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
30.05 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

Authors:

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The group of authors approved by the order of JSC "Seifullin Kazakh Argo Technical University" № 932-H from 12.12.2018; № 962-H from 28.12.2018; № 964-H from 28.12.2018

Educational program "Veterinary Safety"
Reviewed at Veterinary Medicine Department meeting
Protocol №9 from "14" March 2019,
Approved by Faculty Senate
Protocol № 9 from "02"May 2019.

Doctor of veterinary sciences, professor,
Dean of the faculty of veterinary
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Doctor of veterinary sciences, professor,
Head of the Veterinary Medicine Department — Abdrakhmanov T.Zh.

Content

1 Passport of the Educational Program

The educational program "Veterinary Safety" in the specialty 6B09 - "Veterinary" is 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 based on a modular system.

Awarded qualification "Veterinary Specialist" according Educational Program – 6B091"Veterinary Safety." The possibility of further continuing education in the magistracy and doctoral studies.

1 .1 Educational Program Aim

The aim of the educational program is preparing competitive in a labor market new formation specialists, with extensive fundamental knowledge and practical experience, owning modern methods of diagnosis and treatment of diseases of animals, taking into account the requirements of employers.

The main tasks are following:

- Prevention, diagnostics, treatment of diseases of various etiologies of animals;
- veterinary and sanitary control of products and raw materials of animal or vegetable origin;
- protection of population against diseases common to humans and animals;
- protection of the territory of the Republic of Kazakhstan from introduction of contagious diseases from other states;
- organization and performing the monitoring of the occurrence and spread of animals' diseases;
- ability to work with the scientific and technical information,
- using of domestic and foreign experience and professional activities;
- formation of both theoretical and practical knowledge and skills in professional activities.

2 General characteristics of the Educational Program (relevance, peculiarities, competitive advantages, uniqueness, stakeholders and so on)

The education program contains theoretical training, including the study of cycles of general educational, basic and majors, professional practise, physical culture and others. Volume EP is 300 credits, including 240 theoretical training credits, 28 – Professional Practice, 8 and 12 credits of Physical Education and writing a thesis, 12 credits of final certification.

The urgency to develop educational programs (EP) is that it is harmonised with the requirements of a standard curriculum and competencies of the graduate of the first day (a specialist in veterinary medicine) of the World Orgatisation for Animal Health (OIE), it makes possible to integrate EP in the international veterinary educational space. The importance of 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.

Specially designed OP is that the structure, logic and training components of the disciplines she agreed on 60-70 % with educational work programs leading world Universities in the field of veterinary education (Justus Liebig Giessen University, Davis California University, Toulouse National Veterinary School) , which will contribute to the professional mobility of students .

Concurence advantages of the EP is that it is designed to meet the specific proposals of the Chamber of Entrepreneurs "Atameken", providing training adapted to the requirements of the regional labor markets in Kazakhstan.

EP unicity allows to enable the full development of the personality of the future specialist veterinary profile, has a stable professional competences, as well as the ability to develop social partnership and entrepreneurship.

In the development of EP participated: regional territorial inspection of veterinary control and supervision of the RK, the Republican Veterinary Laboratory, National Reference Center of veterinary medicine, veterinary clinics, agricultural units.

3 Competency model (a portrait) of the graduate:

Students must have the following key competencies:

- have a basic knowledge of natural sciences (socio-humanitarian and economic) disciplines, contributing to the formation of a highly educated person with a broad outlook and culture;

- be able to formulate and solve practical problems in the field veterin and Rhee, preservation and maintenance of animal health and human use of information technology in the field of professional activities, teaching in schools, to successfully carry out the research and production figures v Nosta

- possess the skills to acquire new knowledge necessary to claim for all the day of professional work and continuing education in the magistracy.

Learning outcomes are expressed in terms of competence and designs have are based on the Dublin descriptors

3 .1 With Thera professional activity

A specialist in this area should be trained for:

- maintain and ensure the human and animal health ;
- carrying out the diagnosis, prevention and treatment of infectious diseases, parasitic and contagious diseases of animals, birds and fish bred in farms of different directions and forms prop m vennosti;
- prevention of diseases common to humans and animals (anthroposis of onoses);
- carrying out veterinary-sanitary inspection of animal products and pa with titelnogo origin;
- development and circulation of medicines for animals;
- environmental protection from pathogens transmitted through sick w and swamps and dead animals.

3 .2 Types of professional activity

Types of professional activity are:

- medical;
- production and technological;
- organizational and management;
- experimental research;
- research;
- educational.
- military veterinary service;
- all types of economic entities of agricultural production;
- circuses, hippodromes, associations engaged in breeding of breeding animals;
- veterinary hospitals, veterinary pharmacies, laboratories, zoos, nature reserves;
- institutions of the state veterinary service;
- slaughter houses, vehicles for transporting animals, premises for keeping animals.

3.3 General educational competencies

Disciplines of the mandatory component of the Common Educational Discipline (CED) cycle:

- aimed at the formation of the worldview, civil and moral positions of the future specialist, competitive on the basis of ownership of information and communication technologies.
- form the skills of self-development and education throughout life;
- the completion of the study of the required disciplines of the CED cycle, the student is able to:
- evaluate the surrounding reality on the basis of worldview positions formed by knowledge of the foundations of philosophy .
- argue their own assessment of everything that happens in the social and industrial spheres;
- use the methods and techniques of historical description to analyze the causes and consequences of the events of modern history of Kazakhstan;
- synthesize knowledge of these sciences as a modern product of integrative processes.

3.4 Basic competencies

Programs of disciplines and modules of the Basic Disciplines (BD) and Profile Disciplines (PD) cycles are multidisciplinary in nature, providing training for veterinary specialists at the junction of a number of areas of knowledge.

EP provides graduates acquire basic competencies second, corresponding guides requirements imposed OIE experts. Trajectory EP provides for training of graduates of special competence in the field of treatment, prevention and control measures against diseases of varying etiology

animals, zoonoses, emergent diseases, food hygiene, pharmacy, animal welfare, national and international veterinary legislation and ethics.

Graduates receive practical competencies in the 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 entrepreneurial activity.

3.5 Professional competencies

The specialist should:

have an *idea* :

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

know:

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

be able to:

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

have skills :

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

be competent:

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

4 Basis for passing of professional practice

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

1) Training practice in the BD cycle;
2) Educational and clinical practice in the BD cycle;
3) Production practice in the PD cycle;
4) Undergraduate practice in the PD cycle.

Training practice - veterinary clinic of S.Seifullin KazATU, veterinary medical diagnostic centers, veterinary hospitals of Astana, Republican Veterinary Laboratory.

Educational and clinical practice: State Organisations "Veterinary Service" in Akmola, Karaganda, Almaty, Kostanay, Nothern-Kazakhstan, Turkestan regions.

Industrial, pre-diploma practice – agricultural organizations of all regions of the Republic of Kazakhstan, Vetservices of Tselinograd, Akkol, Astrakhan, Arshaly, Yereymentau districts of Akmola region , LLP Atameken Agro, Kokshetau, LLP Bayserke, Almaty region, agrarian firms Rodina in Akmola region, "Olzha", "Sochakovskoe" in Kostanay region .

5 Structure of the educational program (Duration of study 5 years)

No.	The name of the cycles and disciplines	Total labor input	
		in academic hours	in academic loans
1	2	3	4
1	**The cycle of general education disciplines (OOD)**	**1680**	**56**
1)	**Mandatory component**	**1530**	**51**
	The modern history of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
	Kazakh (Russian) language	300	10
	Information and communications technology (in English)	150	5
	Political Science and Sociology	120	4
	Culturology and psychology.	120	4
	Physical Culture	240	8
2)	**University component**	**150**	**5**
	Fundamentals of Economics	150	5
2	**The cycle of basic disciplines (DB)**	**4260**	**142**
1)	**University component**	**180- 2130**	**6- 71**
	Animal anatomy	300	10
	Veterinary Microbiology	300	10
	Veterinary Virology	150	5
	Animal Physiology and Biochemistry	300	10
	Clinical diagnosis with radiology	120	4
	Veterinary pharmacology and toxicology	240	8
	Pathomorphology	300	10
	Veterinary hygiene	150	5
	Training practice	120	4
	Educational - clinical practice	150	5
2)	**Optional component**	**2130**	**71**
	English for special purposes P rofessionalno -oriented (foreign) language	180	6
	Histology with the basics of cytology B ACTH histology and embryology of animals	150	5
	Zoology Z oogeography	150	5
	Veterinary genetics with the basics of biostatistics In eterinarnaya Genet with bases of animal breeding	150	5
	Veterinary Radiobiology Animal radiation safety	150	5
	Feeding animals Feed and feed additives	150	5
	Laboratory diagnosis in veterinary medicine R aboratornoe dealing in veterinary medicine	150	5

	Veterinary about oral and ophthalmology Veterinary Anesthesiology	15 0	5
	Veterinary sanitary examination of crop products, fish farming and beekeeping . Technology, sanitation and ve t erinarno- san itarnaya Experi- p tiza meat and dairy products.	150	5
	Veterinary control at the border and transport Veterinary and sanitary supervision during export-import traffic.	150	5
	Forensic examination . Forensic thanatology .	150	5
	Fundamentals of biotechnology of animal reproduction . Diseases of the genital organs of females	150	5
	Veterinary Management Organization of veterinary medicine	150	5
	Operative surgery Surgery of small animals	150	5
3	**The cycle of core disciplines (PD)**	**2700**	**90**
1)	**University component and / or optional component**	**2430**	**81**
	Veterinary sanitary examination of livestock products	300	10
	Veterinary surgery	300	10
	Internal diseases of animals	300	10
	Veterinary obstetrics and gynecology	300	10
	Parasitology and invasive animal diseases	300	10
	Veterinary epidemiology	300	10
	Internship	600	20
	Undergraduate practice	30	1
2)	**Optional component**	**270**	**9**
	Epizootological monitoring and organization of veterinary events . Cross-border and exotic animal diseases.	120	4
	Protection of animal health in emergent infections . Prediction and risk assessment of animal infectious diseases.	150	5
four	**Additional types of training (DVO)**		
5	**final examination**	**360**	**12**
1)	Writing and defending a thesis (project) or preparing and passing a comprehensive exam	360	12
	Total	**9000**	**300**

Appendix 1 – Academic Calendar

Казахский агротехнический университет имени С.Сейфуллина

Рассмотрено на заседании
Ученого совета университета

Протокол № от " " 2019 г.

УТВЕРЖДАЮ:
Директор Департамента по академическим вопросам
АО «КАТУ им. С.Сейфуллина»
_____ Н.А. Серекпаев
"____" _____ 2019 г.

Академический календарь на 2019-2020 учебный год для специальностей бакалавриата факультета Ветеринарии и технологии животноводства

Курс	Авг	Сентябрь				Октябрь				Ноябрь				Декабрь					Январь				Февраль				Март					Апрель				Май				Июнь					Июль				Август				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
		26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24
		30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28
				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											
специальность 5В120100 - Ветеринарная медицина (6В091 Ветеринария)																																																					
I	ПН	ПН	.	.	.	.	.	.	.	.	.	.	С	С	ЗД	ЗД/ЗС	К	К	К	.	.	.	.	.	.	.	.	.	.	.	С	С	К	.	.	.	.	.	.	.	.	.	./Уп	С	С	Л/К	Л/К	Л/К	Л/К	Л/К	Л/К	К	К	К
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IV	К	К	.	.	.	.	.	.	.	.	.	.	С	С	ЗД	ЗД/ЗС	К	К	К	.	.	.	.	.	.	.	.	.	.	.	С	С	К	.	.	.	.	./Кп	./Кп	./Кп	./Кп	./Кп	.	С	С	ВС/Л	ВС/Л	ВС/Л	ВС/Л	ВС/Л	ВС/Л	К	Пр	Пр
V	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	Пр	СО	СО	.	.	.	.	.	.	.	.	.	.	.	С	С	Пд	Д	Д	Д	Д	Д	Д	Д	ИА	ИА	ИА	ИА	ИА								

ПН - презентационная неделя
• - теоретическое обучение
ЗД запись на дисциплины
ЗС- сдача FX
С - сессия экзаменационная

Л - летний семестр
Уп - учебная практика
Пр - производственная практика
СО -сдача отчета
Пд - преддипломная практика

К - каникулы
ВС - военные сборы
Д - дипломное проектирование
ИА Итоговая аттестация
ГЭК - государственные экзамены
ГАК - защита дипломной работы (проекта)

31 июль- Курбан Айт
1 декабря - День Первого Президента
16, 17 декабря - День независимости
1, 2 января - Новый год
7 января - Рождество Христово

21, 22, 23 марта - Наурыз мейрамы
1 мая - Праздник единства народа Казахстана
7 мая - День защитника Отечества
9 мая - День Победы
6 июля - День столицы

Всего недель:
теоретическое обучение - 30 недель
экзаменационная сессия - 6 недель
каникулы зимние - 2 недели
каникулы летние - 4-6 недель
летний семестр - 4-6 недель

Декан факультета _____ _____
"___" _____ 2019 г.

Зав.кафедрой _____ _____
"___" _____ 2019 г.

Appendix 2. Work Curriculum

Дайындық бағыты (мамандығы)/Направление подготовки (специальность)/ Direction of training (specialty): Ветеринария/Ветеринарий/
Білім беру бағдарламасы (мамандандыру)/Образовательная программа (специализация)/ Educational program (specialization): Ветеринариялық қауіпсіздік/Ветеринарная безопасность/ Veterinary safety
Оқу кезеңі/Период обучения/ Period of study: 2019 - 2024
Дайындық деңгейі/Уровень образования/ Level of training: / Бакалавр/
Білім негізінде/На базе/ On the base: / Среднее общее/

№	Модуль атауы Наименование модуля Module name	Пәндер циклі Цикл дисциплин Cycle of discipline	Компонент Компонент Component	Пәннің коды Код дисциплины Code of discipline	Пәндер атауы Наименование дисциплины Discipline name	ҚР кредит саны Число кредитов РК Number of KZ credits	Білім алушылардың барлық жұмыс уақыты (сағ) Бюджет рабочего времени обучающихся (в часах) Student budget-time (in hours)								Кредиттерді курс және семестр (триместр, квартал) бойынша бөлу Распределение кредитов по курсам и семестрам (триместрам, кварталам) Distribution of credits by courses and semesters (trimesters, quarters)												Бақылау түрі Формы контроля Forms of control	
							Барлық сағат саны Всего в часах Total (in hours)	Барлық аудиториялық сағат саны Всего аудиторных часов Total class hours	Дәрісханалық сабақтар Аудиторные занятия Class work						1 курс (year)			2 курс (year)			3 курс (year)			4 курс (year)			5 курс (year)			Емтихат/Экзамен Exam	Курстық жұмыс/Курсовая работа/Term paper
									Дәріс Лекции Lectures	Практикалық семинардық сабақтар Практические / семинарские Practical classes/Seminars	Зертханалық сабақтар Лабораторные занятия Laboratory work	Студиялық сабақтар Студийные занятия Studio work	БӨЖӨК СРОП UWST	БӨЖ СРО IWS	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
							Триместердегі апталар саны Недель в триместре Weeks per trimester								10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
1.Жалпы модульдер/1.Общие модули/1. Common modules																														
1	Тіл Языковой linguistic	ЖББП ООД GLS	МК ОК MC	IYa1101	Ағылшын тілі Иностранный язык Foreign language	10,00	300,00	100,00		100,00			40,00	160,00	4,00	3,00	3,00												Первый триместр, Третий триместр, Второй триместр	
		ЖББП ООД GLS	МК ОК MC	KRYa1102	Қазақ (орыс) тілдері Казахский (русский) язык Kazakh (russian) language	10,00	300,00	100,00		100,00			40,00	160,00	3,00	3,00	4,00												Первый триместр, Второй триместр, Третий триместр	
2	Жалпы білім Общеобразовательный General education	ЖБПП ООД GES	ТК КВ SC	OE2103	Экономика негіздері Основы экономики Fundamentals of Economics	5,00	150,00	50,00	20,00	30,00			20,00	80,00			2,00	3,00											Третий триместр, Четвертый триместр	
		ЖББП ООД GLS	МК ОК MC	IKT1106	Ақпараттық-коммуникациялық технологиялар Информационно-коммуникационные технологии Information and communication technologies	5,00	150,00	50,00	20,00		30,00		20,00	80,00		5,00												Второй триместр	
3	Қоғамдық-саяси Общественно-политический	ЖББП ООД GLS	МК ОК MC	SIKG1104	Қазақстанның қазіргі заманғы тарихы (ЖЕ) Современная история Казахстана (ГЭ) The modern history of Kazakhstan (SE)	5,00	150,00	50,00	20,00	30,00			20,00	80,00	5,00														Первый триместр	
		ЖББП ООД GLS	МК ОК MC	F2105	Философия Философия Philosophy	5,00	150,00	50,00	20,00	30,00			20,00	80,00					5,00										Пятый триместр	
		ЖББП ООД GLS	МК ОК MC	PS1107	Саясаттану және әлеуметтану Политология и социология Political science and sociology	4,00	120,00	40,00	20,00	20,00			16,00	64,00		4,00													Второй триместр	
		ЖББП ООД GLS	МК ОК MC	KP1108	Мәдениеттану және психология Культурология и психология Cultural studies and psychology	4,00	120,00	40,00	20,00	20,00			16,00	64,00	4,00														Первый триместр	
Модуль бойынша барлығы/Итого по модулю/ Total in module:						**48,00**	**1 440,00**	**480,00**	**120,00**	**330,00**	**30,00**		**192,00**	**768,00**	**16,00**	**15,00**	**9,00**	**3,00**	**5,00**										**13**	
2.Мамандық модульдері /2.Модули специальности/2. Specialty modules																														
1	Кәсіптік тілдер Профессиональные языки Professional languages	БП БД BS	ТК КВ SC	ASC2201	Арнайы мақсаттар үшін ағылшын тілі Английский для специальных целей English for special purposes	6,00	180,00	60,00		60,00			24,00	96,00				2,00	2,00	2,00									Четвертый триместр, Шестой триместр, Пятый триместр	
2	Микробиология и вирусология	БП БД BS	ЖК ВК UC	VM3204	Ветеринариялық микробиология Ветеринарная микробиология Veterinary Microbiology	10,00	300,00	100,00	40,00		60,00		40,00	160,00					3,00	3,00	4,00								Шестой триместр, Пятый триместр, Седьмой триместр	
3	Микробиология и вирусология	БП БД BS	ЖК ВК UC	VV3206	Ветеринариялық вирусология Ветеринарная вирусология Veterinary Virology	5,00	150,00	50,00	20,00		30,00		20,00	80,00							5,00								Седьмой триместр	
4	Животноводство и кормление	БП БД BS	ТК КВ SC	KZh2207	Мал азықтандыру Кормление животных Feeding of animals	5,00	150,00	50,00	20,00		30,00		20,00	80,00						5,00									Шестой триместр	
5	Инвазиялық аурулар Инвазионные болезни Invasion illnesses	КП ПД PS	ЖК ВК UC	PIB5307	Паразитология және инвазиялық аурулар Паразитология и инвазионные болезни Parasitology and invasionny diseases	10,00	300,00	100,00	40,00		60,00		40,00	160,00										4,00	3,00		3,00			Двенадцатый триместр, Одиннадцатый триместр, Четырнадцатый триместр	
6	Жануарлар патологиясы Патология животных Animal Pathology	БП БД BS	ЖК ВК UC	P3208	Патоморфология Патоморфология Pathomorphology	10,00	300,00	100,00	40,00		60,00		40,00	160,00							4,00	3,00	3,00							Девятый триместр, Седьмой триместр, Восьмой триместр	

7	Ветеринарная фармакология и токсикология	БП БД BS	ЖК ВК UC	VFT3209	Ветеринарлық фармакология және токсикология Ветеринарная фармакология и токсикология Veterinary pharmacology and toxicology	8,00	240,00	80,00	30,00		50,00		32,00	128,00							2,00	3,00	3,00							Девятый триместр, Седьмой триместр, Восьмой триместр
8	Зоогигиена, ветеринарная санитария и охрана труда	БП БД BS	ЖК ВК UC	VG3213	Ветеринарлық гигиена Ветеринарная гигиена The veterinary hygiene	5,00	150,00	50,00	20,00		30,00		20,00	80,00							5,00									Седьмой триместр
9	Акушерство и гинекология	КП ПД PS	ЖК ВК UC	VAG4303	Ветеринарлық акушерлік және гинекология Ветеринарное акушерство и гинекология Veterinary obstetrics and gynecology	10,00	300,00	100,00	40,00		60,00		40,00	160,00									4,00	3,00	3,00					Девятый триместр, Одиннадцатый триместр, Девятый триместр
		БП БД BS	ТК КВ SC	OBVZh4215	Жануарлардың көбею биотехнологиясының негіздері Основы биотехнологии воспроизводства животных Fundamentals of biotechnology animal reproduction	5,00	150,00	50,00	20,00		30,00		20,00	80,00										5,00						Десятый триместр
10	Индетті аурулар Инфекционные болезни Infectious diseases	КП ПД PS	ТК КВ SC	EMOVM530 2	Эпизоотологиялық мониторинг және ветеринариялық іс-шараларды ұйымдастыру Эпизоотологический мониторинг и организация ветеринарных мероприятий Ehpizoologicheskij monitoring and organization of veterinary measures	4,00	120,00	40,00	20,00	20,00			16,00	64,00																4,00		Четырнадцатый триместр
		КП ПД PS	ТК КВ SC	OZZhEI5304	Эмерджентік инфекциялар кезінде жануарлардың денсаулығын қорғау Охрана здоровья животных при энергентных инфекциях Protection of animal health in emergent infections	5,00	150,00	50,00	20,00	30,00			20,00	80,00																5,00		Четырнадцатый триместр
		КП ПД PS	ЖК ВК UC	VE5308	Ветеринарлық эпидемиология Ветеринарная эпидемиология Veterinary Epidemiology	10,00	300,00	100,00	40,00		60,00		40,00	160,00											4,00	3,00			3,00		Двенадцатый триместр, Одиннадцатый триместр, Четырнадцатый триместр
		БП БД BS	ТК КВ SC	MV4218	Ветеринарлық менеджмент Менеджмент в ветеринарии Management in veterinary	5,00	150,00	50,00	20,00	30,00			20,00	80,00										5,00						Десятый триместр
11	Ветеринарная хирургия	КП ПД PS	ЖК ВК UC	VH4301	Ветеринарлық хирургия Ветеринарная хирургия Veterinary surgery	10,00	300,00	100,00	40,00		60,00		40,00	160,00									3,00	4,00	3,00					Девятый триместр, Одиннадцатый триместр, Десятый триместр
		БП БД BS	ТК КВ SC	OH3216	Оперативтік хирургия Оперативная хирургия Operative surgery	5,00	150,00	50,00	20,00		30,00		20,00	80,00								5,00								Восьмой триместр
		БП БД BS	ТК КВ SC	VOO5220	Ветеринарлық ортопедия и офтальмология Ветеринарная ортопедия и офтальмология Veterinarnaja ortopedija i oftal'mologija	5,00	150,00	50,00	20,00		30,00		20,00	80,00															5,00		Четырнадцатый триместр
12	Внутренние незаразные болезни	КП ПД PS	ЖК ВК UC	VBZh4305	Жануарлардың ішкі аурулары Внутренние болезни животных Internal animal diseases	10,00	300,00	100,00	40,00		60,00		40,00	160,00										3,00	3,00	4,00					Десятый триместр, Одиннадцатый триместр, Двенадцатый триместр
		БП БД BS	ТК КВ SC	VR3210	Ветеринарлық радиобиология Ветеринарная радиобиология Veterinary radiobiology	5,00	150,00	50,00	20,00		30,00		20,00	80,00								5,00								Восьмой триместр
		БД BS	ЖК ВК UC	KDR2215	Рентгенологиямен клиникалық диагностика Клиническая диагностика с рентгенологией Clinical diagnostics with radiobiology	4,00	120,00	40,00	20,00		20,00		16,00	64,00					4,00											Шестой триместр
		БД BS	ТК КВ SC	LDV3221	Ветеринариядағы зертханалық диагностика Лабораторная диагностика в ветеринарии Laboratory diagnostics in veterinary	5,00	150,00	50,00	20,00		30,00		20,00	80,00								5,00								Восьмой триместр
13	Ветеринарлық-санитарлық сараптау Ветеринарно-санитарная экспертиза Veterinary and sanitary examination	КП ПД PS	ЖК ВК UC	VSEPZh530 6	Мал шаруашылығы өнімдерін ветеринарлық-санитарлық сараптау Ветеринарно-санитарная экспертиза продуктов животноводства Veterinary and sanitary examination of meat	10,00	300,00	100,00	40,00		60,00		40,00	160,00											4,00	3,00			3,00		Одиннадцатый триместр, Двенадцатый триместр, Четырнадцатый триместр
		БП БД BS	ТК КВ SC	VKGT3214	Шекара және көліктегі ветеринарлық бақылау Ветеринарный контроль на границе и транспорте Veterinary control at the border and transport	5,00	150,00	50,00	20,00	30,00			20,00	80,00									5,00							Девятый триместр
		БП БД BS	ТК КВ SC	SE4219	Сот сараптамасы Судебная экспертиза Expert report	5,00	150,00	50,00	20,00		30,00		20,00	80,00												5,00				Двенадцатый триместр
		БП БД BS	ТК КВ SC	VSEPRRP22 22	Өсімдік, балық және аң шаруашылығы өнімдерін ветеринариялық санитарлық сараптау Ветеринарно-санитарная экспертиза продуктов растениеводства, рыбоводства и пчеловодства Veterinary sanitary ekspertiza cont crop production,fish and beekeeping	5,00	150,00	50,00	20,00		30,00		20,00	80,00					5,00											Пятый триместр
14	Жануарлар физиологиясы мен биохимиясы Физиология и биохимия животных	БП БД BS	ЖК ВК UC	AZh1202	Жануарлар анатомиясы Анатомия животных	10,00	300,00	100,00	40,00		60,00		40,00	160,00	3,00	3,00	4,00													Первый триместр, Второй триместр,

