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

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at the meeting of the
University Academic Council
Protocol №___
dated 30 05 2019

APPROVED
Chairman of the Board
JSC "S.Seifullin Kazakh Agro Technical University"
_____ A.K. Kurishbayev
"30" 05 2019

EDUCATIONAL PROGRAM
"Diagnosis, treatment and prevention of animal diseases"
(name of the program)

Code and classification of education: 7M091-Veterinary
Code and classification of training areas: 7M091-Veterinary
Code in the International Standard Classification of Education: 7M0841
Qualification: Master of Veterinary Science of the educational program "Diagnosis, treatment and prevention of animal diseases"
Duration of study: 2 years
Full-time form of education

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Dean of the Veterinary and Animal
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Doctor of Veterinary Science, Professor — Abdrakhmanov T.Zh

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1 Passport of the educational program

1.1 The purpose of the educational program is to prepare highly qualified scientific and pedagogical personnel for higher and secondary specialized educational institutions and research organizations in the field of veterinary medicine. The content of the educational program is aimed at obtaining knowledge and practical skills for the diagnosis and prevention of animal diseases in the Customs Union and the World Trade Organization, in accordance with the recommendations of international organizations (UN, World Animal Health Organization, Food and Agriculture Organization, World Health Organization, etc.).
Main tasks:
- the deepening of theoretical and practical knowledge of the veterinary industry;
-preparation of specialists able to solve modern scientific and practical problems, teach in higher nd secondary specialized educational institutions, carry out research and management activities in veterinary structures;
-to implement the implementation of innovative methodologies and technologies in the preparation of scientific and practical projects;
- provide an individual learning path in accordance with the chosen specialization;
- meet the expectations of the labor market and the requirements of stakeholders.

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

The educational program (EP) is developed in accordance with the National Qualifications Framework and professional standards, is designed on the basis of a modular system for studying disciplines and contains 13 modules. The volume of the Basic Cycle is 29% of the EP volume or 35 credits. Of these, 57% or 20 credits are assigned to University Components. The volume of the Special Discipline Cycle is 41%, or 49 credits of the EP volume.

The relevance of the EP is that it provides the need of the labor market for scientific and practical personnel of the veterinary profile who have special competences in the field of monitoring and management of animal diseases of various etiologies, scientific and educational activities, for production, educational and scientific organizations.

A special feature of the EP is that it teaches modern methodologies of research in the field of epidemiology, therapy, surgery of obstetrics of animal diseases, as well as veterinary aspects of food safety, taking into account regional peculiarities of Kazakhstan.

Competitive advantages are determined by the fact that the basic and elective disciplines of the study program are coordinated with world research trends in specific areas of the veterinary sciences.

The uniqueness of the program lies in the fact that the process of its implementation allows the undergraduates to use the material and technical platforms of the university, innovative scientific institutions and agro-industrial enterprises of Kazakhstan in order to achieve results that meet international standards.

Stakeholders of the EP are veterinary services of local, regional and republican levels, Research Producing Enterprise "Atameken", agrarian business entities of Central and Northern Kazakhstan, leading educational, research organizations of the veterinary profile of the country.

3. Competency model (portrait) of the graduate

3.1 Sphere of professional activity of masters:

- management structures of state veterinary supervision;
- research organizations of veterinary, biological and agricultural areas;
- pedagogical activity in the field of professional veterinary education;
- Commercial veterinary enterprises.

3.2 Types of professional activity

Graduates 7M091 graduate - "Veterinary Medicine" can perform the following professional activities:

- production and management;
- organizational and technological;
- research;
- design and innovation;
- pedagogical;
- entrepreneurial.

3.3 General Education Competences

- awareness of the social importance of the profession, the possession of motivation to carry out professional activities;
- the ability to use systematic theoretical and practical knowledge of the humanities and social sciences in solving social and professional problems;
- mastering the methodology of scientific experiment and analysis of factual material in the field of veterinary medicine for practical application in professional activities;
- skills to work on modern means of information and communication technology.

3.4 Basic Competences

- the ability to use in research basic knowledge of the theory and methodology of veterinary science;
- the ability to understand, critically analyze and use basic veterinary information;
- the use of the main methods used in veterinary activities in solving professional problems;
- ability to compile reviews, annotations, abstracts and bibliographies on the subject of the problem under study.

