazyulin G.P.	
		Tehnologiya pererabotki jivotnovodstva, 2020	pervichnoi produktov V.V. Pronin, S.P. Fisenko, I.A. Mazilkin	<a href="https://e.lanbook.com/book/131052">https://e.lanbook.com/book/131052</a>
48	Commodity and expertise of animal raw materials	Teoreticheskie osnovi tovarovedeniya i ekspertizi, 2020	Strakhova S.A.	<a href="https://rus.logobook.kz/prod_show.php?object_uid=2285693">https://rus.logobook.kz/prod_show.php?object_uid=2285693</a>
		Tovarovedenie i ekspertiza jivotnogo sirya, 2017	Kiladze A.B.	<a href="http://www.iprbookshop.ru/35794.html">http://www.iprbookshop.ru/35794.html</a>

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Head of the Department "Technology of production and processing of animal products"

Bostanova S.K.

	technology of milk and meat	produktov. Kniga 1. Obschaya tehnologiya myasa, 2013	A.G., Kazyulin G.P.	
		Tehnologiya pererabotki zivotnovodstva, 2020	pervichnoi produktov V.V. Pronin, S.P. Fisenko, I.A. Mazilkin	<a href="https://e.lanbook.com/book/131052">https://e.lanbook.com/book/131052</a>
48	Commodity and expertise of animal raw materials	Teoreticheskie osnovy tovarovedeniya i ekspertiza, 2020	Strakhova S.A.	<a href="https://rus.logobook.kz/prod_show.php?object_uid=2285693">https://rus.logobook.kz/prod_show.php?object_uid=2285693</a>
		Tovarovedenie i ekspertiza zivotnogo sirya, 2017	Kiladze A.B.	<a href="http://www.iprbookshop.ru/35794.html">http://www.iprbookshop.ru/35794.html</a>

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