	Physiology and biochemistry of animals				Anatomy of animals																								Третий триместр
		БП БД BS	ЖК ВК UC	FBZh2203	Жануарлар физиологиясы және биохимиясы Физиология и биохимия животных Physiology and biochemistry of animals	10,00	300,00	100,00	40,00		60,00		40,00	160,00				4,00	3,00	3,00								Пятый триместр, Четвертый триместр, Шестой триместр
		БП БД BS	ТК КВ SC	VGOB2205	Ветеринариялық генетика биостатистика негіздерімен Ветеринарная генетика с основами биостатистики Veterinary genetics with the basics of biostatistics	5,00	150,00	50,00	20,00		30,00		20,00	80,00				5,00										Четвертый триместр
		БП БД BS	ТК КВ SC	Z2211	Зоология Зоология Zoology	5,00	150,00	50,00	20,00		30,00		20,00	80,00				5,00										Четвертый триместр
		БП БД BS	ТК КВ SC	GOC1212	Цитология негіздері гистология Гистология с основами цитологии Histology with bases of cytology	5,00	150,00	50,00	20,00		30,00		20,00	80,00			5,00											Третий триместр
		БП БД BS	ТК КВ SC	UPZ1223	Оқу тәжірибесі (Зоология) Учебная практика (Зоология) Practical training (Zoology)	1,00	30,00										1,00											Третий триместр
		БП БД BS	ТК КВ SC	UPMZh2224	Жануарлар морфологиясы бойынша оқу тәжірибесі Учебная практика (Морфология животных) Practical training Morphology	1,00	30,00												1,00								Шестой триместр
Модуль бойынша барлығы:/Итого по модулю:/ Total in module:						**204,00**	**6 120,00**	**2 020,00**	**790,00**	**170,00**	**1 860,00**		**808,00**	**3 232,00**	**3,00**	**3,00**	**10,00**	**16,00**	**13,00**	**18,00**	**20,00**	**21,00**	**18,00**	**20,00**	**21,00**	**18,00**		**23,00**		**56**
4.Қосымша модульдер/4.Дополнительные модули/4. Additional modules																														
1	Қорытынды аттестация Итоговая аттестация Final assesment	ҚА ИА FE		GESNZDRP501	Мамандық бойынша мемлекеттік емтихан немесе дипломдық жұмысты (жобаны) жазу және қорғау Государственный экзамен по специальности или написание и защита дипломной работы (проекта) State examination in the speciality or writing and defense of the thesis (project)	12,00	360,00																		12,00		Пятнадцатый триместр
2	Өндірістік тәжірибе производственная практика Production practice	Т П P		PPS02	Өндірістік тәжірибе Производственная практика Production practice	20,00	600,00																	10,00		10,00		Тринадцатый триместр, Пятнадцатый триместр
3	Диплом қорғау алдындағы тәжірибе преддипломная практика Pregradation	Т П P		PPS03	Диплом алдындағы тәжірибе Преддипломная практика Undergraduate practice	1,00	30,00																			1,00		Пятнадцатый триместр
4	Оқу-клиникалық тәжірибе учебно-клиническая практика teaching and clinical practice	Т П P		UKP404	Оқу-клиникалық тәжірибе Учебно-клиническая практика Educational and clinical practice	5,00	150,00																5,00					Двенадцатый триместр
5	Дене шынықтыру физическая культура Physical training	ЖББП ООД GES	МК ОК MC	FK2109	Дене шынықтыру Физическая культура Physical education	8,00	240,00	240,00		240,00					1,00	2,00	1,00	1,00	2,00	1,00								Второй триместр, Третий триместр, Первый триместр, Четвертый триместр, Пятый триместр, Шестой триместр
Модуль бойынша барлығы:/Итого по модулю:/ Total in module:						**46,00**	**1 380,00**	**240,00**		**240,00**					**1,00**	**2,00**	**1,00**	**1,00**	**2,00**	**1,00**					**5,00**	**10,00**		**23,00**		**11**
Кредиттер бойынша барлығы:/Итого кредитов:/ Total credits:						**298,00**	**8 940,00**	**2 740,00**	**910,00**	**740,00**	**1 090,00**		**1 080,00**	**4 008,00**	**20,00**	**20,00**	**20,00**	**20,00**	**20,00**	**19,00**	**20,00**	**21,00**	**18,00**	**20,00**	**21,00**	**23,00**	**10,00**	**23,00**	**23,00**	**80**
Орташа апталық жүктеменің сағат саны/Средняя недельная нагрузка в часах:/ Weekly average workload at hours:																							**54,00**			**30,00**				
ЖББП кредиттерінің саны:/Количество кредитов ООД:/ Total credits in GES:						**56,00**	**1 680,00**	**720,00**	**120,00**	**570,00**	**30,00**		**192,00**	**768,00**	**17,00**	**17,00**	**10,00**	**4,00**	**7,00**	**1,00**										
ЖББП-нің МК кредиттерінің саны:/Количество кредитов ООД ОК:/ Number of credits in GES MC:						51,00	1 530,00	670,00	100,00	540,00	30,00		172,00	688,00	17,00	17,00	8,00	1,00	7,00	1,00										17
ЖББП-нің ТК кредиттерінің саны:/Количество кредитов ООД КВ:/ Number of credits in GES SC:						5,00	150,00	50,00	20,00	30,00			20,00	80,00			2,00	3,00												2
ЖББП-нің ЖООК кредиттерінің саны:/Итого кредитов по ООД ВК:/ Number of credits in GES UC:																														
БП кредиттерінің саны:/Количество кредитов БД:/ Number of credits in BS:						**135,00**	**3 990,00**	**1 330,00**	**510,00**	**120,00**	**700,00**		**532,00**	**2 128,00**	**3,00**	**3,00**	**10,00**	**16,00**	**13,00**	**18,00**	**20,00**	**21,00**	**11,00**	**10,00**		**5,00**		**5,00**		
БП-нің МК кредиттерінің саны:/Количество кредитов БД ОК:/ Number of credits in BS MC:																														
БП-нің ТК кредиттерінің саны:/Количество кредитов БД КВ:/ Number of credits in BS SC:						73,00	2 130,00	710,00	260,00	120,00	330,00		284,00	1 136,00			6,00	12,00	7,00	8,00		15,00	5,00	10,00		5,00		5,00		18
БП-нің ЖООК кредиттерінің саны:/Количество кредитов БД ВК:/ Number of credits in BS UC:						62,00	1 860,00	620,00	250,00		370,00		248,00	992,00	3,00	3,00	4,00	4,00	6,00	10,00	20,00	6,00	6,00							18
КП кредиттерінің саны:/Количество кредитов ПД:/ Number of credits in majors:						**69,00**	**2 070,00**	**690,00**	**280,00**	**50,00**	**360,00**		**276,00**	**1 104,00**									**7,00**	**10,00**	**21,00**	**13,00**		**18,00**		
КП-нің МК кредиттерінің саны:/Количество кредитов ПД ОК:/ Number of credits in majors MC:																														
КП-нің ТК кредиттерінің саны:/Количество кредитов ПД КВ:/ Number of credits in majors SC:						9,00	270,00	90,00	40,00	50,00			36,00	144,00														9,00		2
КП-нің ЖООК кредиттерінің саны:/Количество кредитов ПД ВК:/ Number of credits in majors UC:						60,00	1 800,00	600,00	240,00		360,00		240,00	960,00									7,00	10,00	21,00	13,00		9,00		18
КБ кредиттерінің саны:/Количество кредитов ДВО:/ Number of credits in EM:																														
КБ-нің ТК кредиттерінің саны:/Количество кредитов ДВО КВ:/ Number of credits in EM SC:																														
ҚА кредиттерінің саны:/Количество кредитов ИА:/ Number of credits in FE:						**12,00**	**360,00**																					**12,00**		**1**
Тәжірибе кредиттерінің саны:/Количество кредитов практики:/ Number of credits in P:						**26,00**	**780,00**																			**5,00**	**10,00**		**11,00**		**4**

Appendix 3 Description of the disciplines of compulsory and university components

1. Basic information about the discipline:	
Name of the discipline	**The modern history of Kazakhstan**
2. The number of loans	**5**
3. Prerequisites:	Basic knowledge of school I
4. Post requisites:	cultural studies, political science, philosophy, sociology
5. Competencies:	Students will receive objective historical knowledge about the main stages of the history of Kazakhstan from the beginning of the twentieth century to the present day. Students will have an idea of the continuity and continuity of ethnogenesis, the formation and development of the statehood of the Kazakh people. Students will also study the main and general directions of the historical processes of Russian history. Students will consider historical events that took place on the territory of Kazakhstan in interconnection and interaction with the history of the peoples of neighboring countries. Mastering the characteristics of socio-political, cultural and other processes in different historical periods.
6. Course author	Department of History of Kazakhstan
7. Basic literature	1. Ayagan B. G. The modern history of Kazakhstan [Text]: a textbook for students of non-historical specials. (undergraduate) higher. textbook. institutions / B. G. Ayagan [and others]. ; Institute of History of the State Ministry of Education and Science of the Republic of Kazakhstan. - Almaty: Rarity, 2010 . From 15-17. 2. Nazarbayev N.A. Era of Independence.- Almaty: ҚАЗ ақпарат, 2017. 3 . Nurtazina R.A. National Security of the Republic of Kazakhstan: Textbook.- Almaty: Bastau, 2014. From 25-30 4 . Ertlesova Zh. Reforms of the 90s: Interviews with Key Participants in Events. - Almaty, Atamұra. - 2016 , from 25-28 5. Aminov T.M. The modern history of Kazakhstan. Tutorial. Almaty., 2017. From 21-25
8. The content of the discipline With the acquisition of the Republic of Kazakhstan state independence actualized the problem of a comprehensive and objective study of the past and the teaching of academic subjects " Modern History of Kazakhstan ", the main objectives of which are : the revival of the historical memory of the people , the formation of national identity and civil unity , education of patriotism and tolerance among young people .	

1. Basic information about the discipline:	
Name of the discipline	**Philosophy**
2. The number of loans	**5**
3. Prerequisites:	Sociology, political science, cultural studies, psychology, with the modern history of Kazakhstan
4. Post requisites:	History and philosophy of science, philosophy of modern society.
5. Competencies:	describe the main content of ontology and metaphysics in the context of the historical development of philosophy; explain the specifics of philosophical understanding of reality; substantiate a worldview as a product of philosophical reflection and study of the natural and social world; classify the methods of scientific and philosophical knowledge of the world; interpret the content and specific features of the mythological, religious and scientific worldview; to substantiate the role and significance of key worldview concepts as values of the social and personal being of a person in the modern world; analyze the philosophical aspect of media texts, socio-cultural and personal situations to justify and make ethical decisions; to formulate and competently argue their own moral position in relation to the urgent problems of modern global society; conduct research relevant to identify the philosophical content of problems in the professional field and present the results for discussion.
6. Course author	Department of Philosophy
7. Basic literature	1. Nazarbayev N.A. "Mugilik El. Years equal to centuries. The Age Equal to Centuries ”- Astana: Business World Astana, 2014. - 368 p. 2. Petrova V.F., Khasanov M.Sh. "Philosophy". - Almaty: Evero, 2014. 3. Johnston D. “Philosophy of Kysyasha Tarihi. Socrattan Derridaға deyn. " Nurysheva D . F . - Astana , 2018.– 216 b 4. Karen A rmstrong "A History of God: The 4000-year quest of judaism, christianity and islam." - Gramercy Books, 2014 .-- 496 p. (Karen Armstrong “ Echhistoriofgad : Zephosauzandiyogestofj udaism , Christianity Endislam .” - Gramsibuks , 2014 - 496 pi .) 5 . Humphreys P. "The Oxford Handbook of Philosophy of Science". - Oxford University Press, 2016. 6. Cappelen H., Gendler T., Hawthorne J. The Oxford Handbook of Philosophical Methodology. - Oxford University Press, 2016.
8. The content of the discipline Philosophy. Formation of students' consciousness of openness, understanding of their own national code and national identity, spiritual modernization, competitiveness, realism and pragmatism, the independent critical thinking, the cult of knowledge and education, the absorption of such key philosophical concepts as justice, dignity and freedom, as well as development and strengthening of the values of tolerance, intercultural dialogue and a culture of peace.	

1. Basic information about the discipline:	
Name of the discipline	**Foreign language**
2. The number of loans	10
3. Prerequisites:	Foreign language school course
4. Post requisites:	Professionally-oriented foreign language
5. Competencies:	According to the results of mastering the program, the student , depending on the level of training, the student at the time of completion of the course reaches the level of B1 - (IELTS 4.0-5.0) or B2 - (IELTS 5.5-6.0)
6. Course author	Department of Foreign Languages
7. Basic literature	1. Julie Lachance ((July 21 , 2015). *Practice Makes Perfect Premium: Basic English.* McGraw-Hill Education; 2 edition 2. Deborah Capras (01 Jan 2015). *Small Talk: B1 +*. HarperCollins Publishers 3. Mark Hancock (27 Apr 2017). *English Pronunciation in Use* Intermediate Book with Answers and Downloadable Audio. CAMBRIDGE UNIVERSITY PRESS 4. Katie Foufouti (28 Dec 2017). O *xford Skills World: Level 4: Reading with Writing* Student Book / Workbook. Oxford university press 6. Herbert Puchta, Jeff Stranks, Peter Lewis-Jones (31 Oct 2015). *Think* (SB + audio, WB + audio, TB, Tests - levels 1, 2, 3, 4 *).* CAMBRIDGE UNIVERSITY PRESS 5. Chris Lele. (March 20, 2018) *The Vocabulary Builder Workbook: Simple Lessons and Activities to Teach Yourself.* Zephyros Press; Workbook edition 6 . British National Corpus: http://www.natcorp.ox.ac.uk 7 . The Corpus of Contemporary American English (COCA): http://www.americancorpus.

8. The content of the discipline

The course program is designed for the volume of teaching - 300 hours, of which: 90 hours - for class work and 180 hours - for independent work. The course ends with a comprehensive exam. The course is designed for 2 semesters

1	Vocabular up to 3000 ords	Active dictionary - 1200-1500 words, passive dictionary 1500-1800
2	Reading	Well-formed reading skills with an almost complete understanding of thentic without special vocabulary in the presence of 10% unfamiliar words
3	Letter	The ability to write a note, a private letter, a greeting card, a questionnaire, a rm, a customs declaration, a communication plan (more than 20 sentences ithout a dictionary)
4	Listening	Formation of listening skills of authentic messages up to 2 minutes with an derstanding of the plot and the speaker's point of view
5	Speaking	Formation of oral communication skills lasting 2-3 in a monologue and the ility to participate in spontaneous dialogue (10-15 phrases)

1. Basic information about the discipline:	
Name of the discipline	**Kazakh (Russian) language**
2. The number of loans	10
3. Prerequisites:	A1, A2 - theoretical and practical knowledge corresponding to basic levels
4. Post requisites:	Professional Kazakh
5. Competencies:	Studying the linguistic system of the Kazakh language and its ways through cultural and intercultural activities, improving the language skills of language learners based on texts on everyday, social topics, the formation of lexical and grammatical skills
6. Course author	Department of Kazakh and Russian languages
7. Basic literature	1. Aitbaeva B.M. Textbook of the Kazakh language (level B1). - Karaganda, 2014 - 205 s 2. Dosmambetova G.K., Balabekov A.K., Bozbaeva-Hung. - Astana, 2014. 3. Seisenova A.T. Kazakh language: an entry-level textbook. National Testing Center. - Astana, 2016. From 45-49 3. Kuzekova Z.S., Baytelieva Yu.D. Kazakh language: a mid-level textbook. - Astana, 2016 S36- 40 4. M Dosmambetova G.K., Balabekov A.K., Bozbaeva-Hung. - Astana, 2014. 5. Abduova B.S., Asanova U.O. Kazakh language: A manual for Russian-speaking groups. - Astana, 2017 - 282b. 6. Bozbaeva-Hung A.T., Balabekov A.K., Dosmambetova G.K., Salykova B.O., Khazimova A.Zh. Kazakh language: a mid-level textbook. National Testing Center. - Astana: 2017, from 13-19 7. 8. Rezuanova G. K. Kazakh language. - Astana. 2017 p. 51-56
8. The content of the discipline The training complex consists of a text and several practical tasks depending on the text. Linguistic features and national cognitive qualities of the Kazakh language are taken into account. Since the Kazakh language course is based on a standard curriculum, topics on this program are taught. Studying discipline obuchajushche used flushes speak wisely, culturally in the Kazakh language, freely and as accurately as possible to express their point of view.	

1. Basic information about the discipline:	
Name of the discipline	**Information and communication technologies (in English lesson)**
2. The number of loans	5
3. Prerequisites:	About Dreams s Informatics, Mathematics and Physics
4. Post requisites:	The knowledge gained in the study of the discipline "Information and Communication Technologies" is used in the development of disciplines related to IT, digital technologies
5. Competencies:	After mastering the discipline, the student must: - *know the* main trends in the field of information and communication technologies, the architecture of computing systems, the features of various operating systems; - *be able to* use information resources to search and store information; work in various operating systems; work with spreadsheets, with databases; apply methods and means of information protection; Design and create simple websites - *possess skills* of using information resources for finding and storing information; work with spreadsheets, databases; processing vector and bitmap images; create presentations; simple websites; the use of various forms of e-learning and cloud services; - *be competent* in the application of modern information and communication technologies in everyday life and in the professional field.
6. Course author	Department of Information and Communication Technologies
7. Basic literature	1. June J. Parsons and Dan Oja, New Perspectives on Computer Concepts 16th Edition - Comprehensive, Thomson Course Technology, a division of Thomson Learning, Inc Cambridge, MA, COPYRIGHT © 2014. 2. Shynybekov DA, Uskenbayeva RK, Serbin VV, Duzbayev NT, Moldagulova AN, Duisebekova KS, Satybaldiyeva RZ, Hasanova GI, Urmashev BA Information and communication technologies. Textbook: in 2 parts. Part 1, 1st ed. - Almaty: IITU, 2017 .-- 588 p., ISBN 978-601-7911-03-4 (A textbook in English with the stamp of the Ministry of Education and Science of the Republic of Kazakhstan) 3. Shynybekov DA, Uskenbayeva RK, Serbin VV, Duzbayev NT, Moldagulova AN, Duisebekova KS, Satybaldiyeva RZ, Hasanova GI, Urmashev BA Information and communication technologies. Textbook: in 2 parts. Part 1, 1st ed. - Almaty: IITU, 2017 .-- 588 p., ISBN 978-601-7911-04-1 (A textbook in English with the stamp of the Ministry of Education and Science of the Republic of Kazakhstan) 5. Lorenzo Cantoni (University of Lugano, Switzerland), James A. Danowski (University of Illinois at Chicago, IL, USA) Communication and Tec hnology, 576p.
8. The content of the discipline The role of ICT in key sectors of society development. ICT standards . Introduction to computer systems. Architecture of computer systems. Software . Operating Systems. Human interaction with the computer. Database systems. Data analysis. Data management. Networks and telecommunications. Cyber security. Internet technologies. Cloud and mobile technology. Multimedia technology . Smarttechnologies. Electronic technology. E-business. E-learning. E- government. Information technology in the professional field. Industrial ICT. Prospects for the development of ICT.	

1. Basic information about the discipline:	
Name of the discipline	**Politology , sociology.**
2. The number of loans	four
3. Prerequisites:	Basic school knowledge
4. Post requisites:	Philosophy, History and Philosophy of Science
5. Competencies:	explain and interpret subject knowledge (concepts, ideas, theories) in all areas of science that form the educational discipline of the module (sociology, political science); explain the socio - ethical values of society as a product of integration processes in the systems of basic knowledge of the disciplines of the socio - political module; assess the specific situation of relations in society from the perspective of a particular science of the social and humanitarian type, design the prospects for its development taking into account possible risks; to develop programs for resolving conflict situations in society, including in professional society; carry out research project activities in various fields of communication, generate socially valuable knowledge, present it;
6. Course author	Department of Philosophy .
7. Basic literature	1 .. Ritzer J. "Modern sociological theories." 5 - ed. - St. Petersburg: Peter, 2002 .-- 688 p. 2 . Giddens E. “Sociology” / With the participation of C. Birdsall: Trans. from English Ed. 2 - ie, completely revised. and add. M.: Editorial URSS, 2005 .-- 632 p. 3 . Grushin B.A. "Opinions about the world and the world of opinions." M .: Praxis, VTsIOM 2011 g . C 43-47. "Sociology. Fundamentals of the general theory: a textbook ”/ Ed. G.V. Osipov, L.N. Moskvichev. - 2nd ed., Rev. and add. - M .: Norma, 2015. - 912 p. 4 . Biekenov K.U., Biekenova S.K., Kenzhakimova G.A. "Sociology: Textbook." - Almaty: Evero, 2016. - 584s. 5 . Macionis J. Society: The Basics. Pearson, 2016. (Masionis Jay. Souceti: The Bizics. Parson, 2016.) 6 . J. Ritzer, J. Stepnitsky. "To Әleumettanu theories." - Almaty: “Ұlttyma audarma burosy” қоғамдық қоры, 2018. - 856. 7 . Nazarbayev N.A. “A look into the future: the modernization of public consciousness.” - Astana, 2017 , pp . 35-39 .
8. The content of the discipline The module is expected to examine s two scientific Discitis Plin - political science , sociology, each of which has its own subject, terminology and methods. Interactions between the indicated scientific disciplines are carried out on the basis of the principles of information complementarity; integrativity; the methodological integrity of the research approaches of these disciplines; community of result-oriented learning methodology; unified system presenting a typology of learning outcomes as a developed ability .	

1. Basic information about the discipline:	
Name of the discipline	**To ulturology, psychology.**
2. The number of loans	Four
3. Prerequisites:	Basic school knowledge
4. Post requisites:	Philosophy, History and Philosophy of Science
5. Competencies:	Algorithmically represent the use of scientific research methods and techniques in the context of a specific academic discipline and in the interaction procedures of module disciplines; explain the nature of situations in various areas of social communication based on the content of theories and ideas of the scientific fields of the studied disciplines; analyze the features of social, political, cultural, psychological institutions in the context of their role in the modernization of Kazakhstani society; analyze various situations in different areas of communication from the standpoint of correlation with the system of values, social, business, cultural, legal and ethical standards of Kazakhstani society; distinguish between strategies of different types of research of society and justify the choice of methodology for the analysis of specific problems; to develop programs for resolving conflict situations in society, including in professional society; carry out research project activities in various fields of communication, generate socially valuable knowledge, present it;
6. Course author	Department of Philosophy .
7. Basic literature	1 . Godfroix J. "What is psychology." Volume 2. - M .: Mir , 2005 - 276 p . 2. Godfroix J. "What is psychology." Volume 1. - M .: Mir , 2005 - 496 p . 3. Ilyin EP "Psychology of communication and interpersonal relations." - SPb .: Peter, 2009. - 576 p. silt - (Series "Masters of Psychology"). 4 . Heywood A. Politics. - N.-Y .: Palgrave Macmillan, 2013. (Hayood Hey. Politics. - En. - Wye: Palgrave Macmillan, 2013) 5. Rudenko A.M. "Psychology in diagrams and tables": a training manual. –M: Phoenix, 2016. –379 p. 6. Nazarbayev N.A. “A look into the future: the modernization of public consciousness.” - Astana, 2017 7. Daniel Goleman. "Emotional intellect. Why can it mean more than IQ. ” Ed - in Mann, Ivanov and Ferber: 2018. - 560 p.
8. The content of the discipline 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 the indicated scientific disciplines are carried out on the basis of the principles of information complementarity; integrativity; the methodological integrity of the research approaches of these disciplines; community of result-oriented learning methodology; unified system presenting a typology of learning outcomes as a developed ability .	