3.5 Professional Competences

- the ability to navigate in such modern scientific concepts as United Health, Animal Welfare, explaining the unity, diversity and approaches to veterinary activities;
- willingness to apply methods of complex analysis of the data obtained to explain specific veterinary facts and problems;
- skills of application of general scientific and special principles and methods of knowledge in the analysis;
- be able to synthesize the theoretical, practical and ethical elements of professional competence;
- the ability to develop and implement specialized training programs in educational institutions of veterinary and biological profile;
- the ability to use special knowledge gained in the framework of the educational trajectory of undergraduates.

4 Base of professional practice

The educational program includes two types of practice, which are held in parallel with the theoretical training:

1) pedagogical - in specialized institutions of higher education;
2) research - in specialized research and educational institutions.

Pedagogical practice is conducted with the aim of developing practical skills in teaching and learning. In this case, undergraduates are attracted to conduct classes in the bachelor at the discretion of a specialized higher educational institution.

The research practice of the undergraduate is conducted in order to familiarize with modern methods of scientific research, theoretical and technological achievements of domestic and foreign science.

Research practice is carried out in various state and private veterinary structures of local, regional and republican significance, agricultural economic entities, leading educational institutions and research organizations of the veterinary and biological profile of the country. The research work carried out during the period of professional practice is used for setting up production and laboratory experiments, accumulating theoretical and factual material in order to process and interpret research results, design in the form of scientific publications and a master's thesis.

5. The structure of the educational program of magistracy in the scientific and pedagogical direction

№ p/p	Name of the cycles of disciplines and activities	Total labor input	
		in academic hours	in academic credits
1	2	3	4
1.	Theoretical training	**2520**	**84**
1.1	Cycle of basic disciplines (BD)	**1050**	**35**
1)	University Component (UC)	600	20
	including:		
	History and Philosophy of Science	150	5
	Foreign language (professional)	150	5
	Higher School Pedagogy	90	3
	Management Psychology	150	5
	Pedagogical Practice	60	2
2)	Elective Components (EC)	450	15
	Patenting and intellectual property protection Veterinary legislation	150	5
	Disease prevention and animal welfare (Eng) Basics of herd health management	150	5
	Diagnosis of non-contagious diseases of young animals (Kz) Practical therapy	150	5
1.2	Cycle of basic disciplines	**1470**	**49**
1)	University component (UC)		
	Theory and methods of the experiment	150	5
	Exotic and Infectious Animal Diseases	150	5
	Research methods in veterinary ostetrics	150	5
2)	Elective Component (EC)		
	Prevention and Control of Zoonotic Diseases Epizootological Monitoring and Forecast of Infectious Animal Diseases	150	5
	Invasive diseases of ruminant animals Protozooses of animals, birds and fish	150	5
3)	Research practice	600	20
2	Research work	720	24
1)	The research work of the undergraduate, including the internship and the implementation of the master's thesis	720	24
3	Additional types of training		
4	Final attestation	360	12
1)	Registration and protection of the master's thesis	360	12

	Total	3600	120

Appendix 3. Description of the disciplines of compulsory and university components

1. Basic information about the discipline:	
Name of the discipline	**"History and philosophy of science"**
2. Amount of credits	**5**
3. Prerequisites:	To study the course "History and Philosophy of Science" the undergraduate must have knowledge of the history and theory of philosophy
4. Post requisites:	The main concepts and directions of non-classical and post-non-classical stage of development of history and philosophy of science. Structure and level of scientific knowledge. Methodology of science. Science as a profession. Ideals and norms of science. The philosophical foundations of science and the scientific picture of the world. Scientific traditions and scientific revolutions. History and philosophy of natural and technical sciences. History and philosophy of social and human sciences. Philosophical problems of the development of modern global civilization
5. Competences:	Upon completion of the course, the undergraduate will be able to freely operate with the scientific and conceptual apparatus of the specialty, expand the scientific and information base, master the skills of interpreting scientific information, argumentation, persuasion, scientific controversy, academic writing. With the help of the skills gained during the course, the undergraduate will be able to freely exchange views at the international level during discussions, scientific conferences and forums.
6. Course author	
7. Main literature	1. Feynman R.P. dozens of lectures: six simpler and six more difficult. - M., 2006. 2. Flowers C. The Ten Commandments of Instability 2007. 3. History and philosophy of science / Ed. Y. Kryanev. - M., 2007. 4. History and philosophy of science / Ed. AS. Mamzin. - St. Petersburg, 2008. 5. Kazakhstan Respublikasyny zaңdary. Bilim tours for. Almaty, 2007
8. The content of the discipline. The subject of history and philosophy of science. Worldview foundations of science. Functions of science. The emergence and formation of science. Science in the Ancient World, the Middle Ages and the Renaissance. New European science is a classic stage in the development of science. The main concepts and directions of non-classical and post-non-classical stage of development of history and philosophy of science. Structure and levels of scientific knowledge. Methodology of science. Science as a profession. Ideals and norms of science. The philosophical foundations of science and the scientific picture of the world. Scientific traditions and scientific revolutions. History and philosophy of natural and technical sciences. History and philosophy of social and human sciences. Philosophical problems of the development of modern global civilization	