1. Basic information about the discipline:	
Name of the discipline	**Physical Culture**
2. The number of loans	8
3. Prerequisites:	biology, anatomy, human physiology, hygiene, medical supervision, valeology, pedagogy, psychology
4. Post requisites:	The program of the course "Physical Culture" develops skills in the field of physical culture of students , forms the needs for maintaining a healthy lifestyle, maintaining and strengthening health, improves the level of physical fitness for the realization of their abilities in the process of everyday activities
5. Competencies:	Mastery of the basics of professionally-applied physical training, the basics of self-study techniques and maintaining a healthy lifestyle
6. Course author	Department of Physical Education
7. Basic literature	1. Ilyinich. IN AND. The physical education of the student. Moscow, 2001, pp. 40-41. 2. Ivanov, G. D. A.K. Kulnazarov. Physical education of students. Almaty, 2002. From 53-55. 3. Kosmolinsky F.P. Physical education and performance. M., Knowledge, 2003 , from 18-21. 4. Under the general editorship of Golovin VA Physical Education, Moscow, 2005. From 61-63 .. 5. Noftonova L.N. Production physical education. M., Knowledge, 2005.S. 44-49 6. Theory and methodology of physical education. Under the general ed. A.P. M Atveev and D. Novikov. M., 2005 , pp. 70-73. 7. Shkurkov A.S. Use of outdoor games in practical classes on physical education. 2006, from 20-25. 8. Petrov I.F., Abdakhin S.N. Weight-lifting. Guidelines for conducting educational and independent studies. 2007, from 20-25. 9. Gagauz V.V. Leading and special exercises in training and improving running techniques. 2007, from 12-16. 10. Shkurkov A.S. Summarizing and special training exercises and basketball tactics. 2008, from 17-18. 11. Zakirova A.B. Summarizing and special exercises for training and tactics of playing volleyball. 2009, pp. 40-45.

8. The content of the discipline

Formation of a positive attitude, interest and need for physical education and sports. Improving the physical health of students based on an increase in the arsenal of motor abilities, professionally-applied and methodological preparedness. Preparation and participation in mass sports and recreational activities and competitions in sports, providing for the wide involvement of students in active physical education. Comprehensive use of physical culture and sports as a general physical training. Increasing the level of physical and functional state. The prophylactic use of physical culture products for health purposes. The acquisition by students of additional, necessary knowledge on the basics of psychological, pedagogical, medical and biological control according to the methodology and organization of independent classes in physical exercises and "lifelong" sports.

1. Basic information about the discipline:	
Name of the discipline	**Fundamentals of Economics**
2. The number of loans	**5**
3. Prerequisites:	Philosophy, History of Kazakhstan, mathematics
4. Post requisites:	Business law
5. Competencies:	- Know the laws of economic development and law; - know the basic concepts created during the long evolution of economic thought; - know the principles of the functioning of the market mechanism of self-regulation and state influence on the economy; - be able to systematize knowledge about the nature and forms of manifestation of economic and legal phenomena and processes; - be able to put into practice the methods of scientific knowledge of economic and legal phenomena and patterns; - have the skills to analyze the status and trends of socio-economic development of the national and world economies; - have the skills of an interdisciplinary approach in solving economic and legal problems; - have the skills necessary for the implementation of subjective rights and legal duties in various life situations.
6. Course author	Department of Economic Theory and Law
7. Basic literature	1. Bazylev N.I. Economic theory / Bazylev N.I., Bazyleva M.N. Minsk, 2010 2. Sapargaliev G., Ibraeva A.S. Theory of state and law. Textbook. Almaty: Zhetyzhary, 2012 3. Dulatpekov N.O., Amandykova S.K., Turlaev A.V. Fundamentals of the state of law of modern Kazakhstan. Almaty, 201 2. 4. V. S. Grodsky Economic theory: textbook. manual for undergraduate students. The standard of the third generation / V. S. Grodsky. SPb. : Peter, 2013 5. Atzhanov T.Zh., Rodnov A.M. Theory of State and Law: diagrams and comments and Rhee / St. Petersburg. Astana-North, 2013 6. Balikov V.Z. General economic theory. Textbook. –M., 2015 7. Dzhusibalieva A.K., A.A. Erzhanova; Economic theory: textbook. allowance / A.K. Dzhusibalieva, A.A. Erzhanova; Rec .: B. E. Rustembaev, K. K. Khasenova; M-rural household. - Astana: KATU named after S.Seifullin, 2016.

8. **Discipline content**

The subject of the foundation of economics and law. Fundamentals of social production and economic systems. Forms of social economy, the emergence of money. The mechanism of functioning of the market system: demand, supply, price and competition. Production, costs and income of the company, markets for factors of production. National economy: content, structure and measurement of results. Economic growth and market instability: inflation and unemployment. State regulation and economic security of the national economy. The main branches of Kazakhstan law. Constitutional law. Administrative law. Civil law. Family law. Labor law. Criminal law.

Name of the discipline	**Animal Anatomy 1**
2. The number of loans	3
3. Prerequisites:	Fundamentals of General Biology, Zoology, Histology.
4. Post requisites:	Pathological anatomy, clinical diagnosis, therapy, surgery, obstetrics, parasitology and a number of other disciplines that provide theoretical and practical knowledge for the future specialty of a veterinarian.
5. Competencies:	- know the structure of the bone, muscle system, structural features in different species of animals; - know the areas and bodies of the animal and the most commonly used anatomical terms, their applied value for commodity research of livestock; - know the morphological features of the structure of organs and systems of the animal organism from development and interconnection; - Know the comparative anatomy and age features of organs; - be able to apply the basic methods of anatomical preparation, skin removal technique; - be able to use the acquired fundamental knowledge when mastering the material of special disciplines of the curriculum.
6. Course author	Department of General Biological Sciences
7. Basic literature	1.Yu.F. Yudichev, S.I. Efimov, G.A. Honin. Anatomy of pets. Recommended by the Ministry of Agriculture of the Russian Federation. Omsk, 2003 S. 43-48 2. A.I. Gazizova, A. S. Tozhybaeva. Teaching aid "Latin-Russian-Kazakh dictionary of morphological terms" for students of the faculty of veterinary medicine. Astana, 2008 S. 45-49 3. A.I. Akayevsky, Yu. Yudichev, S. Seleznev. Anatomy of pets. The practice of a veterinarian. Sixth Edition. Moscow. "Aquarium - Print", 2009.638 p . 4.A.I. Gazizova, L.M. Murzabekova Histology with the basics of cytology. Astana, 2013 pp. 63-68 5.A.I.Gazizova, L.M. Murzabekova., N.B. Akhmetzhanova, Atlas of domestic animals, Volume 1. Astana - 2016, P. 45-50 6.A.I.Gazizova, N.B. Akhmetzhanova., L.M. Murzabekova. Anatomy of pets. Volume 1, Volume 2 Astana 2017. S. 52-56 1. 7.A.I.Gazizova, L.M. Murzabekova, N.B. Akhmetzhanova Latin-Russian-Kazakh dictionary of morphological terms. Astana - 2017 p. 19-28
Discipline content Introduction History , purpose and objectives, methods of study and the relationship of discipline with other sciences. The role of domestic scientists in the development of both the theory and practice of the subject. General patterns of animal body structure. Departments and areas of the body of the animal. Osteology, myology , syndesmology. The development, shape and structure of bones. Soy bone bones (joints, ligaments , tendons). Morphofunctional muscle types.	

Name of the discipline	Animal Anatomy 2
2. The number of loans	3
3. Prerequisites:	Fundamentals of General Biology, Zoology, Histology , Animal Anatomy 1 .
4. Post requisites:	Pathological anatomy, clinical diagnosis, therapy, surgery, obstetrics, parasitology and a number of other disciplines that provide theoretical and practical knowledge for the future specialty of a veterinarian.
5. Competencies:	- know the structure of the bone, muscle system, structural features in different species of animals; - know the areas and bodies of the animal and the most commonly used anatomical terms, their applied value for commodity research of livestock; - know the morphological features of the structure of organs and systems of the animal organism from development and interconnection; - Know the comparative anatomy and age features of organs; - be able to apply the basic methods of anatomical preparation, skin removal technique; - be able to use the acquired fundamental knowledge when mastering the material of special disciplines of the curriculum.
6. Course author	Department of General Biological Sciences
7. Basic literature	1.Yu.F. Yudichev, S.I. Efimov, G.A. Honin. Anatomy of pets. Recommended by the Ministry of Agriculture of the Russian Federation. Omsk, 2003 S. 43-48 2 . A.I. Gazizova, A.S. Tozhybaeva. Teaching aid "Latin-Russian-Kazakh dictionary of morphological terms" for students of the faculty of veterinary medicine. Astana, 2008 pp. 45-49 3 . A.I. Akayevsky, Yu. Yudichev, S. Seleznev. Anatomy of pets. The practice of a veterinarian. Sixth Edition. Moscow. "Aquarium - Print", 2009.638 p. 4 .A.I. Gazizova, L.M. Murzabekova Histology with the basics of cytology. Astana, 2013 pp. 63-68 5 .A.I.Gazizova , L.M. Murzabekova., N.B. Akhmetzhanova. Atlas of domestic animals. Volume 1. Astana - 2016, P. 45-50 6 .A.I. Gazizova , N.B.Akhmetzhanova., L.M. Murzabekova. Anatomy of pets. Volume 1. Volume 2 Astana 2017. S. 52-56 7. A.I.Gazizova , L.M. Murzabekova, N.B. Akhmetzhanova Latin-Russian-Kazakh dictionary of morphological terms. Astana - 2017 p. 19-28
8. The content of the discipline The structure of the skin of mammals and birds . The structure of the digestive system . Features of the structure and function of the digestive organs of birds . The apparatus of urination and reproduction. Features of the structure and position of the reproductive organs of male and female in animals of different species . The apparatus of urination and reproduction. The structure and significance of the respiratory system. Dividing them into departments. About ryegas of blood formation, endocrine system	

Name of the discipline	**Animal Anatomy 3**
2. The number of loans	Four
3. Prerequisites:	Fundamentals of general biology, zoology, histology, animal anatomy 2.
4. Post requisites:	Pathological anatomy, clinical diagnosis, therapy, surgery, obstetrics, parasitology and a number of other disciplines that provide theoretical and practical knowledge for the future specialty of a veterinarian.
5. Competencies:	- know the structure of the bone, muscle system, structural features in different species of animals; - know the areas and bodies of the animal and the most commonly used anatomical terms, their applied value for commodity research of livestock; - know the morphological features of the structure of organs and systems of the animal organism from development and interconnection; - Know the comparative anatomy and age features of organs; - be able to apply the basic methods of anatomical preparation, skin removal technique; - be able to use the acquired fundamental knowledge when mastering the material of special disciplines of the curriculum.
6. Course author	Department of General Biological Sciences
7. Basic literature	1. Yu.F. Yudichev, S.I. Efimov, G.A. Honin. Anatomy of pets. Recommended by the Ministry of Agriculture of the Russian Federation. Omsk, 2003 S. 43-48 2 . A.I. Gazizova, A.S. Tozhybaeva. Teaching aid "Latin-Russian-Kazakh dictionary of morphological terms" for students of the faculty of veterinary medicine. Astana, 2008 pp. 45-49 3 . A .i. Akayevsky, Yu. Yudichev, S. Seleznev. Anatomy of pets. The practice of a veterinarian. Sixth Edition. Moscow. "Aquarium - Print", 2009.638 p. 4 . A.I. Gazizova , L.M. Murzabekova Histology with the basics of cytology. Astana, 2013 pp. 63-68 5 . A .I.Gazizova , L.M.Murzabekova., N.B.Ahmetzhanova. Atlas of Pets. Volume 1. Astana - 2016. S. 45-50 6 . A.I. Gazizova , N.B. Akhmetzhan ova., L.M. Murzabekova. Anatomy of pets. Volume 1, Volume 2 Astana 2017. S. 52-56 7 . A.I.Gazizova , L.M. Murzabekova, N.B. Akhmetzhanova the Latin district ussko- Kazakh dictionary morphological terms. Astana - 2017 p. 19-28
8. The content of the discipline The system of blood and lymph circulation. The heart of animals, its structure, position, innervation and blood supply. The structure of the wall of blood vessels. The main arteries and venous arteries. Big and small circles of blood circulation. Lymphatic system and its structure. Central and peripheral nervous system . The brain and spinal cord. And analyzers (organ of vision, organ of hearing, organ of smell, touch, organ of taste) .	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Microbiology 1**
2. The number of loans	3
3. Prerequisites:	Biology, chemistry, organic chemistry, biochemistry, physics, physiology, botany, zoology, histology, genetics
4. Post requisites:	Feeding of farm animals, veterinary hygiene, veterinary radiobiology, veterinary obstetrics, surgery, epizootology, pathological physiology, pathological anatomy, clinicsқ diagnostics, veterinary and sanitary examination
5. Competencies:	To familiarize students with the features of the most significant for biotechnology prokaryotes and eukaryotes. To show the general biological significance of achievements in the field of veterinary microbiology and immunology , to highlight the role of microorganisms in the development of the agricultural sector . To provide knowledge and practical skills in general and private microbiology and immunology , as well as to reveal the role of bacteria and fungi in the nutrition of farm animals, in the occurrence of pathological processes. The student must possess modern methods of microbiological research, knowledge of the functions of microorganisms and their role in nature. The student should be able to use the beneficial properties of microorganisms in different areas of production
6. Course author	Department of Microbiology and Biotechnology
7. Basic literature	1 Bұlashev A.Қ., Sұranshiev Zh.A., Әkibekov Ө.S. Veterinary medicine; microbiology; female virology. Astana, 2017.206 b. 2 Kislenko V.N., Kolychev N.M. Veterinary microbiology and immunology. Part 1. General microbiology. Moscow Kolos, 2006.183 s 3 Bulashev A.K., Gershun V.I., Tuyakova R.K., Suranshiev Zh.A. Sanitary Microbiology. Astana, 2007.181 s. 4 Kislenko V.N., Kolychev N.M. Veterinary microbiology and immunology : a training manual / Part 2 . Immunology . - Moscow : Kolos 200 7 . - 222 p. 5 Kislenko V.N., Kolychev N.M. , Suvorina O.S. Veterinary Microbiology and Immunology : A Training Manual / Part 3 . Private microbiology . - Moscow : Kolos S , 200 7 . - 213 p. 6 Skorodumov D.I., Rodionova V.B., Kostenko T.S. Workshop on Veterinary Microbiology and Immunology: Workshop / Moscow, 2008. - 222 p. 7 Bұlashev A.Қ., Taubaev Ө., Sұranshiev Zh.A., Myrzabaev K. Microbiology: oқulyқ: Astana. Tome, 2014.-384 b.
2. **The content of the discipline** The study of the morphology , systematics and physiology of microorganisms. The spread of microorganisms in nature. Bacteriological methods: microscopy, staining with simple and complex and special methods for staining microbes, studying the mobility of microbes, preparing nutrient media. Methods for isolating a pure culture of microorganisms. Microflora of water, milk, soil, air.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Microbiology 2**
2. The number of loans	3
3. Prerequisites:	Biology, chemistry, organic chemistry, biochemistry, physics, physiology, botany, zoology, histology, genetics , veterinary microbiology 1
4. Post requisites:	Feeding of farm animals, veterinary hygiene, veterinary radiobiology, veterinary obstetrics, surgery, epizootology, pathological physiology, pathological anatomy, clinicsқ diagnostics, veterinary and sanitary examination
5. Competencies:	To familiarize students with the features of the most significant for biotechnology prokaryotes and eukaryotes. To show the general biological significance of achievements in the field of veterinary microbiology and immunology , to highlight the role of microorganisms in the development of the agricultural sector . To provide knowledge and practical skills in general and private microbiology and immunology , as well as to reveal the role of bacteria and fungi in the nutrition of farm animals, in the occurrence of pathological processes. The student must possess modern methods of microbiological research, knowledge of the functions of microorganisms and their role in nature. The student should be able to use the beneficial properties of microorganisms in different areas of production
6. Course author	Department of Microbiology and Biotechnology
7. Basic literature	1. Bұlashev A.Қ., Sұranshiev Zh.A., Әkibekov Ө.S. Veterinary medicine; microbiology; female virology. Astana, 2017.206 b. 2. Kislenko V.N., Kolychev N.M. Veterinary microbiology and immunology. Part 1. General microbiology. Moscow Kolos, 2006.183 s 3. Bulashev A.K., Gershun V.I., Tuyakova R.K., Suranshiev Zh.A. Sanitary Microbiology. Astana, 2007.181 s. 4. Kislenko VN, Kolychev NM Veterinary microbiology and immunology : a training manual / Part 2 . Immunology . - Moscow : Kolos 200 7 . - 222 p. 5. Kislenko V.N., Kolychev N.M. , Suvorina O.S. Veterinary Microbiology and Immunology : A Training Manual / Part 3 . Private microbiology . - Moscow : Kolos S , 200 7 . - 213 p. 6. Skorodumov DI, Rodionova VB, Kostenko TS Workshop on Veterinary Microbiology and Immunology: Workshop / Moscow, 2008. - 222 p. 7. Bұlashev A.Қ., Taubaev Ө., Sұranshiev Zh.A., Myrzabaev K. Microbiology: oқulyқ: Astana. Tome, 2014.-384 b.

9. Discipline content

The study of the influence of environmental factors on microorganisms, microbial genetics, the principles and methods of sanitary-microbiological research scientist e of infection and immunity ie , specific host defense factors, allergies, practical application of the phenomena of immunity. The study of the cultural and biochemical properties of microorganisms. Determination of the sensitivity of microorganisms to antibiotics and bacteriophages. Methods of infection in laboratory animals.

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Microbiology 3**
2. The number of loans	four
3. Prerequisites:	Biology, chemistry, organic chemistry, biochemistry, physics, physiology, botany, zoology, histology, genetics 6 veterinary microbiology 2
4. Post requisites:	Feeding of farm animals, veterinary hygiene, veterinary radiobiology, veterinary obstetrics, surgery, epizootology, pathological physiology, pathological anatomy, clinicsқ diagnostics, veterinary and sanitary examination
5. Competencies:	To familiarize students with the features of the most significant for biotechnology prokaryotes and eukaryotes. To show the general biological significance of achievements in the field of veterinary microbiology and immunology , to highlight the role of microorganisms in the development of the agricultural sector . To provide knowledge and practical skills in general and private microbiology and immunology , as well as to reveal the role of bacteria and fungi in the nutrition of farm animals, in the occurrence of pathological processes. The student must possess modern methods of microbiological research, knowledge of the functions of microorganisms and their role in nature. The student should be able to use the beneficial properties of microorganisms in different areas of production
6. Course author	Department of Microbiology and Biotechnology
7. Basic literature	1. Bұlashev A.Қ., Sұranshiev Zh.A., Әkibekov Ө.S. Veterinary medicine; microbiology; female virology. Astana, 2017.206 b. 2. Kislenko V.N., Kolychev N.M. Veterinary microbiology and immunology. Part 1. General microbiology. Moscow Kolos, 2006.183 s 3. Bulashev A.K., Gershun V.I., Tuyakova R.K., Suranshiev Zh.A. Sanitary Microbiology. Astana, 2007.181 s. 4. Kislenko VN, Kolychev NM Veterinary microbiology and immunology : a training manual / Part 2 . Immunology . - Moscow : Kolos 200 7 . - 222 p. 5. Kislenko V.N., Kolychev N.M. , Suvorina O.S. Veterinary Microbiology and Immunology : A Training Manual / Part 3 . Private microbiology . - Moscow : Kolos S , 200 7 . - 213 p. 6. Skorodumov DI, Rodionova VB, Kostenko TS Workshop on Veterinary Microbiology and Immunology: Workshop / Moscow, 2008. - 222 p. 7. Bұlashev A.Қ., Taubaev Ө., Sұranshiev Zh.A., Myrzabaev K. Microbiology: oқulyқ: Astana. Tome, 2014.-384 b.
8. The content of the discipline The causative agents of the main infectious diseases : pathogenic cocci, the family of enterobacteria, brucellosis, tuberculosis, swine erysipelas, listeriosis, leptospirosis, anthrax, pathogenic anaerobes, pathogenic spirils, and dermatomycoses. Diagnosis and specific prevention of infectious diseases .	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Virology**
2. The number of loans	5
3. Prerequisites:	Biology, chemistry, organic chemistry, biochemistry, physics, physiology, botany, zoology, histology, genetics, veterinary microbiology and immunology
4. Post requisites:	Feeding of farm animals, veterinary microbiology and immunology, veterinary hygiene, veterinary radiobiology .
5. Competencies:	To have an idea of the nature and variety of viruses, virological processes, and safety when working with viruses . H nat nature and diversity of viruses, virological processes in agricultural practices, the basics of general virology , infection, immunity and genetics of viruses, the main diagnostic methods of viral diseases of farm animals, methods . At the Met to work with pathological material: microscopy, candling, methods for isolation and cultivation of viruses . In ladet complex th diagnostic activities related to issues of general virology .
6. Course author	Department of Microbiology and Biotechnology
7. Basic literature	1 Myrzabekova Sh.B. General virology. Almaty. 2008 from 12-40 2. Trotsenko NI, Belousova RV, Preobrazhenskaya E.A. Practical veterinary virology. - M.: Agropromizdat, 2008.-286 p. 3. Lecture course in veterinary virology. Ed. Zhumabaeva Kh.Zh., Suranshieva Zh.A.- Astana, KazATU, 2012 . 50s 4. J.K. Tөlemisova, G.T.Kasenova, B.Mұzapbarov. Microbiology, female virology. - Almaty. 2015 , pp. 81-85.
8. The content of the discipline Discipline examines the characteristics, classification and reproduction of viruses, virus stability in the environment, genetics and ecologists and viruses, pathogenesis of viral infections, antiviral immunity of the organism , diagostiki and is specific second Preventive and viral diseases of farm animals	

1. Basic information about the discipline:	
Name of the discipline	**Physiology and biochemistry of animals 1**
2. The number of loans	3
3. Prerequisites:	Society nd biology, mathematics, chemistry, biochemistry, morphology of animals
4. Post requisites:	Pathological physiology, clinical diagnosis .
5. Competencies:	**Know: the** essence of physiological processes in the animal body; patterns of biochemical processes in the body. **To be able to: -** determine the physiological state of productive animals by the physiological constants of homeostasis; to analyze the mechanisms of physiological processes and use them at about occupational activities; conduct physiological experiments; determine the most important physiological indicators of animals; - apply the obtained theoretical biochemical knowledge and skills in professional practical and research activities **Possess skills: -** conduct a physiological experiment to study the physiological processes and functions of the animal organism under the influence of various environmental factors on them, using the necessary instruments and laboratory equipment;
6. Course author	Department of General Biological Sciences
7. Basic literature	**Animal physiology** 1. Lysov V.F., Ippolitova T.V., Maksimov V.I. Physiology and ethology of animals. - M. 2012-604 p. 2. Apchel, V.Ya. Human and animal physiology. - M.: IC Academy, 2013 .-- 448 p. 3 . Blasis, K. Physiology of the cardiovascular system and its drug regulation functions in animals: a training manual - St. Petersburg .: Doe, 2013. - 160 c. 4 . Zhumadina Sh.M. Physiology of man and animals: a training manual- Pavlodar .: Kereku. 2016.- 171 p.
8. The content of the discipline Introduction to physiology and biochemistry . The subject, methods and brief history of the development of the discipline. The basic principles of the structural and functional organization of animals. Homeostasis. The principles of nervous and humoral regulation of physiological functions. Physiology of the central nervous system and the autonomic nervous system. Cortex of the cerebral hemispheres. Modern ideas about ethology. Physiology of the blood of the nasal system, digestive and respiratory systems.	

1. Basic information about the discipline:	
Name of the discipline	**Animal physiology and biochemistry 2**
2. The number of loans	four
3. Prerequisites:	Society nd biology, mathematics, chemistry, biochemistry, morphology of animals , physiology and biochemistry of animals 1
4. Post requisites:	Pathological physiology, clinical diagnosis .
5. Competencies:	**Know: the** essence of physiological processes in the animal body; patterns of biochemical processes in the body. **To be able to: -** determine the physiological state of productive animals by the physiological constants of homeostasis; analyze the mechanisms of physiological processes and use them in professional activities; conduct physiological experiments; determine the most important physiological indicators of animals; - apply the obtained theoretical biochemical knowledge and skills in professional practical and research activities **Possess skills: -** conduct a physiological experiment to study the physiological processes and functions of the animal organism under the influence of various environmental factors on them, using the necessary instruments and laboratory equipment;
6. Course author	Department of General Biological Sciences
7. Basic literature	**Animal physiology** 1. Lysov V.F., Ippolitova T.V., Maksimov V.I. Physiology and ethology of animals . - M. 2012-604 p. 2. Apchel, V.Ya. Human and animal physiology. - M.: IC Academy, 2013 .-- 448 p. 3 . Blasis, K. Physiology of the cardiovascular system and its drug regulation functions in animals: a training manual - St. Petersburg .: Doe, 2013. - 160 c. 4 . Zhumadina Sh.M. Physiology of man and animals: a training manual- Pavlodar .: Kereku. 2016.- 171 p.
8. The content of the discipline Physiology of endocrine glands. General characteristics of the endocrine glands, their functions, regulation. Prostaglandins, their action in animals. The biological significance of metabolism and energy. Metabolism: carbohydrates, lipids, proteins, minerals, water. Energy exchange. Physiology of the excretory system. Urination mechanism; processes of filtration, reabsorption, secretion, synthesis. Excretory functions of the digestive tract, respiratory organs.	