2. Basic information about the discipline:	
Name of the discipline	**Foreign language (professional)**
2. Amount of credits	**5**
3. Prerequisites:	Foreign language (general course), vocational-oriented foreign language, in the humanities and natural sciences. English (basic English)
4. Post requisites:	Teaching foreign languages in a magistracy in non-linguistic higher education as a profile and scientific direction should be aimed at mastering a foreign language for professional and academic purposes at the most modern level, which will allow working with a large scientific conceptual framework easily, expand the scientific information base, capture the abilities interpretation of scientific information, argument, persuasion, scientific controversy and scientific literature
5. Competences:	The master student must know: the functional and stylistic characteristics of the scientific presentation of the material in the foreign language being studied, the general scientific terminology and the terminological sublanguage of the corresponding specialty in a foreign language, - basics of business correspondence in the framework of international cooperation This will ensure a free exchange of views at the international level during discussions, scientific conferences and forums, as well as conducting classes with students in a foreign language on the profile of the specialty
6. Course author	**Department Foreign Language**
7. Main literature	1. McCarthy, Michael & O'Dell, Felicity. (2008). Academic Vocabulary in Use (Edition with answers). Cambridge: CUP 2.Kathy Cox, David Hill English for Academic Purposes, Pearson Longman, 2011 3. Kazakhstan Respublikasyny zaңdary. Bilim tours for. Almaty, 2007. 4. Starters of the development of al-Farabi Kazakh National University for 2009-2011. Almaty, 2008. 5. Common European Framework of Reference (CEFR): Learning, Teaching, Assessment. Strasbourg, 2002.
8. The content of the discipline. From the course **"Foreign Language (Professional")** is the formation of foreign language communicative competencies of students, such as linguistic, sociolinguistic, sociocultural, discursive and social. As well as the formation of competencies necessary to use English in educational, scientific and professional activities.	

3. Basic information about the discipline:	
Name of the discipline	**Higher School Pedagogy**
2. Amount of credits	**5**
3. Prerequisites:	Modern. History. Kazakhstan. Philosophy. Self-knowledge
4. Post requisites:	Fundamentals of Economics and Law. Psychology of management in educational institutions. Mental health prevention and suicide prevention. Theory and methods of educational work. Pedagogical management in the system of vocational education. Psychology of management in educational institutions.
5. Competences:	As a result of studying the discipline **"Pedagogy of Higher Education"** undergraduate - learn: actual problems of pedagogical science; the essence of the pedagogical activity of a university teacher; - owns the abilities: the selection from the surrounding reality of pedagogical facts, phenomena, events and descriptions of them in the language of pedagogical science, based on the laws of pedagogical theories, explanations, prediction and development; the design of the educational process, based on new concepts of training and education. It will be competent: in solving problems of higher pedagogical education and the prospects for its further development; in the application of effective university technology training; solutions of current psychological and pedagogical problems, evaluation of achieved results;
6. Course author	
7. Main literature	1.Pedagogy / Hop N.D. - A, 2005 2. Podlasy I.P. Pedagogy. New course In 2 volumes. - M, 2002, 2004. 3.Pedagogy / ed. V.A. Slastenin and others - M., 1998. 4.Comprehensive education program in educational organizations of the Republic of Kazakhstan. - Astana, 2000. 5. Әbenbaev S., Әbiev J. Pedagogy. textbook. - Astana: Folivit, 2009. 336p. 6.Babayev S.B., Onalbek Zh.K. Well, general pedagogy: a textbook. - Almaty, 2011-228 p.
8. The content of the discipline. Fundamentals of higher education pedagogy. The subject and tasks of higher education pedagogy. Methodology and methods of pedagogical research in higher education. Didactics of high school. The pedagogical process in higher education. Laws, patterns and principles of learning. Methods, forms and means of teaching in higher education. The current state of higher education in the Republic of Kazakhstan. Professional development of a higher education teacher. The process of education in high school. The purpose of education as a pedagogical problem. The educational team as a form of functioning of the holistic pedagogical process.	

4. Basic information about the discipline:	
Name of the discipline	**"Psychology of management"**
2. Amount of credits	**5**
3. Prerequisites:	Pedagogy. Basically right.
4. Post requisites:	The obtained theoretical and practical knowledge will allow the undergraduate to reasonably systematize and use them for scientific purposes and production conditions.
5. Competences:	Upon completion of the course "Psychology of Management" undergraduate will be able to: understand the psychophysiological characteristics of work; basics of personality psychology; know the psychological foundations of management and cognitive processes; know and understand the mechanisms of human perception of man and the mechanisms of people's influence on each other, psychotechnology of influence, the psychology of leadership; know the psychological characteristics of the formation of the labor collective and interpersonal relations in it and be able to regulate interpersonal relations in the team, including effectively resolve conflict situations; apply the psychological laws of management decision-making and be able to take into account the psychological factors of management in general;
6. Course author	
7. Main literature	1. Kulagina I.Yu., Kolyutsky V.N. Developmental Psychology: The full life cycle of human development. Textbook for students of higher educational institutions. - M., 2001 2. Slobodchikov V.I., Isaev E.I. Fundamentals of psychological anthropology. Psychology of human development: The development of subjective reality in ontogenesis: A manual for universities. - M., 2000. 3. Bezrukikh M.M., Sonkin V.D., Farber D.A. Age physiology. - Moscow, Publishing Center "Academy", 2007. - 358 p.
8. The content of the discipline. Introduction to the psychology of management. Conceptual apparatus of management psychology. Leader and team. Conflicts in the workplace. Managerial communication. Decision making technology. The concept of the subject and object of management. Leader and leader. Psychology of the order. Personality as a subject and object of management. Democratic leadership style and its features. Psychology of criticism. Psycho types of subjects of communication. Psychological persuasive technique. Psychological problems of selection of leading cadres. Psychological problems of training and retraining of managerial personnel. Staff recruitment and placement. Staff rotation. Certification and staff turnover.	

5. Basic information about the discipline	
Name of the discipline	**Theory and methods of experiment**
2. Number of credits	**5**
3. Pre requisites	cultural studies, political science, sociology, mathematics, physics, chemistry, biology
4. Post requisites	philosophy, pedagogy, psychology, history
5. Competences	Student should have a presentation, know, be able to be competent: - the use of scientific methods in the study of private problems in professional pedagogy; rules for registration of scientific papers; - methods of pedagogical research; - to conduct a pedagogical experiment; - to work with sources and issue relevant documentation - to integrate knowledge in research activities aimed at a comprehensive study of the object, process or phenomenon, their structure and relationships, as well as obtaining and putting into practice useful results for humans; - to cope with difficulties in the field of communication: to comply with the ethical norms of communication, to be tolerant of others' opinions in disputes, to be able to conduct dialogue and resolve conflict situations; - independently engage in self-education in the field of scientific activity. - to be competent in the analysis of new scientific research, description of the results and used methods.
6. Course author	Veterinary Medicine Department
Main literature	1. А.А.Гусейнов. Этика и мораль в современном мире//Этическая мысль: современные исследования. – М.:Прогресс-Традиция.2009.-С.5-18 2. История этических учений/Под ред. А.А.Гусейнова.-М.: Гардарики. 2003.-911 с. 3. Алимжанова Л.В. Основы научных исследований в животноводстве Астана, 2005 г. 4. Бекряев В. И. Основы теории эксперимента.Учебное пособие. Санкт-петербург, 2002. 254 с.

8. The content of the discipline

Methods of laboratory research and the nature of control measurements in the process of conducting experimental work. Planning research and its theoretical phase, the selection of research methods. Formation of the plan for conducting scientific experiments on the branches of veterinary science and its theoretical phases. Informational and bibliographic support of scientific research.