1. Basic information about the discipline:	
Name of the discipline	**Animal physiology and biochemistry 3**
2. The number of loans	3
3. Prerequisites:	Society nd biology, mathematics, chemistry, biochemistry, morphology of animals
4. Post requisites:	Pathological physiology, clinical diagnosis , physiology and biochemistry of animals 2 .
5. Competencies:	**Know: the** essence of physiological processes in the animal body; patterns of biochemical processes in the body. **To be able to: -** determine the physiological state of productive animals by the physiological constants of homeostasis; analyze the mechanisms of physiological processes and use them in professional activities; conduct physiological experiments; determine the most important physiological indicators of animals; - apply the obtained theoretical biochemical knowledge and skills in professional practical and research activities **Possess skills: -** conduct a physiological experiment to study the physiological processes and functions of the animal organism under the influence of various environmental factors on them, using the necessary instruments and laboratory equipment;
6. Course author	Department of General Biological Sciences
7. Basic literature	**Animal physiology** 1. Lysov V.F., Ippolitova T.V., Maksimov V.I. Physiology and ethology of animals. - M. 2012-604 p. 2. Apchel, V.Ya. Human and animal physiology. - M.: IC Academy, 2013 .-- 448 p. 3 . Blasis, K. Physiology of the cardiovascular system and its drug regulation functions in animals: a training manual - St. Petersburg .: Doe, 2013. - 160 c. 4 . Zhumadina Sh.M. Physiology of man and animals: a training manual- Pavlodar .: Kereku. 2016.- 171 p.
8. The content of the discipline Hormones. Enzymes Squirrels . Nucleotides and nucleosides, DNA structure , RNA. Nucleic acid biosynthesis. Aminoacyl tRNA synthetases. The genetic code. Stages of protein synthesis, multienzyme mechanism of protein synthesis. Recombinant molecules and problems of genetic engineering. Hybridization methods. Southern blotting method. Polymerase chain reaction. Vitamins Protein biosynthesis. Biochemistry of blood, muscle tissue, urination, milk and milk formation.	

1. Basic information about the discipline:	
Name of the discipline	Clinical diagnosis with radiology
2. The number of loans	**4**
3. Prerequisites:	Anatomy, physiology and biochemistry of animals
4. Post requisites:	In domestic animal diseases, Laboratory diagnostics
5. Competencies:	Know the techniques in the clinical examination of animals, the clinical manifestation of pathologies able to assess the results of clinical and laboratory studies have medical th thinking.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1) The basics of clinical hematology: a training manual / S.A. Volkova, N.N. Borovkov. - N. Novgorod: Ed. Nizhny Novgorod State Medical Academy, 2013. - 400 p. 2) Murzagulov K.K., Malashko V.V. Methods of diagnostic and therapeutic equipment in veterinary practice: a Training manual. Astana , 2013.130 s . 3) Kurdeko A.S., Kovalev S.P., Murzagulov K.Kh. Clinical diagnosis of internal diseases of animals: Textbook, Publisher: Lan, 2014. - 544 p. 4) Tagesu Abdisa. Review o n Practical Guidance of Veterinary Clinical Diagnostic Approach // International Journal of Veterinary Science and Research, June 2017. DOI: 10.17352 / ijvsr.000020.
8. The content of the discipline The concept of clinical diagnosis. Methods of a clinical study of animals. General study of animals. The main syndromes of defeat of the respiratory , digestive , serd echno circulatory, urinary and nervous systems . General blood analysis. Laboratory analysis of urine. Diagnosis of metabolic disorders. Ecological characteristics of animal populations and biogeocenoses for the diagnosis of endemic diseases. Special diagnostic methods: X-ray diagnostics, endoscopy, ultrasound diagnostics, DNA diagnostics	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary pharmacology and toxicology 1**
2. The number of loans	**2**
3. Prerequisites:	F iziologiya, microbiology, general biology, molecular biology, chemistry, biochemistry, botany, biophysics
4. Post requisites:	Non-communicable diseases, veterinary pharmacy, clinical pharmacology, clinical toxicology, forensic toxicology, veterinary and sanitary examination, hygiene and sanitation, parasitology and invasive diseases, veterinary surgery, obstetrics and gynecology.
5. Competencies:	The student must **have an idea, know, be able, possess, be competent:** -about the main mechanisms of the influence of drugs on the body, the conditions for increasing their pharmacological effectiveness with minimal negative effects - methods of research on toxicity of pesticides, poisonous plants, feed additives - identify the causes of poisoning of farm animals - treatment methods and first aid in case of poisoning - to analyze the toxicological situation and give a toxicological assessment of the quality of livestock products in case of poisoning.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Talanov G.A., Zhulenko V.N., Rabinovich M.I. Veterinary toxicology. Moscow, 2004 g . S 38-42 2 . Gaevaya M.D., Gaevaya L.M. Pharmacology with the recipe. 2016, p. 384 3 . State Pharmacopoeia of the Republic of Kazakhstan. Astana, volume 1, 2,3, 2008-2014. 4. Sokolov V.D. and other Pharmacology. M. 2014 g . S 21-23
8. The content of the discipline The subject and objectives of veterinary pharmacology. Classification of drugs. General patterns of interaction of drugs with biosubstance of the body. Pharmacokinetics , pharmacodynamics of drugs. Substances that inhibit the central nervous system. Substances that excite the central nervous system. Analeptics, mainly stimulating the function of the cerebral cortex. Analeptics of the medulla oblongata. Substances that stimulate the function of the spinal cord. General tonic substances.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary pharmacology and toxicology 2**
2. The number of loans	**3**
3. Prerequisites:	F iziologiya, microbiology, general biology, molecular biology, chemistry, biochemistry, botany, biophysics , Veterinary Pharmacology and Toxicology 1
4. Post requisites:	Non-communicable diseases, veterinary pharmacy, clinical pharmacology, clinical toxicology, forensic toxicology, veterinary and sanitary examination, hygiene and sanitation, parasitology and invasive diseases, veterinary surgery, obstetrics and gynecology.
5. Competencies:	The student must **have an idea, know, be able, possess, be competent:** -about the main mechanisms of the influence of drugs on the body, the conditions for increasing their pharmacological effectiveness with minimal negative effects - methods of research on toxicity of pesticides, poisonous plants, feed additives - identify the causes of poisoning of farm animals - treatment methods and first aid in case of poisoning - to analyze the toxicological situation and give a toxicological assessment of the quality of livestock products in case of poisoning.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Talanov G.A., Zhulenko V.N., Rabinovich M.I. Veterinary toxicology. Moscow, 2004 g . S 38-42 2 . Gaevaya M.D., Gaevaya L.M. Pharmacology with the recipe. 2016, p. 384 3 . State Pharmacopoeia of the Republic of Kazakhstan. Astana, volume 1, 2,3, 2008-2014. 4. Sokolov V.D. and other Pharmacology. M. 2014 g . S 21-23
8. The content of the discipline Substances acting on individual physiological processes in the body. Cardiac glycosides and vasodilators. Diuretic agents. Substances acting on blood. Uterine funds. Substances that affect liver function. Medicinal substances acting on metabolic processes in the body. Chemotherapeutic substances: antibiotics, sulfonamides, nitrofurans, medicinal paints, anthelmintic, antiprotozoal agents, insectoacaricides, deratization substances.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary pharmacology and toxicology 3**
2. The number of loans	**3**
3. Prerequisites:	F iziologiya, microbiology, general biology, molecular biology, chemistry, biochemistry, botany, biophysics , Veterinary Pharmacology and Toxicology 2
4. Post requisites:	Non-communicable diseases, veterinary pharmacy, clinical pharmacology, clinical toxicology, forensic toxicology, veterinary and sanitary examination, hygiene and sanitation, parasitology and invasive diseases, veterinary surgery, obstetrics and gynecology.
5. Competencies:	The student must **have an idea, know, be able, possess, be competent:** -about the main mechanisms of the influence of drugs on the body, the conditions for increasing their pharmacological effectiveness with minimal negative effects - methods of research on toxicity of pesticides, poisonous plants, feed additives - identify the causes of poisoning of farm animals - treatment methods and first aid in case of poisoning - to analyze the toxicological situation and give a toxicological assessment of the quality of livestock products in case of poisoning.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Talanov G.A., Zhulenko V.N., Rabinovich M.I. Veterinary toxicology. Moscow, 2004 g . S 38-42 2 . Gaevaya M.D., Gaevaya L.M. Pharmacology with the recipe. 2016, p. 384 3 . State Pharmacopoeia of the Republic of Kazakhstan. Astana, volume 1, 2,3, 2008-2014. 4. Sokolov V.D. and other Pharmacology. M. 2014 g . S 21-23
8. The content of the discipline . The subject and objectives of veterinary toxicology. Classification of poisons. The principles of diagnosis, treatment and prevention of poisoning. Toxicity criteria. Private toxicology and toxicological analysis. Chemical toxicosis. Feed toxicosis. Poisoning with feed additives, feed preservatives and premixes. Mycotoxicosis. Phytotoxicosis. Natural toxins. Methods of chemical toxicological analysis and assessment of the quality of products of animal origin.	

1. Basic information about the discipline:	
Name of the discipline	**Pathomorphology 1**
2. The number of loans	**Four**
3. Prerequisites:	And animal natomy, histology with the basics of cytology, private histology and animal embryology, ontogenesis, zoology, the genetic basis of hereditary diseases and anomalies .
4. Post requisites:	Veterinary surgery, internal animal diseases, veterinary obstetrics and gynecology, veterinary epidemiology, forensics .
5. Competencies:	*know:* - basic concepts of general nosology; the role of the causes, conditions and reactivity of the organism in the occurrence, development and completion (outcome) of diseases; *Be able to:* analyze clinical, laboratory, experimental, pathomorphological and other data, formulate on their basis a conclusion about the possible causes and mechanisms of development of pathological processes;
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Pathological physiology and pathological anatomy of animals / Zharov A.V., Adamushkin L.N., Loseva T.V., Strelnikov A.P., - M., Kolos S, 2007. 304 p. 2. S.I. Lyutinsky Pathological physiology of animals .- M.: GEOTAR-Media, 2011. p.560. 3 .A.A. Zharov Pathological anatomy of animals. St. Petersburg, Moscow, Krasnodar 2013, p. 603. 4 .Yu.G. Vasiliev, E.I. Troshin, D.S. Berestov. Tests for pathological physiology. St. Petersburg, Moscow, Krasnodar 2015, p.399. 5 .B.N. Baimatov. Workshop on pathological physiology St. Petersburg, Moscow, Krasnodar 2015 . 6 .D.G. Latypov, I.N. Zalyalov Autopsy and pathological diagnosis of animal diseases. St. Petersburg, Moscow, Krasnodar 2015, p. 382 7. V.A.Salimov ATLAS. Pathology and differential diagnosis of factorial diseases of farm animals. St. Petersburg, Moscow, Krasnodar 2016, p . 382 .
8. The content of the discipline The study of common pathological processes: the concept of general nosology, thanatology, general etiology, pathogenic environmental factors; the effect of heredity, resistance, reactivity, the immune system on the development of pathology.	

1. Basic information about the discipline:	
Name of the discipline	**Pathomorphology 2**
2. The number of loans	**3**
3. Prerequisites:	Anatomy of animals, histology with the basics of cytology, private histology and embryology of animals, ontogenesis, zoology, genetic foundations of hereditary diseases and anomalies of pathomorphology 1 .
4. Post requisites:	Veterinary surgery, internal animal diseases, veterinary obstetrics and gynecology, veterinary epidemiology, forensics.
5. Competencies:	*know:* - basic concepts of general nosology; the role of the causes, conditions and reactivity of the organism in the occurrence, development and completion (outcome) of diseases; *Be able to:* analyze clinical, laboratory, experimental, pathomorphological and other data, formulate on their basis a conclusion about the possible causes and mechanisms of development of pathological processes;
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Pathological physiology and pathological anatomy of animals / Zharov A.V., Adamushkin L.N., Loseva T.V., Strelnikov A.P., - M., Kolos S, 2007. 304 p. 2. S.I. Lyutinsky Pathological physiology of animals .- M.: GEOTAR-Media, 2011. p.560. 3 .A.A. Zharov Pathological anatomy of animals. St. Petersburg, Moscow, Krasnodar 2013, p. 603. 4 .Yu.G. Vasiliev, E.I. Troshin, D.S. Berestov. Tests for pathological physiology. St. Petersburg, Moscow, Krasnodar 2015, p.399. 5 .B.N. Baimatov. Workshop on pathological physiology St. Petersburg, Moscow, Krasnodar 2015 . 6 .D.G. Latypov, I.N. Zalyalov Autopsy and pathological diagnosis of animal diseases. St. Petersburg, Moscow, Krasnodar 2015, p. 382 7. V.A.Salimov ATLAS. Pathology and differential diagnosis of factorial diseases of farm animals. St. Petersburg, Moscow, Krasnodar 2016, p . 382 .
8. The content of the discipline The study of typical pathological processes: pathophysiology and pathomorphology of the cell, necrosis and apoptosis, peripheral circulation and microcirculation, inflammation, thermal regulation, tissue growth, tumors, leukemia, metabolism, starvation, manifestations of compensatory-adaptive processes. Malformations and deformities. Pathology of organs and body systems.	

1. Basic information about the discipline:	
Name of the discipline	**Pathomorphology 3**
2. The number of loans	**3**
3. Prerequisites:	Anatomy of animals, histology with the basics of cytology, private histology and embryology of animals, ontogenesis, zoology, genetic foundations of hereditary diseases and anomalies , pathomorphology 2 .
4. Post requisites:	Veterinary surgery, internal animal diseases, veterinary obstetrics and gynecology, veterinary epidemiology, forensics.
5.Competencies:	*know:* - basic concepts of general nosology; the role of the causes, conditions and reactivity of the organism in the occurrence, development and completion (outcome) of diseases; *Be able to:* analyze clinical, laboratory, experimental, pathomorphological and other data, formulate on their basis a conclusion about the possible causes and mechanisms of development of pathological processes;
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Pathological physiology and pathological anatomy of animals / Zharov A.V., Adamushkin L.N., Loseva T.V., Strelnikov A.P., - M., Kolos S, 2007. 304 p. 2. S.I. Lyutinsky Pathological physiology of animals .- M.: GEOTAR-Media, 2011. p.560. 3 .A.A. Zharov Pathological anatomy of animals. St. Petersburg, Moscow, Krasnodar 2013, p. 603. 4 .Yu.G. Vasiliev, E.I. Troshin, D.S. Berestov. Tests for pathological physiology. St. Petersburg, Moscow, Krasnodar 2015, p.399. 5 .B.N. Baimatov. Workshop on pathological physiology St. Petersburg, Moscow, Krasnodar 2015 . 6 .D.G. Latypov, I.N. Zalyalov Autopsy and pathological diagnosis of animal diseases. St. Petersburg, Moscow, Krasnodar 2015, p. 382 7. V.A.Salimov ATLAS. Pathology and differential diagnosis of factorial diseases of farm animals. St. Petersburg, Moscow, Krasnodar 2016, p . 382 .
8. The content of the discipline Pathomorphology of infectious diseases (anthrax, clostridiosis, brucellosis, tuberculosis, paratuberculosis, INAN, avian influenza, ornithosis, nodular dermatitis) , mycoses and mycotoxicoses (aspergillosis, candidiasis, dermatomycosis), diseases caused by protozoa and helminths , pyrocystic disease sarcocystoses). Methods and opening technique. Documentation at autopsy of both animals and birds .	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary hygiene**
2. The number of loans	**5**
3. Prerequisites:	Veterinary microbiology, veterinary virology, clinical diagnosis .
4. Post requisites:	Pathomorphology, veterinary and sanitary examination of livestock and poultry products, general clinical radiobiology .
5. Competencies:	**Know: the** theoretical foundations of the influence of environmental factors on the animal organism; standards and rules for the operation, maintenance, feeding, watering, care and rearing of different species, various sex and age and production groups of animals, taking into account their zoning zones. **Be able to :** sanitary-hygienic control and assessment of all microclimate parameters of rooms for animals ; on the basis of information data, draw up a veterinary-hygienic conclusion with specific proposals, addressing negative causes and improving the technology for the operation of farm animals in general. **Own** : research methods of environmental objects; methods for determining the microclimate parameters of livestock buildings
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Kuznetsov AF, Naydensky MS, Animal Hygiene. Textbook. - M : Kolos. , 2001. - 364 p. 2. Myrzabekov Zh.B., Ibragimov P.Sh. Veterinary hygiene. Оқулық . - Almaty : KazAU, 2011 .-- 258 b. 3. Akhmetov AN, Zhetpis anily Қ. Veterinary hygiene. - Astana, 2015 .-- 157 b. 4. Kochish I.I., Kolyuzhny N.S., Volkova L.A. Pet hygiene. Tutorial. - S.-Pb .: Doe, 2008 .-- 221 p. 5. Gershun V.I. Veterinary hygiene. Tutorial. - Almaty : Kaynar, 2005 .-- 232 p.
8. The content of the discipline Introduction History of development, objectives, goals of the discipline. The prevalence of various temperatures , humidity, air mobility and atmospheric pressure , lu clean energy and light on the health and productivity of animals . Soil hygiene . Sanitary and hygienic assessment of ventilation, removal, storage and disinfection of manure in livestock buildings . Sanitary and hygienic requirements for water, animal feed and animal feed , livestock buildings .	

1. Basic information about the discipline:	
Name of the discipline	**Training practice**
2. The number of loans	**four**
3. Prerequisites:	Veterinary microbiology, virology, hygiene, operative surgery, clinical diagnosis.
4. Post requisites:	Veterinary surgery, internal diseases of animals, veterinary epidemiology
5. Competencies:	The main goal is to consolidate theoretical knowledge with practical skills under the guidance of a teacher of disciplines. The objectives of the practice are to master the methods of laboratory diagnosis of infectious diseases of animals, to get acquainted with the hygiene of keeping animals, to acquire practical skills in operations and diagnosis of various pathologies.
6. Course author	Department of Veterinary Medicine
7. Basic literature	The program of practice (training) for specialties of veterinary medicine. Astana 2019
8. The content of the discipline Familiarization with the departments of laboratories (virological, serological, bacteriological) of their ongoing work. Laboratory methods for the diagnosis of infectious diseases of animals. Sanitary and hygienic requirements for livestock farms and premises for animals. Preparing the animal for the operation and its implementation, postoperative care and maintaining training documentation. application of physical, instrumental and laboratory research methods.	