6. Basic information about the discipline:	
1.Name of the discipline	**Modern problems of veterinary medicine**
2. Credits number	**5**
3. Pre requisites:	Veterinary hygiene, epizootology and infectious diseases, parasitology and invasive diseases, obstetrics and gynecology, internal non-communicable diseases with clinical diagnostics, surgery, veterinary-sanitary examination, organization and economics of veterinary.
4. Post requisites:	The use of current methodologies of management of veterinary medicine, taking into account current trends in the development of veterinary medicine.
5. Competences:	Have the ability to interpret and apply the concept of "Animal Welfare" and "One Health", international and domestic regulatory documents in the organization of veterinary medicine and research activities.
6. Course author	**Veterinary Medicine Department**
7. Main literature	1. Абдрахманов С.К. Эпизоотологический мониторинг и противоэпизоотический план. Учебное пособие. – Астана:КАТУ, 2012. 2. Абдрахманов Т.Ж. Акушерство. Учебник. – Алматы, 2019. 3. Беркинбай О. Современные проблемы ветеринарной медицины. В 4-томах. – Алматы, 2018. 4. Булашев А.К., Кухар Е.В. Ветеринарная биотехнология. – Астана, 2009. – 222 с.
8. The content of the discipline: The state, structure and role of veterinary medicine in food security of Kazakhstan. Concepts «Animal Welfare» and «One Health», international and domestic legislation in the field of veterinary medicine. Modern methods of diagnosis, prevention and treatment of infectious and non-contagious animal diseases. New technological processes for the manufacture of veterinary drugs. Actual problems in the veterinary directions (therapy, surgery, pharmacy, management).	

7. The main information about the discipline:	
Name of the discipline	Exotic and Infectious Diseases of Animals
2. Amount of credits	5
3. Prerequisites:	Knowledge of Microbiology, Virology, Patphysiology, Pathology, Pharmacology, Toxicology, Epizootology is necessary for mastering the discipline.
4. Postrequisites:	Formation of professional qualities of a teacher and a scientific researcher with mastering the scientific methods when it comes to foreign infectious animal diseases.
5. Competences:	To be competent in carrying out anti-epizootic measures against foreign infectious animal diseases. To be good at scientific methodology, modern software products, processing of results; to use that knowledge in their professional activities.
6. Course author	Veterinary Medicine Department
7. Main literature	1. Highly Dangerous Infectious Diseases of Animals and Birds [Osobo opasnyie infektsionnyie bolezni zhivotnyih i ptits]. Piontkovsky V.I., Mustafin M.K. Textbook, 2006.-p.243. 2. Infectious Animal Diseases [Infektsionnyie bolezni zhivotnyh]. Edited by Professor Sidorchuk A.A., M., Kolos S, 2007. 3. Diagnosis of Infectious Animal Diseases [Diagnostika infektsionnyh bolezney zhivotnyh]. Ivanov N.P. Textbook, Almaty, 2009.-p.350. 4. Epizootology with Veterinary Sanitation [Epizootologiya s veterinarnoy sanitariey]. Abdrakhmanov S.K., Maikanov B.S., Yakubovsky T., etc. Textbook, 2015.-p.540. 5. Organization of Veterinary Affairs [Organizatsiya veterinarnogo dela]. Abdrakhmanov S. K. Laboratory manual, Astana, 2006 6. Baikadamova G.A. Rare and Exotic Diseases of Animals and Birds [Redkie i ekzoticheskie bolezni zhivotnyih i ptits]. Almaty, Nur-Print. 2011.-p.266.
The content of the discipline Epizootic situation on exotic infectious diseases in the world and in the Republic of Kazakhstan. Bovine Ephemeral Fever. Nodular Dermatitis of Cattle. Ibaraki Disease. Akabanae Disease. Wesselbron Disease. Nairobi Disease. Equine Viral Arteritis. Borna Disease in Horses. Ratbite (Sodoku) Disease. Schmallenberg Disease. Teschen Disease. African Swine Fever. Reticulo-Respiratory Syndrome in Swine.	

8. Basic information about the discipline**:** **:**	
Name of discipline	«Research methods in animal obstetrics»
2. Number of credits	5
3. Prerequisites:	To master the full course "Methods of research in animal obstetrics " you need to know the sections of anatomy, physiology, biochemistry, Microbiology, feeding, hygiene, clinical diagnosis with radiology, veterinary surgery, veterinary obstetrics.
4. Post-requisites:	The study of the course "Vethods of research in animal obstetrics" forms the basis of professional activity of the employee in the field of veterinary medicine
5. Competence:	The student should be able to own clinical, laboratory, biophysical methods for determining the sex phenomena, assess the quality of sperm, the diagnosis of pregnancy, sterility, condition of the genital organs, the mammary gland.
6. The author of the course	Department of veterinary medicine,
7. Basic literature	1. Studentsov A. P., Shipilov V. S., Nikitin N. I. etc. under the editorship of cows / / G. P..:- 9th ed.; pererab. I DOP. "Veterinary obstetrics, gynecology and Biotechnics of reproduction" – M.: ear, 2018. 2. Dzhakupov I. T. Veterinary obstetrics and gynecology. Astana, 20113 3. WEHREND A, GROEGER S Verfahren der tierärztlichen Puerperalkontrolle und derenAuswirkungen auf die Fruchtbarkeit.Tierärztliche Praxis, 2008:36 (Suppl. 1), 20-24.
8. Content of the discipline	Clinical and laboratory methods of research in animal reproduction, determination of sexual phenomena. Clinical, biophysical and laboratory methods of diagnosis of pregnancy and infertility of animals. Methods of breast research. Research methods in andrology