1. Basic information about the discipline:	
Name of the discipline	Clinical practice
2. The number of loans	5
3. Prerequisites:	Internal animal diseases, veterinary obstetrics and gynecology, veterinary surgery, veterinary epidemiology, parasitology and invasive diseases, pathomorphology, veterinary sanitary examination of animal products
4. Post requisites:	Disciplines of specialization, production and undergraduate practice.
5. Competencies:	The purpose of the practice is : professional training of students for the future profession and sets the main task: to master research methods and correctly diagnose diseases of infectious and non-infectious etiology according to the stipulated work curriculum of disciplines.
6. Course author	Department of Veterinary Medicine
7. Basic literature	Clinical practice program for 4-year students in the specialty of veterinary medicine
8. The content of the discipline Mastering the methods of a complex of diagnostic, therapeutic and preventive measures, as well as laboratory tests directly in the conditions of farms and markets of Astana. Autopsy and disposal of pathological material.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary sanitary examination of livestock products 1**
2. The number of loans	**four**
3. Prerequisites:	M orthology of animals, histology with the basics of cytology, physiology and biochemistry of animals, veterinary microbiology and virology, animal pathology, etc.
4. Post requisites:	Be terinarn th Radiobiologists I ; veterinary and sanitary th expertise and products of plant growing, fish farming, bee HANDBOOK; veterinary and sanitary th parasitologists I ;
5. Competencies:	*To know and understand* : the rules of veterinary services for slaughtered animals during their procurement, transportation, acceptance, maintenance and pre-slaughter training at slaughter and processing enterprises; methods of veterinary sanitary examination and assessment of livestock products; **be able to** : conduct veterinary and sanitary measures at all stages of the technology for processing meat and dairy products; **own** : skills in technology and hygiene of processing livestock products; sanitary-hygienic methods of research and sanitary assessment of livestock products; methods of FEE and standardization of livestock products.
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Lykasova I.A., Krygin V.A., Bezina I.V., Solyanskaya I.A. Veterinary sanitary examination of raw materials and products of animal and vegetable origin. Laboratory workshop. Moscow, 2015 .-- 304 s. 2. Reznichenko L.V., Vodyanitskaya S.N., Noskov S.B., Denisova N.A., Kolesnichenko S.P., Nikonkov D.L. Invasive diseases transmitted to humans through meat and fish, veterinary and sanitary assessment of slaughter products. Tutorial. Moscow, 2016 .-- 96 s. 3. Pronin V.V., Fisenko S.P. Veterinary and sanitary expertise with the basics of technology and standardization of livestock products. Workshop Moscow, 2016 .-- 239 p. 4. Baldzhi Yu.A., Adilbekov J.S. Modern aspects of quality control and food safety. Monograph. - Astana: Printing Prospect Printing, 2017. - 384 p. 5. Seregin I.G., Borovkov M.F., Nikitchenko V.E. Veterinary sanitary examination of food products in food markets. St. Petersburg: LLC “Quadro”. ISBN 978-5-906371-61-7. 2018 .-- 478 p.
8. The content of the discipline Definition of discipline. The doctrine of meat. Raw materials for the meat processing industry. Basics of technology and hygiene of slaughter of animals. Post-mortem VSE carcasses and internal organs.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary sanitary examination of livestock products 2**
2. The number of loans	**3**
3. Prerequisites:	M orfologiya animals, histology with the basics of cytology, physiology and biochemistry of animals, veterinary microbiology and virus ologiya, pathology animal , veterinary and sanitary examination of livestock products 1
4. Post requisites:	Be terinarn th Radiobiologists I ; veterinary and sanitary th expertise and products of plant growing, fish farming, bee-keeping; veterinary and sanitary th parasitologists I ;
5. Competencies:	*To know and understand* : the rules of veterinary services for slaughtered animals during their procurement, transportation, acceptance, maintenance and pre-slaughter training at slaughter and processing enterprises; methods of veterinary sanitary examination and assessment of livestock products; **be able to** : conduct veterinary and sanitary measures at all stages of the technology for processing meat and dairy products; **own** : skills in technology and hygiene of processing livestock products; sanitary-hygienic methods of research and sanitary assessment of livestock products; methods of FEE and standardization of livestock products.
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Lykasova I.A., Krygin V.A., Bezina I.V., Solyanskaya I.A. Veterinary sanitary examination of raw materials and products of animal and vegetable origin. Laboratory workshop. Moscow, 2015 .-- 304 s. 2. Reznichenko L.V., Vodyanitskaya S.N., Noskov S.B., Denisova N.A., Kolesnichenko S.P., Nikonkov D.L. Invasive diseases transmitted to humans through meat and fish, veterinary and sanitary assessment of slaughter products. Tutorial. Moscow, 2016 .-- 96 s. 3. Pronin V.V., Fisenko S.P. Veterinary and sanitary expertise with the basics of technology and standardization of livestock products. Workshop Moscow, 2016 .-- 239 p. 4. Baldzhi Yu.A., Adilbekov J.S. Modern aspects of quality control and food safety. Monograph. - Astana: Printing Prospect Printing, 2017. - 384 p. 5. Seregin I.G., Borovkov M.F., Nikitchenko V.E. Veterinary sanitary examination of food products in food markets. St. Petersburg: LLC “Quadro”. ISBN 978-5-906371-61-7. 2018 .-- 478 p.
8. The content of the discipline Veterinary sanitary examination of mascara and internal organs in non-communicable diseases. Veterinary and sanitary examination of animal slaughter products for invasive diseases. Veterinary and sanitary examination of carcasses and organs and other products in slaughter upon detection of infectious animal diseases . Veterinary sanitary examination of rabbit slaughter products.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary sanitary examination of livestock products 3**
2. The number of loans	**3**
3. Prerequisites:	M orfologiya animal histology Cytology with basics, physiology and biochemistry of the animals, veterinary microbiology and virology, animal pathology , veterinary sanitary examination of animal products 2 .
4. Post requisites:	Be terinarn th Radiobiologists I ; veterinary and sanitary th expertise and products of plant growing, fish farming, bee-keeping; veterinary and sanitary th parasitologists I ;
5. Competencies:	*To know and understand* : the rules of veterinary services for slaughtered animals during their procurement, transportation, acceptance, maintenance and pre-slaughter training at slaughter and processing enterprises; methods of veterinary sanitary examination and assessment of livestock products; **be able to** : conduct veterinary and sanitary measures at all stages of the technology for processing meat and dairy products; **own** : skills in technology and hygiene of processing livestock products; sanitary-hygienic methods of research and sanitary assessment of livestock products; methods of FEE and standardization of livestock products.
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Lykasova I.A., Krygin V.A., Bezina I.V., Solyanskaya I.A. Veterinary sanitary examination of raw materials and products of animal and vegetable origin. Laboratory workshop. Moscow, 2015 .-- 304 s. 2. Reznichenko L.V., Vodyanitskaya S.N., Noskov S.B., Denisova N.A., Kolesnichenko S.P., Nikonkov D.L. Invasive diseases transmitted to humans through meat and fish, veterinary and sanitary assessment of slaughter products. Tutorial. Moscow, 2016 .-- 96 s. 3. Pronin V.V., Fisenko S.P. Veterinary and sanitary expertise with the basics of technology and standardization of livestock products. Workshop Moscow, 2016 .-- 239 p. 4. Baldzhi Yu.A., Adilbekov J.S. Modern aspects of quality control and food safety. Monograph. - Astana: Printing Prospect Printing, 2017. - 384 p. 5. Seregin I.G., Borovkov M.F., Nikitchenko V.E. Veterinary sanitary examination of food products in food markets. St. Petersburg: LLC “Quadro”. ISBN 978-5-906371-61-7. 2018 .-- 478 p.
8. The content of the discipline Veterinary and sanitary expertise and the basics of technology and milk production. Veterinary sanitary examination of milk of sick animals. Veterinary and sanitary examination of livestock raw materials (leather and fur, keratin-containing, by-products, intestinal). Veterinary sanitary examination of poultry and egg meat. Veterinary sanitary examination of poultry products for diseases.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Surgery 1**
2. The number of loans	**3**
3. Prerequisites:	morphology of animals with Latin veterinary terminology, physiology and biochemistry of animals, veterinary microbiology and animal virology, veterinary pharmacology with toxicology, animal pathology.
4. Post requisites:	The study of the discipline " Veterinary surgery" will deepen knowledge in this area of veterinary medicine
5. Competencies:	The student must **:** Demonstrate knowledge and understanding in the field of veterinary surgery, the use of knowledge in a professional manner; be able to apply knowledge and solve problems in the field of veterinary surgery, express their opinions and be able to interpret information to make judgments taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 Magda I.I., Itkin B.Z., Voronin I.I. Surgical surgery with the basics of topographic anatomy. M. Kolos, 2000 g . S 63-65 2 Lebedev A.V., Lipovsky K.A. "General Veterinary Surgery" Textbook. Spike, 2000 g of . S 24-28 3 Semenov B.S., Lebedev A.V., Private veterinary surgery. Textbook for High Schools - 2nd edition - M., Kolos, 2003 . S 37-41 4 Lebedev A.V., Chervanev V.A., Troyanovskaya L.P. Veterinary ophthalmology. Tutorial. M., Kolos. 2004 g . S 42-49 5 Veremey E.I., Stekolnikov A.A. Clinical surgery in veterinary medicine. Textbook for students of higher educational institutions with a degree in Veterinary Medicine - Minsk. ITC Ministry of Finance, 2010 g . S 52-58 6 Martinec Elisabeth A. Veterinary Science. Student Workbook Cornell University 2003.
8. The content of the discipline Introduction A brief history of the development of veterinary surgery. The concept of operations and their meanings. Prevention of surgical infection. The concept of aseptic and antiseptic. Methods of sterilization of surgical instruments, preparation of the surgical field and hands of the surgeon. Injection, infusion, bloodletting, puncture. Anesthesiology, general anesthesia, the concept of anesthesia, types of anesthesia, local anesthesia. Separation and connection of tissues. Bleeding.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Surgery 2**
2. The number of loans	**3**
3. Prerequisites:	morphology of animals with Latin veterinary terminology, animal physiology and biochemistry, veterinary microbiology and animal virology, veterinary pharmacology with toxicology, animal pathology , veterinary surgery 1 .
4. Post requisites:	The study of the discipline " Veterinary surgery" will deepen knowledge in this area of veterinary medicine
5. Competencies:	The student must **:** Demonstrate knowledge and understanding in the field of veterinary surgery, the use of knowledge in a professional manner; be able to apply knowledge and solve problems in the field of veterinary surgery, express their opinions and be able to interpret information to make judgments taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 Magda I.I., Itkin B.Z., Voronin I.I. Surgical surgery with the basics of topographic anatomy. M. Kolos, 2000 g . S 63-65 2 Lebedev A.V., Lipovsky K.A. “General Veterinary Surgery” Textbook. Spike, 2000 g of . S 24-28 3 Semenov B.S., Lebedev A.V., Private veterinary surgery. Textbook for High Schools - 2nd edition - M., Kolos, 2003 . S 37-41 4 Lebedev A.V., Chervanev V.A., Troyanovskaya L.P. Veterinary ophthalmology. Tutorial. M., Kolos. 2004 g . S 42-49 5 Veremey E.I., Stekolnikov A.A. Clinical surgery in veterinary medicine. Textbook for students of higher educational institutions with a degree in Veterinary Medicine - Minsk. ITC Ministry of Finance, 2010 g . S 52-5 8 6 Martinec Elisabeth A. Veterinary Science. Student Workbook Cornell University 2003.
8. The content of the discipline De smurgiya , cosmetic and plastic opera tion, economic operation for compliance with safety regulations. Injuries and r- ravmatism of animals. Types of injuries and injuries. Local and general response to injury. Surgical infection. Aerobic and anaerobic infection. Sepsis. Open and closed damage. Thermal, chemical and thermochemical burns, frostbite. Skin diseases. Diseases of the muscles, tendons and burs.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Surgery 3**
2. The number of loans	**four**
3. Prerequisites:	morphology of animals with Latin veterinary terminology, animal physiology and biochemistry, veterinary microbiology and animal virology, veterinary pharmacology with toxicology, animal pathology , veterinary surgery 2 .
4. Post requisites:	The study of the discipline " Veterinary surgery" will deepen knowledge in this area of veterinary medicine
5. Competencies:	The student must **:** Demonstrate knowledge and understanding in the field of veterinary surgery, the use of knowledge in a professional manner; be able to apply knowledge and solve problems in the field of veterinary surgery, express their opinions and be able to interpret information to make judgments taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 Magda I.I., Itkin B.Z., Voronin I.I. Surgical surgery with the basics of topographic anatomy. M. Kolos, 2000 g . S 63-65 2 Lebedev A.V., Lipovsky K.A. "General Veterinary Surgery" Textbook. Spike, 2000 g of . S 24-28 3 Semenov B.S., Lebedev A.V., Private veterinary surgery. Textbook for High Schools - 2nd edition - M., Kolos, 2003 . S 37-41 4 Lebedev A.V., Chervanev V.A., Troyanovskaya L.P. Veterinary ophthalmology. Tutorial. M., Kolos. 2004. P 42-49 5 Veremey E.I., Stekolnikov A.A. Clinical surgery in veterinary medicine. Textbook for students of higher educational institutions with a degree in Veterinary Medicine - Minsk. ITC Ministry of Finance, Agr . P 52-58 6 Martinec Elisabeth A. Veterinary Science. Student Workbook Cornell University 2003.
8. The content of the discipline Diseases of the joints and bones, blood and lymph vessels, brain injuries and nerve diseases, tumors. Disease and and operations in the head area. B Diseases and operations in the neck, withers and chest. Pleurocentesis. Diseases and operations of the abdomen and urogenital organs. Rumenotomy, ruminocentesis. Castration of animals and postcastration complications. Diseases of the chest and pelvic limbs.	

1. Basic information about the discipline:	
Name of the discipline	**Internal diseases of animals 1**
2. The number of loans	**four**
3. Prerequisites:	Anatomy, genetics, histology, physiology, biochemistry, biophysics, microbiology, virology and immunology, veterinary hygiene, veterinary radiology, clinical diagnostics, pharmacology, veterinary surgery, veterinary obstetrics.
4. Post requisites:	The current state of internal diseases of animals in the Republic of Kazakhstan, the problems of distribution and ways to solve them. O defines the role of veterinary science and practice in the diagnosis, therapy and prevention, considers development prospects. Critically summarize and analyze the collected material, interpret and draw appropriate conclusions..
5. Competencies:	To apply at a professional level theoretical and practical knowledge in the diagnosis of internal diseases of animals. Conduct interpretation result s laboratory study of biological material. Properly organize treatment and prophylactic measures Know the methodology for recognizing the disease process, the basic physiological characteristics of animals; the theoretical justification of the main links in the etiology and pathogenesis of the development of diseases.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Moldaғұlov M . A., Esқozhaev K.K..Zamanbekov N.A. Zhanuarlar ishki aurulas - Oқulyқ “Nur-Print” 2009.385 2. Scherbakov G. G., Yashin A. V., Kurdeko A. P. et al. Internal diseases of animals . Textbook. - Publishing house "Lan", 2014.-720s. 3. Scherbakov G.G., Yashin A.V., Kurdeko A.P. et al. Workshop on Internal Diseases of Animals SP b.: Doe 2016.-544c. 4 . Ritchey JW , Levy JK , Bliss SK , Tompkins WA , Tompkins MB , Constitutive exspression of types 1 and 2 cytokines by alveolar macrophages from feline immunodeficiency virus-infected cats. Vet. Immunol. Immunopathol , 2001. V.79 N 1-2 , p. 83-100.

8. The content of the discipline

Introduction A brief history of the development of the doctrine of internal infectious diseases of animals .. Safety technique when working with animals. General prevention and therapy for internal pain of animals, methods and means of physiotherapy and physioprophylaxis, Therapeutic technique. Both individual and group methods of giving medicines. Methods of prescribing drugs. Injection . Subcutaneous, intramuscular, intravascular administration of drugs. Probing, enemas. The technique of their implementation.

1. Basic information about the discipline:	
Name of the discipline	**Internal diseases of animals 2**
2. The number of loans	**3**
3. Prerequisites:	Anatomy, genetics, histology, physiology, biochemistry, biophysics, microbiology, virology and immunology, veterinary hygiene, veterinary radiology, clinical diagnostics, pharmacology, veterinary surgery, veterinary obstetrics , internal diseases of animals 1
4. Post requisites:	The current state of internal diseases of animals in the Republic of Kazakhstan, the problems of distribution and ways to solve them. O defines the role of veterinary science and practice in the diagnosis, therapy and prevention, considers development prospects. Critically summarize and analyze the collected material, interpret and draw appropriate conclusions ..
5. Competencies:	To apply at a professional level theoretical and practical knowledge in the diagnosis of internal diseases of animals. Conduct interpretation result s laboratory study of biological material. Properly organize treatment and prophylactic measures Know the methodology for recognizing the disease process, the basic physiological characteristics of animals ; the theoretical justification of the main links in the etiology and pathogenesis of the development of diseases.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Moldaғұlov M . A., Esқozhaev K.K..Zamanbekov N.A. Zhanuarlar ishki aurulas - Oқulyқ “Nur-Print” 2009.385 2. Scherbakov G.G., Yashin A.V., Kurdeko A.P. et al. Internal diseases of animals . Textbook. - Publishing house "Lan", 2014.- 720s. 3. Scherbakov G.G., Yashin A.V., Kurdeko A.P. et al. Workshop on internal diseases of animals SP b.: Doe 2016.-544c. 4 . Ritchey JW , Levy JK , Bliss SK , Tompkins WA , Tompkins MB , Constitutive exspression of types 1 and 2 cytokines by al veolar macrophages from feline immunodeficiency virus-infected cats. Vet. Immunol. Immunopathol , 2001. V.79 N 1-2 , p. 83-100.
8. The content of the discipline Private pathology , diagnosis, therapy and prevention of internal diseases of animals . Diseases of the cardiovascular, respiratory, digestive systems. Diseases of the heart and blood vessels. Pneumonia, bronchopneumonia, bronchitis, Inflammation of the larynx, trachea. Diseases of the scar, abomasum, books and nets. Diseases of the liver, hepatitis, hepatosis , diseases of the urinary system, inflammation of the kidneys, bladder, blood disease and nervous system. Poisoning animals. Diseases with colic.	

1. Basic information about the discipline:	
Name of the discipline	**Internal diseases of animals 3**
2. The number of loans	**3**
3. Prerequisites:	Anatomy, genetics, histology, physiology, biochemistry, biophysics, microbiology, virology and immunology, veterinary hygiene, veterinary radiology, clinical diagnostics, pharmacology, veterinary surgery, veterinary obstetrics , internal diseases of animals 2 .
4. Post requisites:	The current state of internal diseases of animals in the Republic of Kazakhstan, the problems of distribution and ways to solve them. O defines the role of veterinary science and practice in the diagnosis, therapy and prevention, considers development prospects. Critically summarize and analyze the collected material, interpret and draw appropriate conclusions ..
5. Competencies:	To apply at a professional level theoretical and practical knowledge in the diagnosis of internal diseases of animals. Conduct interpretation result s laboratory study of biological material. Properly organize treatment and prophylactic measures Know the methodology for recognizing the disease process, the basic physiological characteristics of animals ; the theoretical justification of the main links in the etiology and pathogenesis of the development of diseases.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Moldagulov M . A., Eskozhaev K.K., Zamanbekov N.A. Zhanuarlar ishki aurulary “Nur-Print” 2009.385 p. 2. Scherbakov G.G., Yashin A.V., Kurdeko A.P. et al. Internal diseases of animals . Textbook. - Publishing house "Lan", 2014.- 720s. 3. Scherbakov G.G., Yashin A.V., Kurdeko A.P. et al. Workshop on internal diseases of animals SP b.: Doe 2016.-544c. 4 . Ritchey JW , Levy JK , Bliss SK , Tompkins WA , Tompkins MB , Constitutive exspression of types 1 and 2 cytokines by alveolar macrophages from feline immunodeficiency virus-infected cats. Vet. Immunol. Immunopathol , 2001. V.79 N 1-2 , p. 83-100.
8. The content of the discipline Diseases of the metabolism and endocrine system. Ketoses, osteodystrophy, hypo and vitamin deficiencies. Pancreatitis, hypo and hyperteriosis. Anemia, white muscle disease. Disorders of mineral metabolism in animals. Disorders of protein, carbohydrate metabolism. Biogeocenotic diagnosis. Influence of the technology of keeping and feeding animals on the occurrence of internal non-communicable diseases of farm animals. Non-communicable diseases of young animals , birds, fur animals. Dyspepsia, rickets, bronchopneumonia.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary obstetrics and gynecology 1**
2. The number of loans	**3**
3. Prerequisites:	Anatomy, histology and embryology, physiology, biochemistry, pathological physiology, pharmacology, microbiology and immunology, surgical surgery, clinical diagnostics with radiology, etc.
4. Post requisites:	Studying the course "Veterinary Obstetrics and Gynecology" will allow you to create a professional basis for a veterinarian in understanding the norms and pathologies of fertilization, pregnancy, childbirth and the postpartum period of females, diseases of the newborn and breast, pathological processes leading to infertility in females
5. Competencies:	**The student should have an idea of the** structural and physiological characteristics of the reproductive apparatus of females and males, the course of the reproductive cycle, the optimal time and frequency of insemination, the necessary conditions for the normal course of pregnancy, childbirth and the postpartum period, causes of infertility, diseases of the mammary gland and newborns **To be able to** develop arguments, apply knowledge in the use of drugs for the treatment and prevention of obstetric and gynecological diseases of animals, determine sexual phenomena and pregnancy, diagnose infertility, assist with difficult births, and perform delivery operations. Own methods of diagnosing pregnancy, obstetric care, treatment of obstetric and gynecological pathologies, diseases of newborns and mammary gland.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Dzhakupov I.T. "Veterinary obstetrics and gynecology" study guide, printing house of KazATU named after G Seifullina 2011 . S 28-34 2. Studentsov AP, Shipilov Bed and . C. , Nikitin V.Ya. and etc.; Ed. Nikitina V.Ya. and Dulger G.P. - reslave. and add. Veterinary obstetrics, gynecology and biotechnology of reproduction, Moscow: Kolos, 2015.5125-s. 3. Polyantsev N.I. Veterinary obstetrics and biotechnology of animal reproduction. Textbook for higher education. and mid.special. textbook. institutions specializing in Veterinary Medicine. - Rostov n / a: Phoenix, 2016 .-- 479 p. 4. Abdrakhmanov T.Zh. "Veterinary қ obstetric w ә not gynecology" Okulyқ. Almaty-2018 317b. 5 . PradeepKumarApplied Veterinary Gynaecology & Obstetrics Textbook Student Edition. International Book Distributing Company, 2008 13.Devid E., Timothy J., Gary CW Veterinary reproducttion and obstrics. Elsevier , 2009.
8. The content of the discipline Introduction . Anatomy of the genital organs of males and females of farm animals and their species features. Female reproductive cycles. Types of artificial and natural insemination of females. Fundamentals of the physiology of animal reproduction, physiology and biochemistry of sperm. The physiology of pregnancy. Generic act and its stages. Factors causing labor. Anatomical and topographic relationship of the fetus and the birth canal of the mother during childbirth. Pelvimetry.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary obstetrics and gynecology 2**
2. The number of loans	**3**
3. Prerequisites:	Anatomy, histology and embryology, physiology, biochemistry, pathological physiology, pharmacology, microbiology and immunology, surgical surgery, clinical diagnostics with radiology, veterinary obstetrics and gynecology 1
4. Post requisites:	Studying the course "Veterinary Obstetrics and Gynecology" will allow you to create a professional basis for a veterinarian in understanding the norms and pathologies of fertilization, pregnancy, childbirth and the postpartum period of females, diseases of the newborn and breast, pathological processes leading to infertility in females
5. Competencies:	**The student should have an idea of the** structural and physiological characteristics of the reproductive apparatus of females and males, the course of the reproductive cycle, the optimal time and frequency of insemination, the necessary conditions for the normal course of pregnancy, childbirth and the postpartum period, causes of infertility, diseases of the mammary gland and newborns **To be able to** develop arguments, apply knowledge in the use of drugs for the treatment and prevention of obstetric and gynecological diseases of animals, determine sexual phenomena and pregnancy, diagnose infertility, assist with difficult births, and perform delivery operations. Own methods of diagnosing pregnancy, obstetric care, treatment of obstetric and gynecological pathologies, diseases of newborns and mammary gland.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Dzhakupov I.T. "Veterinary obstetrics and gynecology" study guide, printing house of KazATU named after G Seifullina 2011 . S 28-34 2. Studentsov AP, Shipilov Bed and . C. , Nikitin V.Ya. and etc.; Ed. Nikitina V.Ya. and Dulger G.P. - reslave. and add. Veterinary obstetrics, gynecology and biotechnology of reproduction, Moscow: Kolos, 2015.5125-s. 3. Polyantsev N.I. Veterinary obstetrics and biotechnology of animal reproduction. Textbook for higher education. and mid.special. textbook. institutions specializing in Veterinary Medicine. - Rostov n / a: Phoenix, 2016 .-- 479 p. 4. Abdrakhmanov T.Zh. "Veterinary қ obstetric w ә not gynecology" Okulyқ. Almaty -2018 g . 317b.
8. The content of the discipline Reception and care of a newborn. P urogenital period , pathology of pregnancy, pathology of childbirth, surgical obstetrics, diseases of newborn animals . Species features of the structure and function of the mammary gland of females of various animal species. Diseases and abnormalities of the mammary gland. Mastitis in animals: causes, pathogenesis, signs, classification, treatment and prevention. Dermatitis udder. Udder injuries. Sanitary rules for manual and machine milking.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary obstetrics and gynecology 3**
2. The number of loans	**four**
3. Prerequisites:	Anatomy, histology and embryology, physiology, biochemistry, pathological physiology, pharmacology, microbiology and immunology, surgical surgery, clinical diagnosis with radiology , veterinary obstetrics and gynecology 2
4. Post requisites:	Studying the course "Veterinary Obstetrics and Gynecology" will allow you to create a professional basis for a veterinarian in understanding the norms and pathologies of fertilization, pregnancy, childbirth and the postpartum period of females, diseases of the newborn and breast, pathological processes leading to infertility in females
5. Competencies:	**The student should have an idea of the** structural and physiological characteristics of the reproductive apparatus of females and males, the course of the reproductive cycle, the optimal time and frequency of insemination, the necessary conditions for the normal course of pregnancy, childbirth and the postpartum period, causes of infertility, diseases of the mammary gland and newborns **To be able to** develop arguments, apply knowledge in the use of drugs for the treatment and prevention of obstetric and gynecological diseases of animals, determine sexual phenomena and pregnancy, diagnose infertility, assist with difficult births, and perform delivery operations. Own methods of diagnosing pregnancy, obstetric care, treatment of obstetric and gynecological pathologies, diseases of newborns and mammary gland.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Dzhakupov I.T. "Veterinary obstetrics and gynecology" study guide, printing house of Seifullin KazATU. 2011 . P 28-34 2. Studentsov AP, Shipilov Bed and . C. , Nikitin V.Ya. and etc.. Veterinary obstetrics, gynecology and biotechnology of reproduction, Moscow: Kolos, 2015. 5125p. 3. Polyantsev N.I. Veterinary obstetrics and biotechnology of animal reproduction. Textbook for higher education. and mid.special. textbook. institutions specializing in Veterinary Medicine. - Rostov n / a: Phoenix, 2016 .- 479 p. 4. Abdrakhmanov T.Zh. "Veterinary obstetric and gynecology" Almaty -2018. 317p.
8. The content of the discipline Gynecology and andrology of farm animals. Infertility and barrenness of animals. Economic damage caused by infertility. Classification of infertility according to A.P. Studentsov. Diseases of the oviducts, uterus, ovaries. Diseases of the genitals of males. Diagnosis and treatment of diseases of farm animals. A set of measures for the prevention of animal infertility: organizational, economic, zootechnical, veterinary. Infertility (impotence) of manufacturers. Modern trends and intensifications and and increase the reproductive functions of animals .	

1. Basic information about the discipline:	
Name of the discipline	**Parasitology and invasive animal diseases 1**
2. The number of loans	**3**
3. Prerequisites:	Zoology of invertebrates and vertebrates, clinical diagnostics, pathological physiology (section : invasive diseases), veterinary pharmacology.
4. Post requisites:	Forensic veterinary examination, epizootology and infectious diseases, non-communicable internal diseases, organization of veterinary affairs, veterinary sanitary examination
5. Competencies:	The process of studying the discipline is aimed at the formation of the following competences: the diagnostic features of parasitic diseases and interpretation of the results, the study of zoonotic parasitosis and method s deal with them.
6. Course author	Department of Veterinary Medicine
7 Basic literature	1 Kadyrov N.T. Parasitology and invasive animal diseases. Astana 2000. P.58-59 2. Akbaev M.Sh. Parasitology and invasive diseases of animals. M .: Kolos, 2012 , pp. 32-34 3 Latypov, M.D. Kornishina. - SPb .: Doe, 2013 .-- 304 s. - ELS "Doe". 6.2. additional literature 4. Akbaev M.Sh. Parasitology and invasive animal diseases. Textbook. The second fix. ed. M .: Kolos 2006 g . S 28-35 5. Ibraev B.K., Bauer K., Leader L.A. Diagnosis of invasive diseases. Almaty Bastau 2017 g of . S 47-51

8. The content of the discipline

Introduction A brief history of the development of parasitology, the role of domestic scientists. Goals and objectives of veterinary parasitology Ecological concept of parasitism. Spatial relation of parasites to hosts. The urgency of the problem of vector-borne diseases. Prevention of natural focal diseases. The content and scope of veterinary parasitology. Classification of parasites and parasitism. General veterinary helminthology. Parasitic flatworms. Life cycles. Distribution, meaning. Helminthological diagnosis.

1. Basic information about the discipline:	
Name of the discipline	**Parasitology and invasive animal diseases 2**
2. The number of loans	**four**
3. Prerequisites:	Zoology of invertebrates and vertebrates, clinical diagnostics, pathological physiology (section: invasive diseases), veterinary pharmacology , parasitology and invasive diseases of animals 2 .
4. Post requisites:	Forensic veterinary examination, epizootology and infectious diseases, non-communicable internal diseases, organization of veterinary affairs, veterinary sanitary examination
5. Competencies:	The process of studying the discipline is aimed at the formation of the following competences: the diagnostic features of parasitic diseases and interpretation of the results, the study of zoonotic parasitosis and method s deal with them.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 Kadyrov N.T. Parasitology and invasive animal diseases., Astana 2000. C58-59 2. Akbaev M.Sh. Parasitology and invasive animal diseases. M .: Kolos, 2012 , pp. 32-34 3 Latypov, M.D. Kornishina. - SPb .: Doe, 2013 .-- 304 s. - ELS "Doe". 6.2. additional literature 4. Akbaev M.Sh. Parasitology and invasive animal diseases. Textbook. The second fix. ed. M .: Kolos 2006 g . S 28-35 5. Ibraev B.K., Bauer K., Leader L.A. Diagnosis of invasive diseases. Almaty Bastau 2017 g of . S 47-51
8. The content of the discipline Private helminthology . Anoplocephalatozy, teniosis. Echinococcosis. Nematodoses: ascaridatoses, strongilatoses of animals and birds. Zoonotic helminthiases. Trematodoses : fascia lidoses, dicroceliidoses and schistostomatoses . Veterinary acarology. Brief description of the structure and biology of arachnids. The taxonomy of ticks. Parasitiform tick-ectoparasites and carriers of pathogens. Psoroptosis Ixodid ticks. A brief description of the structure and biology, systematics, geographical distribution, control measures. Argazide ticks.	