Appendix 4. Description of elective disciplines

9. Basic information about the discipline:	
Name of the discipline	**Patenting and intellectual property protection**
2. Amount of credits	**5**
3. Prerequisites:	The study of the course “Patenting and protection of intellectual property” is based on knowledge of the theoretical foundations of the theory and methods of experimentation, scientific ethics and other general educational, natural science disciplines, as well as the presence of practical abilities in organizational activity, research, creative skills, skills to improve their cognitive activity and work on their own.
4. Post requisites:	Knowledge of the theoretical and practical bases of patent science will help the undergraduate to integrate knowledge into the system and apply them in further research and production activities.
5. Competences:	As a result of the training, the undergraduate, as a future specialist, scientist, must be competent in the field of protection of intellectual property and copyright, must be able to conduct patent information research and prepare national and international applications for inventions.
6. Course author	**Department of Veterinary Sanitation**
7. Main literature	1. The Law of the Republic of Kazakhstan "On Copyright and Related Rights" dated June 10, 1996 (with changes and amendments dated September 23, 2017). 2. Patent Law of the Republic of Kazakhstan dated July 16, 1999 (with amendments and additions dated 06/20/2018). 3. Tkalich V.L., Labkovskaya R.Ya., Pirozhnikova O.I., Korobeynikov A.G. Patenting and intellectual property protection: a training manual. St. Petersburg, 2015, 171 p. 4. Mendebaev T.N., Nusupov S.N. Inventions. Methodical manual for inventors and patent employees of enterprises, scientific organizations. Astana, 2008. P.212. 5. Reingand N. (Ed.) Intellectual Property in Academia: A Practical Guide for Scientists and Engineers. CRC Press, 2013. - 352 p.
8. The content of the discipline.	The concept of the invention, as an object of industrial property. Objects of the invention. Creative thinking and invention. Intellectual property, the legislation of the Republic of Kazakhstan on the protection of intellectual and industrial property. International cooperation in the field of industrial property protection. Patent documentation and its use.

10. Basic information about the discipline	
1.Name of the discipline	**Disease prevention and animal welfare**
2. Number of credits	**5**
3. Prerequisites:	Epizootology and Infectious Diseases, Parasitology and Invasive Diseases, Organization and Economics of Veterinary.
4. Postrequisites:	Using the principles of animal welfare in the organization of experimental work in research work in laboratory and production conditions.
5. Competences:	To be able to implement programs for the prevention and control of animal diseases; know the responsibilities of owners, handlers, veterinarians and other responsible persons to ensure the welfare of animals; identify and participate in the correction of animal welfare problems; to find out information on modern national and international standards on humane methods of animal husbandry, transportation and slaughter of animals for consumption and disease control programs.
6. Author of the course	**Veterinary Medicine Department**
7. The main literature	Абдрахманов С. К. Организация ветеринарного дела. Практикум. - Астана, 2006. Абдрахманов С.К., Майканов Б.С., Якубовский Т. и др. Эпизоотология с ветеринарной санитарией. Учебник. – Астана, 2015. – 540с. ECAWM. European College of Animal Welfare and Behaviour Medicine Animal Welfare Science, Ethics and Law. (ECAWM); 2017. < http://www.ecawbm/com/wp-content/uploads/2013/11/de-facto-application -form-ECAWBM-AWSEL-Oct-2013.pdf>
8. Content of the discipline	The concept of animal welfare and ethology. Modern national and international legislation on good animal welfare practice. Providing humane technologies of animal husbandry, animal care and treatment. The welfare of animals during transportation and slaughter for consumption, as well as killing for the purpose of research or prevention of diseases. Scientific assessment of animal welfare. The relationship between disease and well-being. Behavior as a tool for diagnosing a sick animal. Euthanasia of animals when conducting experiments. The role of preventive veterinary medicine, proper housing, feeding, humane treatment and slaughter / killing to ensure animal welfare.