1. Basic information about the discipline:	
Name of the discipline	**Parasitology and invasive animal diseases 3**
2. The number of loans	**3**
3. Prerequisites:	Zoology of invertebrates and vertebrates, clinical diagnostics, pathological physiology (section: invasive diseases), veterinary pharmacology, Parasitology and invasive animal diseases 3 .
4. Post requisites:	Forensic veterinary examination, epizootology and infectious diseases, non-communicable internal diseases, organization of veterinary affairs, veterinary sanitary examination
5. Competencies:	The process of studying the discipline is aimed at the formation of the following competences: the diagnostic features of parasitic diseases and interpretation of the results, the study of zoonotic parasitosis and method s deal with them.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 Kadyrov N.T. Parasitology and invasive animal diseases., Astana 2000. C58-59 2. Akbaev M.Sh. Parasitology and invasive animal diseases. M .: Kolos, 2012 , pp. 32-34 3 Latypov, M.D. Kornishina. - SPb .: Doe, 2013 .-- 304 s. - ELS "Doe". 6.2. additional literature 4. Akbaev M.Sh. Parasitology and invasive animal diseases. Textbook. The second fix. ed. M .: Kolos 2006 g . S 28-35 5. Ibraev B.K., Bauer K., Leader L.A. Diagnosis of invasive diseases. Almaty Bastau 2017 g of . S 47-51
8. The content of the discipline Veterinary protozoology. Life cycles of protozoa development. Emergent protozoa of the present. Pyroplasmidoses of farm animals. Theileriosis of cattle. Emeriosis animals and birds. Cryptosporidioses. Sarcocystoses. Toxoplasmosis of carnivores and humans. Trypanosomiasis animals. Veterinary Entomology. Brief description of the structure and biology of insects. Systematics of insects. Cattle hypodermatosis. Horse asthma. Estrosis of sheep. Rhinestrosis of horses. Bestial flies. Wolfartiosis. Gnus.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary epidemiology 1**
2. The number of loans	Four
3. Prerequisites:	Animal anatomy, animal physiology and biochemistry, veterinary microbiology, veterinary virology, veterinary hygiene, veterinary pharmacology and toxicology, clinical diagnosis, pathomorphology .
4. Post requisites:	Exotic infectious diseases of animals, prevention and control measures against zooanthroponic diseases, especially dangerous infectious diseases of animals and birds
5. Competencies:	To be competent when conducting anti - epizootic measures of especially dangerous infectious diseases of animals. Own a scientific methodology, the use of modern software products, processing results ; apply the acquired knowledge in their professional activities.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Urban V.P. Workshop on Epizootology and Infectious Diseases with Veterinary Sanitation. M., Kolos, 2004. From 58-63 2. Veterinary legislation of the Republic of Kazakhstan. Astana, 2004-2005. T. 1,2,3 . 3. Ibragimov P . M. , Ibraev B.K., Askarov K.A. Epizootic process and epizootological study. Uch. allowance. Astana, 2006 .-- 88 p. 4. Ivanov N.P. Diagnosis of infectious diseases of animals. Textbook, Almaty, 2009 25-33 5. Abdrakhmanov SK, Maykanov BS, Yakubovsky T., Beisembaev K.A., Mukhanbetkaliev E.E. Epizootology and infectious diseases with the basics of veterinary sanitation. The textbook in 2 volumes. Astana: KazATU im. S.Seifullina. 2014 - 677 p .
8. The content of the discipline Introduction to Epizootology. The subject and tasks of epizootology. The role of domestic scientists in the development of epizootology. Methods of epizootology. Infection, its types and their epizootological significance. Infectious disease. The doctrine of the epizootic process. Theory of the epizootic process. Epizootic chain and its obligatory links. Epizootological aspects of reactivity, resistance, immunity. Antiepizootic measures. General and special events.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary epidemiology 2**
2. The number of loans	3
3. Prerequisites:	Animal anatomy, animal physiology and biochemistry, veterinary microbiology, veterinary virology, veterinary hygiene, veterinary pharmacology and toxicology, clinical diagnosis, pathomorphology .
4. Post requisites:	Exotic infectious diseases of animals, prevention and control measures against zooanthroponic diseases, especially dangerous infectious diseases of animals and birds
5. Competencies:	To be competent when conducting anti - epizootic measures of especially dangerous infectious diseases of animals. Own a scientific methodology, the use of modern software products, processing results ; apply the acquired knowledge in their professional activities.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Urban V.P. Workshop on Epizootology and Infectious Diseases with Veterinary Sanitation. M., Kolos, 2004. From 58-63 2. Veterinary legislation of the Republic of Kazakhstan. Astana, 2004-2005. T. 1,2,3 . 3. Ibragimov P . M. , Ibraev B.K., Askarov K.A. Epizootic process and epizootological study. Uch. allowance. Astana, 2006 .-- 88 p. 4. Ivanov N.P. Diagnosis of infectious diseases of animals. Textbook, Almaty, 2009 25-33 5. Abdrakhmanov SK, Maykanov BS, Yakubovsky T., Beisembaev K.A., Mukhanbetkaliev E.E. Epizootology and infectious diseases with the basics of veterinary sanitation. The textbook in 2 volumes. Astana: KazATU im. S.Seifullina. 2014 -677 p .
8. The content of the discipline Private epizootology. The scheme for the study of infectious diseases. Diseases common to different species of animals. Anthrax. Tuberculosis. Paratuberculosis. Brucellosis. Foot and mouth disease . Rabies. Aujeszky's disease. Leptospirosis. Listeriosis. Pasteurellosis. Chlamydia Colibacillosis. Salmonellosis. Streptococcal infection. Campylobacteriosis. Clostridiosis.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary epidemiology 3**
2. The number of loans	3
3. Prerequisites:	Animal anatomy, animal physiology and biochemistry, veterinary microbiology, veterinary virology, veterinary hygiene, veterinary pharmacology and toxicology, clinical diagnosis, pathomorphology .
4. Post requisites:	Exotic infectious diseases of animals, prevention and control measures against zooanthroponic diseases, especially dangerous infectious diseases of animals and birds
5. Competencies:	To be competent when conducting anti - epizootic measures of especially dangerous infectious diseases of animals. Own a scientific methodology, the use of modern software products, processing results ; apply the acquired knowledge in their professional activities.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Urban V.P. Workshop on Epizootology and Infectious Diseases with Veterinary Sanitation. M., Kolos, 2004. From 58-63 2. Veterinary legislation of the Republic of Kazakhstan. Astana, 2004-2005. T. 1,2,3 . 3. Ibragimov P . M. , Ibraev B.K., Askarov K.A. Epizootic process and epizootological study. Uch. allowance. Astana, 2006 .-- 88 p. 4. Ivanov N.P. Diagnosis of infectious diseases of animals. Textbook, Almaty, 2009 25-33 5. Abdrakhmanov SK, Maykanov BS, Yakubovsky T., Beisembaev K.A., Mukhanbetkaliev E.E. Epizootology and infectious diseases with the basics of veterinary sanitation. The textbook in 2 volumes. Astana: KazATU im. S.Seifullina. 2014 - 677 p .
8. The content of the discipline Private epizootology. Erysipelas of pigs. African and classic swine fever. Pig viral gastroenteritis. Parainfluenza -3 . Infectious rhinotracheitis in cattle. Leukemia in cattle. Emphysematous carbuncle. Newcastle disease. Flu bird . Bovine spongiform encephalopathy. Sap and wash horses . Rhinopneumonia of horses. INAN, IEM horses. Myxomatosis of rabbits . Infectious diseases of bees , fish .	

1. Basic information about the discipline:	
Name of the discipline	**Internship**
2. The number of loans	**Twenty**
3. Prerequisites:	Veterinary epidemiology , parasitology and invasive diseases, management in veterinary medicine, veterinary sanitary examination of animal products , internal diseases of animals, veterinary surgery, pathomorphology , veterinary obstetrics and gynecology, veterinary pharmacology and toxicology, veterinary hygiene and sanitation
4. Post requisites:	Disciplines of specialization, final certification
5. Competencies:	The purpose of production practice is to consolidate key competencies, the acquisition of practical skills and experience of professional activities of the specialty. The bases of production practice are business entities of various forms of ownership, organizations corresponding to the profile of the specialty being trained, as well as veterinary organizations, private veterinary clinics.
6. Course author	Department of Veterinary Medicine
7. Basic literature	The program of practices (production) for the specialty "Veterinary medicine"
8. The content of the discipline Acquaintance with production activities, with plans for veterinary measures, as well as with veterinary documentation available at the farm. Assessment of the state of the economy for diseases of infectious and non-communicable etiology. The development of diagnostic, therapeutic and preventive measures carried out on farms.	

1. Basic information about the discipline:	
Name of the discipline	**Undergraduate practice**
2. The number of loans	One
3. Prerequisites:	Veterinary epidemiology , parasitology and invasive diseases, management in veterinary medicine, veterinary sanitary examination, internal animal diseases, veterinary surgery, pathological anatomy, veterinary obstetrics and gynecology, veterinary pharmacology and toxicology, veterinary hygiene and sanitation
4. Post requisites:	Field trip, writing and defense of the thesis. and further studies in the magistracy.
5. Competencies:	Students in the process of undergraduate practice must master the methods of scientific and experimental research in the chosen direction directly in business entities.
6. Course author	Department of Veterinary Medicine
7. Basic literature	Guidelines for the implementation of theses
8. The content of the discipline Carrying out the experimental part of the experience in the conditions of farms, collecting information in the direction of the thesis, analysis of the results, preliminary protection and writing of the thesis.	

Appendix 4 Description of Disciplines of the Optional Component

1. Basic information about the discipline:	
Name of the discipline	**English for special purposes 1**
2. The number of loans	**2**
3. Prerequisites:	"Foreign language" in undergraduate level B1-B2
4. Post requisites:	Disciplines in a foreign language
5. Competencies:	According to the results of mastering the program , depending on the level of training, the student at the time of completion of the course reaches the level of B1 - (IELTS 4.0-5.0) or B2 - (IELTS 5.5-6.0) and the formed skills for solving tasks of professional, interpersonal and intercultural interaction.
6. Course author	Department of Foreign Languages
7. Basic literature	1. John Flowerdew, Tracey Costley (07 Oct 2016). Discipline-Specific Writing: Theory into practice. Taylor & Francis Ltd. 2 . Edward de Chazal & John Hughes (2017) *Oxford EAP . A Course in English for Academic Purposes.* Oxford University Press. 3 . Laurence Anthony (May 18, 2018) Introducing English for Specific Purposes (Routledge Introductions to English for Specific Purposes) 1st Edition. Routeledge 4. by Jackie Stavros, Cheri Torres, David L. Cooperrider (22 May 2018). Conversations Worth Having: Using Appreciative Inquiry to Fuel Productive and Meaningful Engagement. Berrett-Koehler Publishers 5. Nadežda Stojković (July 2018) Positioning English for Specific Purposes in an English Language Teaching Context. Vernon Series in Education
8. The content of the discipline Create a su- vocabulary ny reserve in the amount of 700 - 800 words ; with formirova be skill I have to write an essay of 250-500 words ; a statement of the text read using special terminology ; listening authentic e message I containing professional information in the field of veterinary medicine, anatomy, morphology, physiology, hygiene and well-being of farm animals.	

1. Basic information about the discipline:	
Name of the discipline	**English for special purposes 2**
2. The number of loans	**2**
3. Prerequisites:	"Foreign language" in undergraduate level B1-B2 , English for special purposes 1
4. Post requisites:	Disciplines in a foreign language
5. Competencies:	According to the results of mastering the program , depending on the level of training, the student at the time of completion of the course reaches the level of B1 - (IELTS 4.0-5.0) or B2 - (IELTS 5.5-6.0) and the formed skills for solving tasks of professional, interpersonal and intercultural interaction.
6. Course author	Department of Foreign Languages
7. Basic literature	1. John Flowerdew, Tracey Costley (07 Oct 2016). Discipline-Specific Writing: Theory into practice. Taylor & Francis Ltd. 2. Edward de Chazal & John Hughes (2017) *Oxford EAP . A Course in English for Academic Purposes.* Oxford University Press. 3. Laurence Anthony (May 18, 2018) Introducing English for Specific Purposes (Routledge Introductions to English for Specific Purposes) 1st Edition. Routeledge 4. by Jackie Stavros, Cheri Torres, David L. Cooperrider (22 May 2018). Conversations Worth Having: Using Appreciative Inquiry to Fuel Productive and Meaningful Engagement. Berrett-Koehler Publishers 5. Nadežda Stojković (July 2018) Positioning English for Specific Purposes in an English Language Teaching Context. Vernon Series in Education
8. The content of the discipline Create a su- vocabulary ny reserve in the amount of 800 - 10 00 words ; with formirova five skill I write essay of 250-500 words, exposure of read text using a special terminology ; listening authentic e message I containing professional information in the field of maintenance and breeding, diagnostics and therapy of internal non-contagious animal diseases, veterinary pharmacology and toxicology .	

1. Basic information about the discipline:	
Name of the discipline	**English for special purposes 3**
2. The number of loans	**2**
3. Prerequisites:	"Foreign language" in undergraduate level B1-B2 , English for special purposes 2
4. Post requisites:	Disciplines in a foreign language
5. Competencies:	According to the results of mastering the program , depending on the level of training, the student at the time of completion of the course reaches the level of B1 - (IELTS 4.0-5.0) or B2 - (IELTS 5.5-6.0) and the formed skills for solving tasks of professional, interpersonal and intercultural interaction.
6. Course author	Department of Foreign Languages
7. Basic literature	1. John Flowerdew, Tracey Costley (07 Oct 2016). Discipline-Specific Writing: Theory into practice. Taylor & Francis Ltd. 2. Edward de Chazal & John Hughes (2017) *Oxford EAP . A Course in English for Academic Purposes.* Oxford University Press. 3. Laurence Anthony (May 18, 2018) Introducing English for Specific Purposes (Routledge Introductions to English for Specific Purposes) 1st Edition. Routeledge 4. by Jackie Stavros, Cheri Torres, David L. Cooperrider (22 May 2018). Conversations Worth Having: Using Appreciative Inquiry to Fuel Productive and Meaningful Engagement. Berrett-Koehler Publishers 5. Nadežda Stojković (July 2018) Positioning English for Specific Purposes in an English Language Teaching Context. Vernon Series in Education
8. The content of the discipline Create a vocabulary in the amount of 1 000- 12 00 words ; with forming five skills to write essay of 250-500 words, exposure of read text using a special terminology ; listening authentic e message I containing professional information in the field of biotechnology of animal reproduction, veterinary obstetrics and gynecology, veterinary surgery, epidemiology, infectious and parasitic diseases of animals .	

1. Basic information about the discipline:	
Name of the discipline	**Professionally-oriented English**
2. The number of loans	**6**
3. Prerequisites:	"Foreign language" in undergraduate level B1-B2
4. Post requisites:	Disciplines in a foreign language
5. Competencies:	*Have an idea* of the rules of speech behavior in accordance with situations of professional communication, depending on the style and nature of communication in the social and academic and academic fields; *To know* and understand oral and written speech within the framework of professional topics (lectures, seminars, speeches, conversations); participate in the discussion of topics related to the specialty; independently prepare and make oral reports on professional topics, including using multimedia technologies; *To be able* to extract the necessary information from English-language sources created in various sign systems in typical situations of professional and business communication; annotate, abstract and present in the native language / from the native language the main content of texts in the specialty . *To acquire practical skills:* write messages, articles, reports, annotations, abstracts, essays on professional topics; recognize and use in oral and written statements the main terminology of their specialty, independently deepen knowledge and improve skills acquired at the university for further professional activities. *Be competent* in the implementation of the communicative intent of proficiency in a professional language; reading and understanding authentic literature for special purposes.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. John Flowerdew, Tracey Costley (07 Oct 2016). Discipline-Specific Writing: Theory into practice. Taylor & Francis Ltd. 2 . Edward de Chazal & John Hughes (2017) *Oxford EAP . A Course in English for Academic Purposes.* Oxford University Press. 3 . Laurence Anthony (May 18, 2018) Introducing English for Specific Purposes (Routledge Introductions to English for Specific Purposes) 1st Edition. Routeledge 4. by Jackie Stavros, Cheri Torres, David L. Cooperrider (22 May 2018). Conversations Worth Having: Using Appreciative Inquiry to Fuel Productive and Meaningful Engagement. Berrett-Koehler Publishers 5. Nadežda Stojković (July 2018) Positioning English for Specific Purposes in an English Language Teaching Context. Vernon Series in Education
8. The content of the discipline International contacts and their role in the life of a modern specialist. Business correspondence. Veterinary terminology - features of the formation of terms in a professional foreign language. Work with texts in the specialty (reading, translation): Names of terms in a professionally-oriented foreign language used in the description of non-infectious animals found in infectious and invasive animal diseases. used for the diagnosis and treatment of animal diseases. found in surgical	

diseases of animals.

1. Basic information about the discipline:	
Name of the discipline	**Histology with the basics of cytology**
2. The number of loans	**5**
3. Prerequisites:	General biology
4. Post requisites:	Animal morphology, animal physiology
5. Competencies:	*Know:* cell theory, the structure of prokaryotic and eukaryotic cells and their organelles; basic aspects of cell activity, cell division and differentiation, cell response to external influences, apoptosis and necrosis; classification of tissues of animal organisms, especially their development, structure and functioning, morphological foundations of reactivity, adaptation and regeneration of organs and tissues. *To be able to:* compare data on the ultra-fine organization of cells with the functions performed, navigate by ultrastructure in the degree of differentiation of cells and the stages of the cell cycle; distinguish between the main types and varieties of tissue systems, compare the structure of the tissue with the functional load; to compare individual organs and systems according to morphological and functional features. To be able to use educational and scientific literature, the Internet to expand their knowledge of the subject. To be able to apply the knowledge gained during the study of the discipline for veterinary practice. *Own the* methods of microscopic study of cells, tissues and organ systems. *To acquire practical skills of* working with cyto- and histopreparations using the basic methods of microscopy, as well as skills in the analysis of histological preparations and electronic microphotographs.
6. Course author	Department of General Biological Sciences
7. Basic literature	1 . Ulumbekov E.G., Chelyshev Yu.A. Histology. M. GEOTR-MED 2001 city of 2. Histology: a textbook in 5 volumes / Ham A., Kormak D.– M. 2004 year 3. Chentsov Yu.S. Introduction to cell biologiyu.M., 2005 city of , 496 pp. 4. Afanasyev P.A. Histology. embryology, cytology. Moscow - 2012, 800 p.
8. The content of the discipline Cell theory, structure of prokaryotic and eukaryotic cells and their organelles; basic aspects of cell activity, cell division and differentiation, cell response to external influences, apoptosis and necrosis; classification of tissues of animal organisms, especially their development, structure and functioning, morphological foundations of reactivity, adaptation and regeneration of organs and tissues.	

1. Basic information about the discipline:	
Name of the discipline	**Private histology and animal embryology**
2. The number of loans	**5**
3. Prerequisites:	Zoology, histology with the basics of cytology
4. Post requisites:	Animal physiology
5. Competencies:	*Know: the* detailed histological structure of all organs, their embryonic development, regeneration capabilities, functions performed by the organ, ultrastructure of all cellular types that provide the specific function of the organ; about the features of spermatogenesis and oogenesis, physiology and morphology of gametes; about the basic laws of embryonic development itself; about the biological essence of fertilization and crushing, gastrulation, neurulation; structure and functions of provisional organs; about the features of differentiation and organogenesis in vertebrates. *To be able to* **:** identify the tissue components of the organ, individual cell types, compare data on the histostructure with the functions performed by the organ, as well as its embryogenesis; describe microscopic preparations. *Own* : skills in working with histopathological preparations using the basic methods of microscopy, navigate and determine the stages of embryonic development from microphotographs; own basic research methods in histology and embryology with the possibility of further application of this knowledge in the field of veterinary medicine and biotechnology .
6. Course author	Department of General Biological Sciences
7. Basic literature	1 . Ulumbekov E.G., Chelyshev Yu.A. Histology. M. GEOTR-MED 2001 city of 2 .Chentsov Yu.S. Introduction to cell biology. Moscow, 2005 city of , 496 pp. 3 . Nurtazin S.T., Vsevolodov E.B. Biology of individual development. - Almaty Қazaқuniversiteti 2005 g . -262 p. 4. Afanasyev P.A. Histology. embryology, cytology. Moscow - 2012, 800 p.
8. The content of the discipline General patterns of the histological structure of individual animal organs, ultrastructure of cells and tissues, providing a specific function of the organ. The main directions of modern cytology and histology, as well as the importance of these sciences for veterinary practice and biotechnology.	

1. Basic information about the discipline:	
Name of the discipline	**Zoology**
2. The number of loans	**5**
3. Prerequisites:	General biology
4. Post requisites:	Animal morphology, animal physiology and biochemistry , genetics, histology with the basics of cytology, internal non-infectious diseases of dogs and cats, parasitology and invasive animal diseases, veterinary sanitary examination of animal products, ichthyology , hydrobiology, animal husbandry, beekeeping, the basis of animal husbandry, livestock production technology .
5. Competencies:	*To know the* basic levels of organization of animals, to make an idea of the importance of all stages of the individual development of animals, the reasons for the diversity of the animal world and the basic laws of its formation, modern views on the laws of development of the organic world; *At the Met* to use the data to solve scientific and practical problems; *In isolate the* biological characteristics of the species, evaluate the role of different groups of animals in the evolution of the plant and animal world of the Earth; *They determine the* external and internal structure of animals, their species diversity, development, classification of animals, distribution, origin, their relationship with the environment, their importance in nature and for humans. *In ladet* skill s analysis of causality in the relationship between animals and in nature: the ability to work with determinants, formulation of scientific questions, and conducting research.
6. Course author	Department of General Biological Sciences
7. Basic literature	1 . Olzhabekova K.B. Zoology of vertebrates. Almaty.CH 1.2. 2000 g . -450 c . 2 . Sharova I.Kh. Zoology of invertebrates. Vlados. Moscow, 2003 g . 591- c . 3 . Akhmetbekov N.A. UMKD on discipline Zoology of vertebrates, Astana, KATU named after S.Seifullin. 2010 g of . 70- c 4 . Akhmetbekov N.A. Practice on zoology . Astana, KATU named after S.Seifullin. 2012 g . 229- c . 5. Akhmetbekov N.A., Akimbekova A.F., Ibraeva A.B. guidelines for conducting educational practice for first-year students of the faculty of Veterinary Medicine and animal husbandry technology in the discipline of Zoology. Astana KazATU named after S.Seifullin. 2015 g of . - 38 p.
8. Content discipline Multicellular animals . G sponges, lamellar, streaking, worms . Coelomic animals: mollusks, crustaceans . Coelomic animals . H azemnye Arthropoda, Echinodermata, gemihordovye . Type Chordates. Class amphibians . Bird class . Class mammals	

1. Basic information about the discipline:	
Name of the discipline	**Zoogeography**
2. The number of loans	**5**
3. Prerequisites:	School Education in Biology and Geography
4. Post requisites:	Paleontology, theriology , phytogeography
5. Competencies:	Present distribution of animals on the planet; reasons for the differences between the faunas of different parts of the globe; To identify the patterns that govern or regulated in the past the resettlement of animals from their centers of origin; fauna changes in future to prevent the depletion of species composition or the last shift into an undesirable person for the side. Skills of research work with determinants and formulation of scientific questions.
6. Course author	Department of General Biological Sciences
7. Basic literature	1. Abdurakhmanov G.M. Fundamentals of Zoology and Zoogeography: A Study Guide for Stud. ped Universities . M: Academy. 2001 g of . - 496 p. 2. Matekin P.V. Fundamentals of Zoology: Study Guide for Stud. Universities . M: KDU. 2007 g . - 294 p. 3. Akhmetbekov N.A. Workshop on Zoology. Astana KATU named after S.Seifullin. 2012 - 229 p **.**
8. The content of the discipline This is a science that studies the patterns of distribution of various animals on Earth. The spread of animals. Systematics. The origin of various species of animals. Ecology of animals.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary genetics with the basics of biostatistics**
2. The number of loans	**5**
3. Prerequisites:	Histology, morphology, computer science, mathematics, microbiology, bioorganic chemistry and organic chemistry , physiology
4. Post requisites:	Fundamentals of animal husbandry and feeding of agricultural animals, pathology, obstetrics and gynecology, pet hygiene
5. Competencies:	*To know the* structure, structure, function and patterns of inheritance of chromosomes, genes and genome, changes in signs of living organisms, methods of genetic engineering; *To be able to:* use the acquired knowledge in the genetics and breeding of farm animals to improve existing and breed new highly productive breeds, analyze the types of gene abnormalities and chromosomal diseases, types of genetic variation. *Have the skills* to claim rovedeniya biometric veterinary treatment of primary materials or experimental results. Have the skills of individual work and group work. Be able to work with literature *Own:* methods of genetics research with bio statistics to determine the degree of genetic similarity and diversity of domestic and wild animals, to conduct biometric processing of primary zootechnical materials and experimental results, scientific and production experiments.
6. Course author	Department of General Biological Sciences
7. Basic literature	1 . Stambekov S.Zh., Korotkevich O.S., Petukhov V.L., “Genetics”. 2008. 2. General and molecular genetics I.F. Zhimulev, Novosibirsk 2008 3 . Imbay S., Umiralieva N. Workshop on genetics. Astana, S.Seifullin KATU, 2009. -199 p. 4 . D.Peter Snustag, Michael J.Simmons. Genetics of Principles, fifth edition, International student version, 2010.
8. The content of the discipline About dream's modern genetics. Heredity and variation. Genetics methods. Cytological and Molecular foundations genetic analysis. Mutation, hybridization. Modern bio statistics. Statistics’ processing of experimental data and a comparative study of the observation results using computer technology .	