10. Basic information about the discipline	
1. Name of the discipline	**Basics of herd health management**
2. Number of credits	**5**
3. Prerequisites:	. Epizootology and Infectious Diseases, Parasitology and Invasive Diseases, Organization and Economics of Veterinary.
4. Postrequisites:	The presence of organizational skills, research, creative skills for the development of disease control skills in animal populations.
5. Competences:	Practical implementation of the basic principles of the health of a herd of livestock management, wild and aquatic animals; programs for the prevention and control of zoonotic and contagious, emergent and re-emergent diseases; “Early diagnosis systems” for identifying the occurrence or outbreak of diseases / infections in a country, zone or compartment under the control of a veterinary service
6. Автор курса	**Кафедра ветеринарной медицины**
7. Основная литература	Абдрахманов С. К. Организация ветеринарного дела. Практикум. - Астана, 2006. Абдрахманов С.К. Эпизоотологический мониторинг и противоэпзоотический план. Учебное пособие. – Астана: КазАТУ, 2012. Абдрахманов С.К., Майканов Б.С., Якубовский Т. и др. Эпизоотология с ветеринарной санитарией. Учебник. – Астана, 2015. – 540с. Кадыров Н.Т., Есімбеков Ж.М. и др. Паразитология и инвазионные болезни животных. – Павлодар, 2011.-755с.
8. Содержание дисциплины	Идентификация и контроль передвижения животных. Менеджмент здоровья стада скота, диких и водных животных. Развитие и обеспечение мер биобезопасности, гигиены. Ветеринарная отчетность и документация; использование биологических и других ветеринарных препаратов. Профилактическая ветеринария. Контроль при инфекционных и инвазионных заболеваниях. Предотвращение риск-факторов и экономическим потерь, связанных с заболеваниями животных.

11. Main information about the discipline:	
Name of the discipline	Diagnosis of non-contagious diseases of young animals
2. Number of credits	**5**
3. Prerequisites:	Anatomy, genetics, histology and embryology, physiology, biochemistry, biophysics, microbiology, virology and immunology, veterinary hygiene, veterinary radiology, clinical diagnostics, pharmacology, veterinary surgery, veterinary obstetrics.
4. Post requisites:	A modern understanding of the status of non-contagious diseases of young animals, the degree of spread, the interpretation of research and the organization of evidence-based methods of treatment and prevention.
5. Competences	Have the ability to navigate in modern scientific concepts on the application of knowledge and problem solving on the diagnosis of non-contagious diseases of young. Interpretation of laboratory research results; organization of treatment and preventive measures; Ability to implement the methodology of recognition of the disease process; knowledge of basic physiological features in the species and age aspect.
6. Author of course	Veterinary Medicine Department
7. Main literature	1.Щербаков Г.Г.,Яшин А.В., Курдеко А.П и др Внутренние болезни животных. Учебник. - Издательство «Лань», 2014.-720с. 2.Щербаков Г.Г.,Яшин А.В., Курдеко А.П и др Практикум по внутренним болезням животных СП б.: Лань 2016.-544с. 3.Молдағұлов М.А.,Есқожаев Ө.К..Заманбеков Н.А Жануарлар ішкі аурулары - Оқулық «НурөПринт»2009.385 4.Osborn C.A., Kruger J,M, Lulich J.P, Polzin D. J. Disorders pf the feline lower urinary tract, In , Osborne C.A., Finco D.R. (eds.) Canine and Feline Nehhrology and urology. Baltimore. Williams, 1995. p. 625-680. 5.Ritchey J. W., Levy J.K., Bliss S.K., Tompkins W.A., Tompkins M.B., 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. The subject of study are gastrointestinal and respiratory diseases of young non-infectious etiology, as well as diseases caused by impaired metabolic processes, vitamin, macro - and microelement deficiency.	