1. Basic information about the discipline:	
Name of the discipline	**Genetics with the basics of animal breeding**
2. The number of loans	**5**
3. Prerequisites:	inorganic and analytical chemistry, organic and biological chemistry, anatomy, cytology, histology and embryology, physiology
4. Post requisites:	Animal breeding, breeding, pathophysiology
5. Competencies	***To know:*** basic theory of selection in our country and abroad; breed formation process, assessment of animals by phenotype and genotype; the theory of selection and selection in animal husbandry; organization of breeding and breeding work with the breed, lines and families; The theory of assessing producers according to the quality of offspring. *To be able:* methods for assessing breeding and genetic progress; accounting and control over genetic changes in the breed; new theories of productivity assessment, selection and selection; theory of optimization of the selection process and the creation of selection programs. *To be competent to:* determine the selection and genetic changes in the herd of animals, draw up a selection and selection plan; calculate the selection and genetic parameters on a computer; make the genealogical structure of the herd; determine the breed of cross-breeding animals; to model breeding and genetic progress be able to independently search for literature and learn new research methods, form and solve problems in production activities,
6. Course author	Department of General Biological Sciences
7. Basic literature	1. Imbay S.M. “Immunological and population genetics”, Astana, 2003. 2 . Stambekov S.Zh., Korotkevich O.S., Petukhov V.L., “Genetics”. N. 2008 g . 3 . General and molecular genetics I.F. Zhimulev, Novosibirsk 2008 city of 4. S. Imbay, N. Umiralieva, Workshop on genetics. Astana, KATU named after S.Seifullin, g 2009 . -199 s. 5. Principles of Genetics, D. Peter Snustag, Michael J. Simmons, fifth edition, International student version, 2010 . 6 . Cell biology and Genetics Biology. The Unity and Diversity of Life Cecie Starr , Enternational Edition, 2013 city of

8. The content of the discipline

Genetics with the fundamentals of animal breeding is the science of the genetic foundations for the improvement and breeding of farm animal breeds, based on the achievements of genetics, biotechnology and biometrics, and includes the study of inbreeding and inbred depression, the effect of heterosis, the assessment of genotype and phenotype, variability, correlation, heritability, regression of the main breeding traits, evaluating the effect of heterosis, selection and selection of parental breeding pairs by quantitative and qualitative traits, is studying the latest scientific methods of village animals, allowing to obtain highly productive animals, to carry out the prophylaxis of genetic diseases, to increase their adaptive ability to external factors, to predict and evaluate breeding achievements.

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Radiobiology**
2. The number of loans	**5**
3. Prerequisites:	To master the course “Veterinary Radiobiology” of the discipline, knowledge and skills are needed, skills acquired in the study of physics, chemistry, biology, physiology, etc.
4. Post requisites:	The development of the “Veterinary Radiobiology” course further contributes to the successful development of specialized disciplines: veterinary and sanitary expertise and radiobiology, veterinary and sanitary safety of livestock products.
5. Competencies:	The student must demonstrate knowledge and understanding in the field of veterinary radiobiology , apply knowledge at a professional level; be able to apply knowledge and solve problems in the field of veterinary radiobiology , express their opinions and be able to interpret information to make judgments, taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Belov A.D., Kosenko A.S., Pak V.V. and others. "Workshop on Veterinary Radiobiology" - M .: Agropromizdat, 2000 2. Kirshin V.A., Kirikbaev S.K. and others. "Radiobiological effects in animals" - M., 2000 3 . Vokken G.G. "Veterinary Radiobiology" - M .: Ear, 2001 g of . 4.Plyuschikov VG Semenov OG **.** Teaching aid for the course "Agricultural Radioecology", part III "Measures to reduce the content of radionuclides in agricultural products." M .: Publishing house RUDN.- 2006 g .- 64c. 5. Lysenko N.P., Pak V.V. "Radiobiology", SP "Doe", 2012
8. The content of the discipline Fundamentals of radioecology and radiotoxicology. The biological effect of ionizing radiation. Radiation sickness and its forms. Radiometric and radiochemical examination of objects of veterinary supervision. Regulations on the radiological department of the veterinary laboratory. Documentation for veterinary radiation examination. Fundamentals of radiation safety and organization of work with radioactive substances. The technological process of primary processing of animals exposed to external radiation .	

1. Basic information about the discipline:	
Name of the discipline	**Animal radiation safety**
2. The number of loans	**5**
3. Prerequisites:	To master the course "Radiation safety of animals" of the discipline, knowledge and skills are needed, skills acquired in the study of physics, chemistry, biology, physiology, etc.
4. Post requisites:	The development of the course "Radiation safety of animals" in the future contribute to the successful development of relevant disciplines of veterinary-sanitary examination and Radiobiology, veterinary and sanitary safety of animal products.
5. Competencies:	The student must demonstrate knowledge and understanding in the field of radiation safety, and apply knowledge at a professional level; be able to apply knowledge and solve problems in the field of veterinary radiobiology , express their opinions and be able to interpret information to make judgments, taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 . Belov A.D., Kosenko A.S., Pak V.V. et al "Workshop on veterinary Radiobiology" -. M .: Agropromizdat, 2000 g of . 2. Kirshin V.A., Kirikbaev S.K. and others. "Radiobiological effects in animals" - M., 2000 3. Plyuschikov VG Semenov OG **.** Teaching aid for the course "Agricultural Radioecology", part III "Measures to reduce the content of radionuclides in agricultural products." M .: Publishing house RUDN.- 2006 g .- 64c. 4. Lysenko N.P., Pak V.V. "Radiobiology", SP "Doe", 2012
8. The content of the discipline Dosimetry and radiometry of ionizing radiation. Fundamentals of radioecology and radiotoxicology and its tasks. General patterns of movement of radionuclides in the biosphere. Regularities of the metabolism of radionuclides in the body of animals. Technologies for processing livestock products. The biological effect of ionizing radiation. Radiometric and radiochemical examination of objects of veterinary supervision. Fundamentals of radiation safety and organization of work with radioactive substances. The device, equipment and organization of work of veterinary services. The technological process of primary processing of animals exposed to external radiation.	

1. Basic information about the discipline:	
Name of the discipline	**Feeding animals**
2. The number of loans	**5**
3. Prerequisites:	Morphology, organic chemistry, physiology and biochemistry of farm animals, microbiology, feed production.
4. Post requisites:	The course program is implemented when giving lectures, conducting laboratory classes, self-study. Students acquire practical skills in feeding farm animals during the training and production practice and the implementation of the graduation project (work).
5. Competencies:	Future veterinarians develop compotences for : - taking medium samples and analyzing the chemical composition and nutrition of the feed; - determination of digestibility and productive action of feed; - classification of feed and feed additives; - the organization of normalized feeding of livestock, aimed at maintaining health and ensuring productivity.
6. Course author	Department of Livestock Production Technology
7. Basic literature	Marshal H. Jurgens 1. and KristjanBregendahl, AnimalFeeding and Nutrition, 2007 g of . 2 . Pestis V.K. et al. Feeding of farm animals. Publisher: Minsk IVTs Minfina 2009 g . 3. Guidelines for zootechnical analysis of feed, Astana, 2010 4. Omarkkozhauly N., Abdrakhmanov S., Sarkhanov K., Shurkin A. Feeding and quality control of feeding. Astana, 2015 5.Omarkozhauly N., Shurkin A.I., Omarova K.M. Assessment of nutritional value and quality of feed. Astana, 2018
8. The content of the discipline The beginning and role of feeding in increasing the production of livestock products, the relationship with other disciplines. Contribution of outstanding scientists to the development of science and practice of animal feeding. Nutritional assessment of feed. Stern. Zootechnical analysis. Normalized feeding of animals.	

1. Basic information about the discipline:	
Name of the discipline	**Feed and feed additives**
2. The number of loans	**5**
3. Prerequisites:	And natomy, histology, physiology, zoology, biochemistry, genetics
4. Post requisites:	On the organization of veterinary medicine, clinical diagnostics, internal non-communicable diseases, pathology, epizootology
5. Competencies:	*To know* new technologies for keeping and feeding animals, optimal zoohygienic conditions for keeping, feeding and caring for farm animals; *To be able* to define standards of animal nutritional needs and individual feed; keep accounting and reporting documents; determine the daily, monthly, seasonal and annual animal feed requirements; *to use* modern methods of determining the farm animals nutritional needs; *Have the skills* of organoleptic assessment of the benignity of feed and their suitability for feeding animals; methods zootechnical analysis of different kinds of feed, to assess their chemical composition and nutritional value, to be able to claim rovesti preventive work to prevent domestic non-communicable diseases of farm animals.
6. Course author	Department of Livestock Production Technology
7. Basic literature	1. Faritov, T.A. Feed and feed additives for animals. - St. Petersburg: Publ.: Doe, 2010 - 304 p. 2 . Ryadchikov V.G. The basics of nutrition and feeding of agricultural animals . - Spb: Publ .: Lan, 2015. G .- 640. 3 . Omarkozhauly N. [et al.]. Feeding and feeding quality control : reference. textbook. allowance Astana : KazATU named after S. Seifullina, 2015 g of . - 240 s. 4 . Khaziahmetov F.S. Rational feeding of animals. St. Petersburg Univ. .: Lan, 2019 g . - 364 p.
8. The content of the discipline The course program is designed for a teaching volume of 150 hours, of which: 50 hours - for class work and 1 00 hours - for independent work. The course ends with a comprehensive exam. The course is designed for 1 semester . W agotovka, storage of feed and prepare them for feeding; New industry standards for evaluating feed quality; Characterization, norms, methods and results of the use of nitrogenous, mineral supplements, vitamin, enzyme preparations, probiotics, natural sources of mineral and biologically active substances and complex feed additives; The technique of calculating the norms for the inclusion of feed additives in diets and feed mixtures.	

1. Basic information about the discipline:	
Name of the discipline	**Laboratory diagnostics in veterinary medicine**
2. The number of loans	**5**
3. Prerequisites:	M orfologiya animal histology Cytology with bases, zoology, physiology of animals , and analytical chemistry fizkolloidnaya
4. Post requisites:	In eterinarnaya microbiology and virology, pathology of animals, veterinary pharmacology and toxicology, clinical diagnosis of animal internal medicine
5. Competencies:	The process of studying the discipline is aimed at the formation of the following competencies: to master the specifics of the departments of veterinary laboratories , the basic methods of laboratory research in intravital and posthumous diagnosis of various diseases of infectious and non-infectious etiology of animals
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Kondrakhina I.P. Methods of veterinary clinical laboratory diagnostics. Publishing House "Kolos S", 2004 2. Ermakhanov Ә.N. Moldaulov M.A., Қambarbekov A.T., Өtenov A.M. Klinikalyқ әәne қoldanbalydiagnosis. nur-print, Almaty, 2009-425s. 3 . Bulashev A. Taubaev O., J. Suranshi, Myrzabaev K .. Microbiology: Textbook / Astana: Tome of 2014 g -384s.. 4 . Bұlashev A.Қ., Sұranshiev Zh.A., Әkibekov Ө.S. Veterinary medicine; microbiology; female virology. Astana, 2017 g of . 206 b
8. The content of the discipline The discipline studies the history, activities and structure of state veterinary laboratories, modern laboratory research methods for diagnosing diseases of an infectious and non-infectious etiology of animals, safety rules when working in veterinary laboratories; keeping, feeding and fixing laboratory, farm animals. It aims at teaching the interpretation of research data, taking into account the anatomical and physiological characteristics of the animal organism.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary laboratory science**
2. The number of loans	5
3. Prerequisites:	Animal Morphology, histology Cytology with bases, zoology, physiology of animals , and analytical chemistry fizkolloidnaya
4. Post requisites:	In eterinarnaya microbiology and virology, pathology of animals, veterinary pharmacology and toxicology, clinical diagnosis of animal internal medicine
5. Competencies:	The process of studying the discipline is aimed at the formation of the following competencies: to master the specifics of departments of veterinary laboratories , keeping feeding, fixing of laboratory animals
6. Course author	Department of Veterinary Medicine
7. Basic literature	1.Kondrakhina I.P. Methods of veterinary clinical laboratory diagnostics. Publishing House "Kolos S", 2004 2. Ermakhanov Ә.N. Moldaulov M.A., Қambarbekov A.T., Өtenov A.M. Klinikalyk jәne қoldanbaly diagnosis. Nur-print, Almaty, 2009-425s. 3. Bulashev A., Taubaev O., Suranshi J., Myrzabaev K .. Microbiology: Textbook / Astana, 2014 -384p.. 4 . Bulashev A., Suranshi J., Akibekov O.S. Veterinary medicine; microbiology; female virology. Astana, 2017, 206 p.
8. The content of the discipline The discipline studies the history, activities and structure of state veterinary laboratories, safety rules when working in veterinary laboratories; keeping, feeding and fixing laboratory, farm animals.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Orthopedics and Ophthalmology**
2. The number of loans	**5**
3. Prerequisites:	Morphology of animals with Latin veterinary terminology, animal physiology and biochemistry, veterinary microbiology and animal virology, veterinary pharmacology with toxicology, animal pathology.
4. Post requisites:	Veterinary surgery**,** epizootology and infectious diseases, specialization disciplines.
5. Competencies:	The student must **:** Demonstrate knowledge and understanding in the field of orthopedics and ophthalmology, apply knowledge at a professional level; be able to apply knowledge and solve problems, express their opinions and be able to interpret information to make judgments taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Shakalov K.I., Bashkirov B.A., Kalashnik A.I., Avrorov V.N., Ostrovsky N.S., Lebedev A.V., Semenov B.S., "Private veterinary surgery" M ., Agropromizdat, 2000 . 2. Martinec Elisabeth A. Veterinary Science. Student Workbook Cornell University 2003. 3. Lebedev A.V., Chervanev V.A., Troyanovskaya L.P. Veterinary ophthalmology. Tutorial. M., Kolos. 2004. 4. Veremey E.I., Stekolnikov A.A. Clinical surgery in veterinary medicine. Textbook for students of higher educational institutions with a degree in Veterinary Medicine - Minsk. ITC Ministry of Finance, 2010.
8. Contents Anatomic and topographic th structure hooves and hooves of animals. Diseases in the area of the corolla, putillary joint and crumb. Deformed animal hooves. Diseases of the base of the skin of the hoof. Subdermatitis. Horse shoeing, forge device and equipment. Features of the anatomy and physiology of the organs of vision. Diseases of the eyelids, cornea and conjunctiva. Diseases of all layers of the eyeball and lens. Massive eye diseases	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Anesthesiology**
2. The number of loans	**5**
3. Prerequisites:	Morphology of animals with Latin veterinary terminology, animal physiology and biochemistry, veterinary microbiology and animal virology, veterinary pharmacology with toxicology, animal pathology.
4. Post requisites:	The study of the discipline " Veterinary anesthesiology" will deepen knowledge in this area of veterinary medicine
5. Competencies:	The student must **:** Demonstrate knowledge and understanding in the field of anesthesiology, apply knowledge at a professional level; be able to apply knowledge and solve problems in the field of veterinary anesthesiology, express their opinions and be able to interpret information to make judgments taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Magda I.I., Itkin B.Z., Voronin I.I. Surgical surgery with the basics of topographic anatomy. M. Kolos, 2000. 2. Pulniashenko P.R. Anesthesia of dogs and cats M. 2000. 3. Petrakov K.A., Salenko P.T. and others. Surgical surgery with the basics of topographic anatomy. M. Kolos, 2003. 4. Semenov B.S., Lebedev A.V., Private veterinary surgery. Textbook for High Schools - 2nd edition - M., Kolos, 2003. 5. Martinec Elisabeth A. Veterinary Science. Student Workbook Cornell University 2003. 6. Sapozhnikov AF, et al. Local anesthesia and methods of animal procaine therapy. M., 2011.
8. The content of the discipline Physiology of pain and features of pain sensitivity of individual organs and tissues. Theory of Anesthesia Classification and types of anesthesia, methods of drug administration. Premedication. Neuroleptoanalgesia and potentiated analgesia. Preparation of sick animals for anesthesia. Complications of anesthesia and the post-anesthetic period. Modern methods and drugs for pain relief. Anesthesia of ruminants, horses, pigs and small animals. Indications and contraindications for local anesthesia. Preparations for local anesthesia. Types of local anesthesia, the importance of local anesthesia. Complications of local anesthesia and measures to combat them. Local anesthesia for diagnostic purposes. Types of blockades on various parts of the body.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary sanitary examination of crop products , fish farming and beekeeping**
2. The number of creditss	**5**
3. Prerequisites:	In eterinarnaya sanitary examination of livestock products, ICE crop products, necropsy, epizootiology, parasitology.
4. Post requisites:	Knowledge of the theoretical and practical foundations of the discipline "Technology, Hygiene and Veterinary Sanitary Expertise of Meat and Dairy Products" is leading in the formation of a veterinarian, scientific knowledge and practical skills acquired by students will allow them to be applied in production activities.
5. Competencies:	In the process of studying the course, the student *should know* **:** - chemical composition and nutritional value of products; - technology and hygiene of food production; - methods of sanitary control at all stages of production; - rules for the transportation, storage and sale of products; - modern methods of sanitary-hygienic research and sanitary assessment of products; In the process of studying the course, the student should *be able to:* - monitor the sanitary condition of production at meat and dairy enterprises; - carry out quality control of primary and secondary raw materials; - carry out quality control of finished products; - exercise control during transportation, storage and sale; - own modern methods of researching products.
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. B. S. Maykanov et al. Technology, hygiene and veterinary sanitary examination of milk and dairy products: textbook. allowance; M-in science and education Rep. Kazakhstan. - Astana: KazATU named after S. Seifullin, 2008 - 125 p. 2. Pronin, VV, Fisenko S.P. Veterinary and sanitary expertise with the basics of technology and standardization of livestock products. Workshop: textbook. allowance. - 2nd ed., revised. and SPb .: dop.- Lan, 2012 g .- 240. 3. Zh.I. Satayeva, N.Zh. Kazhgaliev, AB Nurtaeva. Commodity research of food products. Textbook, Astana, 2014. - 201p. 4. F . B . Myrzabekov , M . Oh . Tokaev . Technology, hygiene, sanitation and veterinary sanitary examination of meat and dairy products.- Almaty: Aitumar, 2016 - 214 p.
8. The content of the discipline Technology, hygiene and veterinary sanitary examination of meat and dairy products , the basics of technology of traditional types of meat and dairy products, the nature and justification of the technological processes of their production, nutritional value, classifications, basic requirements for the quality of raw materials and finished products. In addition, the basic methods of quality control of meat and milk raw materials and meat and dairy products, including organoleptic, physico-chemical and technological evaluation, are	

described.

1. Basic information about the discipline:	
Name of the discipline	**Technology , sanitation and veterinary sanitary examination of meat on dairy products**
2. The number of credits	**5**
3. Prerequisites:	Veterinary and sanitary examination of livestock products, FEV of crop products, pathology, epizootology, parasitology.
4. Post requisites:	"Technology, hygiene and veterinary sanitary examination of meat and dairy products"
5. Competencies:	*To know:* - chemical composition and nutritional value of products; - technology and hygiene of food production; - modern methods of sanitary-hygienic research and sanitary assessment of products; *To be able* : - monitor the sanitary condition of production at meat and dairy enterprises; - carry out quality control of primary and secondary raw materials; - exercise control during transportation, storage and sale; *To be component* in technological skills and production hygiene m I somolochnyh products and the implementation of quality control.
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1 . N.F. Shuklin. Examination of the soundness and radiation safety of products. Their standardization and certification. In 3 volumes of T. 1. General examination, standardization and certification of products with the basics of technology and hygiene of production, conservation and storage / KazNAU. - Almaty: Credos, 2008. - 435 p.. 2 . N.F. Shuklin. Examination of the soundness and radiation safety of products. Their standardization and certification. In 3 volumes. T.2. Private veterinary and sanitary examination of livestock products. - Almaty: Credos, 2008. - 414 p. 3 . Pronin, V.V., Fisenko S.P. Veterinary and sanitary expertise with the basics of technology and standardization of livestock products. - SPb.: Lan, 2012.- 240 p. 4. J.B. Myrzabekov, M.O. Tokaev. Technology, hygiene, sanitation and veterinary sanitary examination of meat and dairy products: textbook. Allowance.- Almaty: Aitumar, 2016 - 214 p.
8. The content of the discipline The fundamentals of the technology of traditional types of meat and dairy products, the nature and justification of the technological processes of their production, nutritional value, classifications, basic requirements for the quality of raw materials and finished products. Basic methods for quality control of meat and raw milk and meat and milk etc. of ucts, including organoleptic, physical-chemical and technological assessment	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary control at the border and transport**
2. The number of loans	**5**
3. Prerequisites:	Anatomy, physiology, virology, microbiology, veterinary hygiene and sanitation and , veterinary and sanitary th expertise , epizootiology I , parasitology I, the organization of veterinary affairs
4. Post requisites:	Veterinary-sanitary supervision and control s on border and transport
5. Competencies:	*To know:* - structure of the transport veterinary service of the Republic of Kazakhstan; - a list of goods controlled by veterinary control (supervision) in transport; - Veterinary and sanitary requirements and rules for the movement of animals, products and raw materials of animal origin in road, rail, water and air transport; *Have :* - draw up veterinary accompanying documentation; - the procedure for inspecting objects controlled by veterinary control (supervision) in transport during loading, unloading, along the route and transit; - carry out a set of measures to combat infectious and invasive diseases of animals during movements; *Own:* use: basic laws of the Republic of Kazakhstan governing the quality and safety of raw materials and animal products *Be competent in the field of* veterinary and sanitary control when importing and exporting products, raw materials of animal and vegetable origin to preserve the epizootic well-being and biological safety of controlled goods
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Maykanov B.S., Zhumakaev A.N. Veterinary control at the border and transport, a training manual. Astana 2014 city of 2. Zhumakaeva A.N., Begenova A.B. Veterinary and sanitary control at the border and transport, workshop, Astana, 2015 . 3. Begenova A.B., Zhumakaeva A.N. Workshop "Memlekettik Shekar Myung kөliktegi veterinarlyқ bақylau Astana 2018
8. The content of the discipline About RGANIZATION I movements of all modes of transport of animals, products and raw materials of animal origin. M er s for prevention of spread of disease in the following way, performing w veterinary requirements during transportation . On the protection of the state from the introduction of infectious diseases, human health and the environment.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary and sanitary supervision during export-import transportation**
2. The number of loans	**5**
3. Prerequisites:	The course is based on knowledge of the basics of anatomy, physiology, virology, microbiology, veterinary hygiene and sanitation, veterinary and sanitary examination, epizootology, parasitology, organization of veterinary medicine
4. Post requisites:	Theoretical and practical principles of veterinary and sanitary control during the movement of animals, products and raw materials of animal and vegetable origin
5. Competencies:	In the process of studying the course *should know:* the requirements of veterinary rules when importing, exporting, transporting animals for slaughter, when importing beef, pork, horse meat, lamb, poultry, milk and dairy products, fish and other hydrobionts, *Be able to:* ensure veterinary and sanitary well-being and biological safety *Own:* use: basic laws of the Republic of Kazakhstan governing the quality and safety of raw materials and animal products *Be competent in the field of* veterinary and sanitary control when importing and exporting products, raw materials of animal and vegetable origin to preserve the epizootic well-being and biological safety of controlled goods
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Begenova A.B., Zhumakaeva A.N., Mikanov B.S. "Memlekettik shekara men koliktegi veterinarlyқ baқylau". Astana 2014 city of 2.Maykanov B.S., Zhumakaeva A.N. Veterinary control at the border and transport, a training manual. Astana 2014 city of 3.Zhumakaeva A.N., Begenova A.B. . Veterinary and sanitary control on border and transport, workshop, Astana 2015 city of 4.Begenova A.B., Zhumakaeva A.N. Workshop "Memlekettik Shekar Myung kөlikteg iveterinarlyқ baқylau Astana 2018 city of
8. The content of the discipline In the sanitary requirements for the import (export) of products and raw materials of animal and vegetable origin, organoleptic, physico-chemical, toxic-biological quality assessment, processing and disposal of unusable products.	

1. Basic information about the discipline:	
Name of the discipline	**Forensic examination**
2. The number of loans	**5**
3. Prerequisites:	P anatomy, epizootology, parasitology, microbiology, virology, physiology, anatomy, histology, standardization and certification of agricultural products .
4. Post requisites:	Animal health examinations and meat and poultry products
5. Competencies:	*To know:* and Stora forensic veterinary medicine, its relation to forensic medicine, biological and veterinary sciences, the organization of forensic examination; examination and its role in the analysis of the case. Procedural basis of forensic examination. *Be able to:* conduct a forensic examination; order of inspection of corpses; select research objects; draw up an expert opinion; veterinary autopsy and exhumation of corpses *Own* : skills in conducting forensic examination in controversial cases, in civil cases, with intentional falsification, conducting a veterinary autopsy, toxicology and thanatology based on procedural laws
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Maykanov B.S., Adilbekov J.Sh., Baldzhi Yu.A., Inirbaev A.K. Technology, hygiene and veterinary sanitary examination of meat and dairy products. Astana, 2008 2. Baldzhi Yu.A., Mikanov B.S., Zhanabaeva D.K. Guidelines for conducting LHP in the discipline "FEE of livestock products during contamination with foreign substances". Astana, 2009 3. Baldzhi Yu.A., Adilbekov Zh.Sh. Guidelines for conducting LHL on the topic of FEA of poultry products. Astana 2010 4. Seregin I.G., Nikitchenko V.E., Nikitchenko D.V. Veterinary examination of animal and poultry slaughter products. Tutorial. Moscow, 2010 5 . Maykanov B.S., Bulgey Yu.A. Trial of veterinary-sanitary examination, Astana 2013 g . 6 . National and international aspects of food safety in modern conditions, Astana 2017. 7 . Latypov D.G., Zalyalov I.N., Mullakaev O.T. "Judicial veterinary-sanitary examination. Https://www.labirint.ru / books / 610 809 / (DOE), 2017 city of 8 . Seregin I.G., Borovkov M.F., Nikitchenko V.E. Veterinary sanitary examination of food products in food markets. St. Petersburg: LLC "Quadro". ISBN 978-5-906371-61-7. 2018 g of . - 478 p.
8. The content of the discipline Forensic veterinary medicine considers issues of conducting an examination in cases of contention, with intentional falsification, conducting a veterinary autopsy, toxicology and thanatology based on procedural laws.	

1. Basic information about the discipline:	
Name of the discipline	**1. Forensic thanatology**
2. The number of loans	**5**
3. Prerequisites:	Pathological anatomy, epizootology, parasitology, microbiology, virology, physiology, anatomy, histology, standardization and certification of agricultural products
4. Post requisites:	Veterinary sanitary examination of livestock and poultry products
5. Competencies:	*To know:* and Stora forensic veterinary medicine, its relation to forensic medicine, biological and veterinary sciences, the organization of forensic examination; examination and its role in the analysis of the case. Procedural basis of forensic examination. *Be able to:* conduct a forensic examination; order of inspection of corpses; select research objects; draw up an expert opinion; veterinary autopsy and exhumation of corpses *Possess: the* skills of conducting a forensic examination in controversial cases, in civil cases, with intentional falsification, conducting a veterinary autopsy, toxicology and thanatology based on procedural laws .
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Adilbekov J.Sh. Vet-sanitary examination of animal raw materials. Astana 2006, 79 p. 2. Sarsembaeva N.B. Veterinary sanitary examination of poultry products. Tutorial. Almaty, 2006, 127 p. 3. Adilbekov J.Sh., Inirbaev A.K., Baldzh Yu.A. Guidelines for laboratory and practical classes on veterinary and sanitary examination of milk and dairy products. Astana 2009 g . 4. Sanitary rules of 2010 for utilities, social and cultural purposes and public catering in the Republic of Kazakhstan. Almaty 2011, 192 p. 5 .Maykanov BS, Yu bulge Forensic veterinary examination. Astana 2013
8. The content of the disciplines Forensic thanatology is a section of forensic medicine that studies the process of dying and post-mortem changes in organs and tissues in relation to the goals and objectives of forensic medical examination. Tanatology is a section of theoretical and practical medicine that studies the state of an organism in the final stage of an unfavorable outcome of a disease, dynamics, and the mechanism of the process of dying.	

1. Basic information about the discipline:	
Name of the discipline	**Fundamentals of animal reproduction biotechnology**
2. The number of loans	**5**
3. Prerequisites:	Anatomy, genetics, histology and embryology, physiology, Bioorganic and biological chemistry, Latin veterinary terminology feeding animals, livestock, pathological physiology, pharmacology, microbiology and immunology, virology, operative surgery, veterinary health, clinical di agnostic with the radiologist , in eterinarnoe obstetrics and gynecology .
4. Post requisites:	Studying the "Fundamentals of Reproduction Biotechnology" will create a fundamental basis for future professional activities, specialization in the field of veterinary obstetrics, and reproduction biotechnology.
5. Competencies:	To have an idea of the structural and physiological characteristics of the reproductive apparatus of females and males, the course of the reproductive cycle, the optimal time and frequency of insemination, the necessary conditions for the normal course of pregnancy, childbirth and the postpartum period, causes of infertility, diseases of the mammary gland and newborns.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Obstetrics, gynecology and biotechnology of animal reproduction. - M .: Kolos S, 2012 - 440 c. 2. N. I. Polyantsev Technology of reproduction of pedigree cattle. Tutorial. 2014 year 3. Mukhamadieva N.N., Kablanov T.E., Tolymkhanova Z.N., Sovetov Zh.T., Aidarkhanova G.S. Improving the method of direct transplantation of embryos from donor cows to recipient cows // international journal of applied and fundamental research. - 2016 4. Avdeenko, V. S. Biotechnology of reproduction with the basics of obstetrics in animals. Textbook / V.S. Avdeenko, S.V. Fedotov, J.O. Kemeshov. - M .: INFRA-M, 2016 .-- 124 p. 5. Avdeenko V.S., Fedotov S.V. Biotechnology of reproduction with the basics of obstetrics. LLC "Scientific and Publishing Center INFRA-M" 2017 6. Fedotov, S.V. Biotechnology of reproduction with the basics of animal obstetrics / S.V. Fedotov. - M .: INFRA-M, 2017 - 325 s. 7. G.P. Dulger, E.S. Sedletskaya. Obstetrics, gynecology and biotechnology of breeding cats. Study Guide 2018
8. The content of the discipline Introduction to the discipline. General biological principles of animal biotechnology. Morphological and functional features of germ cells of ova and spermatozoa and dov . G AME pathogenesis: spermatogenesis and oogenesis. Organization of animal reproduction in biotechnology . Iskuss idents insemination and transplantation embrionov.Otsenka qualities and sperm.	

1. Basic information about the discipline:	
Name of the discipline	**Female genital diseases**
2. The number of loans	**5**
3. Prerequisites:	Anatomy, genetics, histology and embryology, physiology, bioorganic and biological chemistry, Latin veterinary terminology, animal feeding, animal husbandry, pathological physiology, pharmacology, microbiology and immunology, virology, operative surgery, veterinary hygiene, clinical diagnostics with radiology, etc.
4. Post requisites:	Veterinary obstetrics, reproduction biotechnology
5. Competencies:	To have an idea of the structural and physiological characteristics of the reproductive apparatus of females and males, the course of the reproductive cycle, the optimal time and frequency of insemination, the necessary conditions for the normal course of pregnancy, childbirth and the postpartum period, causes of infertility, diseases of the mammary gland and newborns.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Studentsov A.P., Shipilov V.S., Nikitin N.Ya. et al. ed. Nikitina V.Ya. and Mirolyubova M.G .: - 7th ed .; reslave. and add. Veterinary obstetrics, gynecology and reproduction biotechnology. - M .: Kolos, 2000. 2. N.I.Polyantsev. Technology for breeding livestock. Tutorial. Moscow, 2014 3. Mukhamadieva N.N., Kablanov T.E., Tolymkhanova Z.N., Sovetov Zh.T., Aidarkhanova G.S. Improving the method of direct transplantation of embryos from donor cows to recipient cows // international journal of applied and fundamental research. - 2016 4. Avdeenko, V. S. Biotechnology of reproduction with the basics of obstetrics in animals. Textbook / V.S. Avdeenko, S.V. Fedotov, J.O. Kemeshov. - M .: INFRA-M, 2016 .-- 124 p. 5 . Avdeenko V.S., Fedotov S.V. Biotechnology of reproduction with the basics of obstetrics. LLC "Scientific and Publishing Center INFRA-M" 2017 6. Fedotov, S.V. Biotechnology of reproduction with the basics of animal obstetrics / S.V. Fedotov. - M .: INFRA-M, 2017 - 325 s. 7 . G.P. Dulger, E.S. Sedletskaya. Obstetrics, gynecology and biotechnology of breeding cats. Study guide . Moscow, 2018
8. The content of the discipline Structural features and physiologists and the sexual apparatus of females and males. The course of the sexual cycle, the optimal time and frequency of insemination, the necessary conditions for the course of pregnancy, childbirth and the postpartum period, the reasons for infertility are the technology of artificial insemination and transplantation of embryos.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Management**
2. The number of loans	**5**
3. Prerequisites:	Veterinary microbiology. Veterinary Virology. Pathological morphology. Food safety. Veterinary sanitary surveillance and control at the border and transport. Veterinary epidemiology.
4. Post requisites:	Parasitology and invasive animal diseases. Veterinary and sanitary examination of livestock and poultry products. Epizootic monitoring and organization of veterinary events.
5. Competencies:	*To know and understand* - the theoretical and practical fundamentals of management in veterinary medicine. The history of the formation of the veterinary service. Fundamentals of legislative regulation in veterinary medicine. The structure of the veterinary service and state veterinary institutions. International veterinary organizations. In the field - in practice, apply the knowledge gained in the field of veterinary activities. Plan and organize veterinary events. Organize veterinary and sanitary supervision and control. Conduct veterinary records and records. *To use* - the principles and methods of work of a veterinarian. The methodology for determining the economic damage and economic efficiency of veterinary measures. *To have* practical skills to determine the cost-effectiveness of veterinary measures; draw up draft regulatory documents; organize and carry out a set of measures for the prevention and elimination of infectious diseases of animals; develop and maintain veterinary documentation *Be competent* - to the financing of veterinary measures. In veterinary institutes and veterinary services of foreign countries.
6. Course author	Department of Veterinary Sanitation
7. Basic literature	1. Biyashev K.B., Mynzhanov M.T. Organization of veterinary medicine. Tutorial. Almaty 2003 2.Abdrakhmanov S.K., Tursunkulov Zh.Sh., Akhmetov A.N. Organization of veterinary medicine, Workshop. Astana 2006 3 .Abdrakhmanov S.K., Yeseneeva S.S. CMD in the discipline "Organization of veterinary medicine" Astana. - 2010 g . 4. D. Khusainov, N. Akhmetsyzdykov, H. Abeuov, S. Abdrakhmanov. Veterinary management and organization of veterinary business. Textbook. Almaty - 2015 g .
8. The content of the discipline Legislative regulation of veterinary affairs. Organizational structure and management of veterinary medicine. Organization of veterinary and sanitary supervision. Planning and organization of veterinary events. The economic efficiency of veterinary measures and the methodology for its determination. Veterinary financing. Training of veterinary specialists and scientific support of the veterinary service. Logistical support of the veterinary service. International veterinary organizations and veterinary services abroad.	

1. Basic information about the discipline:	
Name of the discipline	**Veterinary Organization**
2. The number of loans	**5**
3. Prerequisites:	Veterinary microbiology. Veterinary Virology. Pathological morphology. Food safety. Veterinary sanitary surveillance and control at the border and transport. Veterinary epidemiology.
4. Post requisites:	Parasitology and invasive animal diseases. Veterinary and sanitary examination of livestock and poultry products. Epizootic monitoring and organization of veterinary events.
5. Competencies:	*To know* - theoretical and practical basis for the organization of veterinary affairs. Fundamentals of legislative regulation in veterinary medicine. Rights and obligations of a veterinarian in a rural district. *To use* in practice, apply the knowledge gained in the field of veterinary activities. Organize and draw up a plan of veterinary measures for the prevention of infectious and non-infectious animal diseases. Organize measures to eliminate the focus of acute infection. Draw up acts of seizure and destruction of animals. The act of carrying out preventive work on the farm. The principles and methods of work of a veterinarian. *To have* skills composition leniyu normative documents; organize and carry out a set of measures for the prevention and elimination of infectious diseases of animals; develop and maintain veterinary documentation *To be competent* in regulatory documents in the field of veterinary medicine. Activities of veterinary institutes and veterinary services of foreign countries.
6. Course author	Chair in eterinarn th sanitation and
7. Basic literature	1. Abdrakhmanov S.K., Tursunkulov Zh.Sh., Akhmetov A.N. Organization of veterinary medicine. Workshop Astana 2006. 2 . Abdrakhmanov S.K., Eseneeva S.S. CMD in the discipline "Organization of veterinary medicine" Astana. - 2010. 3. D. Khusainov, N. Akhmetsyzdykov, H. Abeuov, S. Abdrakhmanov. Veterinary management and organization of veterinary business. Textbook. Almaty - 2015.
8. The content of the discipline General organizational issues. Legislative regulation of veterinary affairs. Organizational structure of veterinary medicine. Organization of veterinary medicine in areas in the rural district. Organization of veterinary medicine in agricultural enterprises. Planning for veterinary events. Organization of veterinary events. Training of veterinary specialists and scientific support of the veterinary service. Logistical support of the veterinary service. International veterinary organizations and veterinary services abroad.	

1. Basic information about the discipline:	
Name of the discipline	**Operative surgery**
2. The number of loans	**5**
3. Prerequisites:	Morphology of animals with Latin veterinary terminology, physiology and biochemistry of animals, veterinary microbiology and animal virology, veterinary pharmacology with toxicology, animal pathology.
4. Post requisites:	Veterinary surgery, orthopedics and ophthalmology, veterinary obstetrics, epizootology and infectious diseases, parasitology and invasive diseases, specialization disciplines.
5. Competencies:	The student must **:** Demonstrate knowledge and understanding in the field of surgical surgery, the application of knowledge at a professional level; To know the topographic anatomy of organs and tissues of an animal in a specific and age aspect; theoretical basis and technique of surgical operations; theoretical foundations of surgical pathology, principles of prevention and treatment; safety measures when working with animals and conducting mass operations.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 . Magda I.I., Itkin B.Z., Voronin I.I. Surgical surgery with the basics of topographic anatomy. M. Kolos, 2000. 2. Petrakov K.A., Salenko P.T. and others. Surgical surgery with the basics of topographic anatomy. M . Kolos, 2003. 3 . Martinec Elisabeth A. Veterinary Science. Student Workbook Cornell University 2003. 4. Veremey E.I., Stekolnikov A.A. Clinical surgery in veterinary medicine. Textbook for students of higher educational institutions with a degree in Veterinary Medicine - Minsk. ITC Ministry of Finance, 2010.
8. The content of the discipline Classification of surgical operations. Stages of a surgical operation. Indications, contraindications for surgery. Preoperative preparation of the animal. Postoperative complications , prevention and treatment methods. Fixing and fell and immobilization of animals, pharmacologically e funds and immobilization. A septic tank as and antiseptic as well . Sterilization of surgical items. Principles and methods for the preparation of hands and the surgical field. Surgery on various parts of the animal’s body	

1. Basic information about the discipline:	
Name of the discipline	**Small Animal Surgery**
2. The number of loans	**5**
3. Prerequisites:	Morphology of animals with Latin veterinary terminology, physiology and biochemistry of animals, veterinary microbiology and animal virology, veterinary pharmacology with toxicology, animal pathology.
4. Post requisites:	The study of the discipline " Surgery of small animals" will deepen knowledge in this area of veterinary medicine
5. Competencies:	*The student must* **:** Demonstrate knowledge and understanding in the field of surgery, applying knowledge in a professional manner; *To use* and to apply knowledge and solve problems in the field of veterinary surgery, to express their opinions and be able to interpret information to make judgments taking into account social, ethical and scientific considerations; have the ability to bring information, problems and solutions to both specialists and non-specialists;
6. Course author	Department of Veterinary Medicine
7. Basic literature	1 . Magda I.I., Itkin B.Z., Voronin I.I. Surgical surgery with the basics of topographic anatomy. M. Kolos, 2000. 2. Petrakov K.A., Salenko P.T. and others. Surgical surgery with the basics of topographic anatomy. M. Kolos , 2003. 3. Martinec Elisabeth A. Veterinary Science. Student Workbook Cornell University 2003. 4 . Lebedev A.V., Chervanev V.A., Troyanovskaya L.P. Veterinary ophthalmology. Tutorial. M., Kolos. 2004. 5. Veremey E.I., Stekolnikov A.A. Clinical surgery in veterinary medicine. Textbook for students of higher educational institutions with a degree in Veterinary Medicine - Minsk. ITC Ministry of Finance, 2010.
8. The content of the discipline General principles of planning, organization and conduct of therapeutic and preventive surgical work. Methods of surgical treatment of small animals. Prevention of surgical infection. Surgical treatment for various pathologies in small animals. Abdominal surgery in small animals. The concept of injuries. Types and classification of injuries. General and local response to injury. The concept of surgical infections.	

1. Basic information about the discipline:	
Name of the discipline	**Epizootological monitoring and organization of veterinary events**
2. The number of loans	**5**
3. Prerequisites:	Veterinary Microbiology, Veterinary Virology, Clinical Diagnostics, Veterinary Management, Veterinary Epidemiology
4. Post requisites:	Knowledge of the theoretical and practical foundations of epizootological monitoring and organization of veterinary events is one of the leading in the formation of a veterinary medicine doctor and will help the student to combine the knowledge into a system and apply it in scientific and industrial activities.
5. Competencies:	Own methods of epizootological research. Knowledge of the patterns of development of the epizootic process of animal infectious diseases. To be able to conduct epizootological monitoring of the territory for certain diseases. Own methods of organizing preventive and antiepizootic measures.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Begenova A.B., Zhumakaeva A.N., Maykanov B.S. Shekaradagi reap keljtep veterinarian sanitation bakylau. Okulyk Astana 2008 2. Abdrakhmanov S.K. Epizootological monitoring and organization of veterinary events. Tutorial. Astana 2012 - 224s. 3. Abdrakhmanov S.K., Maykanov B.S., Yakubovsky T., Beisembaev K.K., Mukhanbetkaliev E.E. Epizootology and infectious diseases with the basics of veterinary sanitation. Tutorial: 2 m - Astana. Publ KazATU, 2015 .-T.1.-301. 4. Abdrakhmanov S.K., Maykanov B.S., Yakubovsky T., Beisembaev K.K., Mukhanbetkaliev E.E. Epizootology and infectious diseases with the basics of veterinary sanitation. Tutorial: 2 T-Astana: Publishing house KazATU 2015. T.2.-376. 5. Abdrakhmanov S.K., Beisembaev K.K. Workshop on Epizootology and Infectious Diseases with the basics of veterinary sanitation. - Workshop . - Astana : Publishing house KazATU 2016. - 161 p.
8. The content of the discipline Risk analysis and prognosis of an epizootic situation. E pizootological study. Causes, factors, risk and prognosis of the development of the epizootic process. Statistics and analysis of epizootological data. Organization of measures to identify the causes of infectious diseases. Monitoring, zoning is, and development and anti-epizootic plans. Computer processing of statistical data using GIS technologies. Modeling of the epizootic process in infectious diseases of animals.	

1. Basic information about the discipline:	
Name of the discipline	**Cross-border and exotic animal diseases**
2. The number of loans	four
3. Prerequisites:	Animal anatomy, animal physiology and biochemistry, veterinary microbiology, veterinary virology, veterinary pharmacology and toxicology, clinical diagnostics, pathomorphology, veterinary epidemiology
4. Post requisites:	Knowledge of the theoretical and practical foundations of cross-border and exotic animal diseases is one of the leading in the formation of a veterinary medicine doctor and will help the student to combine the knowledge into a system and apply it in scientific and industrial activities.
5. Competencies:	Identification of the causes of the occurrence and spread of transboundary and exotic animal diseases. Diagnosis, treatment of transboundary and exotic animal diseases. Knowledge of the main groups of drugs used to treat cross-border and exotic animal diseases. Development of plans for preventive, curative, recreational and anti-epizootic measures.
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Epizootology and infectious diseases of agricultural animals. Under the editorial professor tion K o nopatkina. M., Kolos, 1993. 543 p. 2. Shuvalova EP Tropical diseases. Moscow, 2004 - 183s. 3 . Diseases of dogs and cats. Complex diagnostics and therapy of diseases of dogs and cats: textbook. allowance / T.K. Donskaya [et al.]; under the editorship of S.V. Starchenkova. - SPb: Special literature 2006. -655 s. 4. Ivanov N.P. Diagnosis of infectious diseases of animals. N Study of sobie, Almaty, 2009 5 . Baykadamova G.A. Rare and exotic infectious diseases of animals and birds. IP "Gutsalo" Kostanay. 2011. 266- c.
8. The content of the discipline The spread of transboundary and exotic animal diseases. Cross-border and exotic animal diseases of viral etiology. Cross-border and exotic animal diseases of bacterial etiology. Prion diseases. Features of the treatment and prevention of transboundary and exotic animal diseases.	

1. Basic information about the discipline:	
Name of the discipline	**Emerging Infectious Animal Health**
2. The number of loans	**5**
3. Prerequisites:	Animal anatomy, animal physiology and biochemistry, veterinary microbiology, veterinary virology, veterinary hygiene, veterinary pharmacology and toxicology, clinical diagnosis, pathomorphology
4. Post requisites:	Exotic infectious diseases of animals, prevention and control measures against zooanthroponic diseases, especially dangerous infectious diseases of animals and birds
5. Competencies:	*To be competent:* - in developing plans for preventive, antiepizootic measures against exotic emergent infections of animals; - when developing measures to protect nature from the accumulation of pathogenic and pathogens of emergent infections of animals in it; - when applying the OIE recommendation on the elimination of emergent infections among animals.
6. Course author	Chair in eterinarnoy medical s
7. Basic literature	1 . Veterinary legislation of the Republic of Kazakhstan. Astana, 2004-2005 g . T. 1,2,3 . 2 . Infectious diseases of animals. Edited by Professor A.A. SIDORCHUK, Moscow, Kolos With 2007 g . 3 . Ivanov N.P. Diagnosis of infectious diseases of animals. Textbook, Almaty 2009 g . 4 . Baykadamova G.A. Rare and exotic infectious diseases of animals and birds. IE "Gutsalo" . Kostanay. 2011 g . 266- c. 5. Ivanov N.P. Diagnosis of infectious diseases of animals. The textbook in 2 volumes. Almaty, g 2013 . 599s (564s) 6. Abdrakhmanov S.K., Maykanov B.S., Yakubovsky T., Beisembaev K.A., Mukhanbetkaliev E.E. Epizootology and infectious diseases with the basics of veterinary sanitation. The textbook in 2 volumes. Astana: Publishing House KATU them. S.Seifullina. 2014 -677 p . 7 . Abdrakhmanov S.K., Beisembaev K.A., Workshop on Epizootology and Infectious Diseases of Animals. Workshop Astana, 2016 - 160 s. Ed. KazATU named after S.Seifullina.
8. The content of the discipline Modern emergent infections . Epizootic situation on emergent diseases in the world and the Republic of Kazakhstan. Prevention and control measures for viral diarrhea in cattle. Features of the epizootic process of infectious rhinotracheitis in cattle. Nodular dermatitis in cattle. Bluetang (catarrhal fever). Cattle Ibaraki. Akabane cattle. Flu bird.	

1. Basic information about the discipline:	
Name of the discipline	**Prediction and risk assessment of animal infectious diseases**
2. The number of loans	**5**
3. Prerequisites:	Veterinary Microbiology, Veterinary Virology, Clinical Diagnostics, Veterinary Management, Veterinary Epidemiology
4. Post requisites:	Knowledge of the theoretical and practical foundations for predicting and assessing and risking infectious animal diseases is one of the leading factors in the formation of a veterinary medicine doctor and will help the student integrate the acquired knowledge into a system and apply it in scientific and industrial activities.
5. Competencies:	Identification of the causes of the occurrence and spread of infectious diseases of animals. Knowledge of the patterns of development of the epizootic process of animal infectious diseases. Proficiency in risk identification, risk identification and risk management. Prediction of animal infectious diseases using information and communication technology
6. Course author	Department of Veterinary Medicine
7. Basic literature	1. Dzhupina, S.I. Prediction of the epizootic situation (on the model of the epizootic process of anthrax) / S.I. Dzhupina; RAAS. Sib. Separation. IEVSiDV. Novosibirsk, 1996 - 162 s. 2. Dudnikov S.A. Quantitative Epizootology: Fundamentals of Applied Epidemiology and Biostatistics. - Vladimir: Demiurge, 2004 - 460 p. 3. Dzhupina S.I. Lessons from epizootological studies. - M.: RUDN, 2004 - 299 p. 4 . Abdrakhmanov S.K. Epizootological monitoring and organization of veterinary events. Tutorial. - Astana: Master Po LLP. 2012 - 224 p. 5 . Abdrakhmanov S.K., Maykanov B.S., Yakubovsky T., Beisembaev K.A., Mukhanbetkaliev E.E. Epizootology and infectious diseases with the basics of veterinary sanitation. The textbook in 2 volumes. Astana: KazATU im. S.Seifullina. 2014 -677 p.
8. The content of the discipline Classification of animal infectious diseases. The laws of the epizootic process. Methods for predicting an epizootic process. The use of information and communication technologies in forecasting and risk assessment.	