11.Name of the discipline	**Practical therapy**
2. Amount of credits	**5**
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:	Mastering the course "Practical Therapy" forms a professional veterinary specialist and scientific researcher, which will contribute to the successful application of acquired theoretical knowledge and practical skills in scientific and industrial activities. Interpretation of modern research methods and organization of scientifically based methods for the diagnosis, treatment and prevention of animal disease. Considers the development prospects.
5. Competences:	Have the ability to navigate in modern scientific concepts on the application of knowledge and the solution of practical problems in the diagnosis, treatment and prevention of animal diseases. Interpret the results of modern laboratory research. It is practically correct to organize diagnostic and treatment-and-prophylactic measures. Ability to implement the methodology of recognition of the disease process, practical knowledge of anatomical and topographic data, basic physiological features in the species and age aspect, theoretical substantiation of the main links of the etiology and pathogenesis of the development of diseases.
6. Course author	Department of Veterinary Medicine
7. Primary literature	1.Щербаков Г.Г.,Яшин А.В., Курдеко А.П и др Внутренние болезни животных. Учебник. - Издательство «Лань», 2014.-720с. 2.Щербаков Г.Г.,Яшин А.В., Курдеко А.П и др Практикум по внутренним болезням животных СП б.: Лань 2016.-544с. 3.Osborn C.A., Kruger J,M, Lulich J.P, Polzin D. J. Disorders pf the feline lower urinary tract, In , Osborne C.A., Finco D.R. (eds.) Canine and Feline Nehhrology and urology. Baltimore. Williams, 1995. p. 625-680. 4.Ritchey J. W., Levy J.K., Bliss S.K., Tompkins W.A., Tompkins M.B., 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: The discipline “Practical therapy” studies various methods of therapeutic techniques: voluntary and violent (enteral and parenteral) methods of drug administration, as well as the use of modern instrumental methods of diagnosing internal diseases of animals.	

12. The main information about the discipline:	
Name of the discipline	Prevention and Control of Zoonotic Diseases
2. Amount of credits	5
3. Prerequisites:	Knowledge of Microbiology, Virology, Patphysiology, Pathology, Pharmacology, Toxicology, Epizootology is necessary for mastering the discipline.
4. Postrequisites:	Formation of professional qualities of a teacher and a scientific researcher with mastering the scientific methods when it comes to prevention and control of zoonotic diseases.
5. Competences:	To be competent in carrying out anti-epizootic measures against foreign infectious zoonotic diseases. To be good at scientific methodology, modern software products, processing of results; to use that knowledge in their professional activities.
6. Course author	Veterinary Medicine Department
7. Main literature	1. Highly Dangerous Infectious Diseases of Animals and Birds [Osobo opasnyie infektsionnyie bolezni zhivotnyih i ptits]. Piontkovsky V.I., Mustafin M.K. Textbook, 2006.-p.243. 2. Infectious Animal Diseases [Infektsionnyie bolezni zhivotnyh]. Edited by Professor Sidorchuk A.A., M., Kolos S, 2007. 3. Diagnosis of Infectious Animal Diseases [Diagnostika infektsionnyh bolezney zhivotnyh]. Ivanov N.P. Textbook, Almaty, 2009.-p.350. 4. Epizootology with Veterinary Sanitation [Epizootologiya s veterinarnoy sanitariey]. Abdrakhmanov S.K., Maikanov B.S., Yakubovsky T., etc. Textbook, 2015.-p.540. 5. Organization of Veterinary Affairs [Organizatsiya veterinarnogo dela]. Abdrakhmanov S. K. Laboratory manual, Astana, 2006 6. Baikadamova G.A. Rare and Exotic Diseases of Animals and Birds [Redkie i ekzoticheskie bolezni zhivotnyih i ptits]. Almaty, Nur-Print. 2011.-p.266.
The content of the discipline Introduction. Epizootic situation on Zoonotic Diseases in the World and in the Republic of Kazakhstan. Plague in Camels. Foot and Mouth Disease in Ruminants. Vesicular Stomatitis. Tularemia of Animals. Quadrilateral Fever. Trichophytosis of Animals. Equine Influenza. Equine Glanders. Rift Valley Fever. Swine Erysipelas. Swine Influenza. Ornithosis birds.	

12. The main information about the discipline:	
Name of the discipline	Epizootological Monitoring and Forecast of Infectious Animal Diseases
2. Amount of credits	5
3. Prerequisites:	The study of the "Epizootological Monitoring and Forecast of Infectious Animal Diseases" course is based on Epizootology and Infectious Diseases, Microbiology, Virology, Immunology, Organization and Economics of Veterinary Medicine, Veterinary Sanitation, and Veterinary Hygiene.
4. Postrequisites:	Formation of professional qualities of a teacher and a scientific researcher with mastering the scientific methods when it comes to foreign infectious animal diseases.
5. Competences:	To be competent in carrying out epizootological monitoring and forecast of infectious animal diseases. To be good at scientific methodology, using modern software products, processing of results; to use that knowledge in their professional activities
6. Course author	Veterinary Medicine Department
7. Main literature	1. Highly Dangerous Infectious Diseases of Animals and Birds [Osobo opasnyie infektsionnyie bolezni zhivotnyih i ptits]. Piontkovsky V.I., Mustafin M.K. Textbook, 2006.-p.243. 2. Infectious Animal Diseases [Infektsionnyie bolezni zhivotnyh]. Edited by Professor Sidorchuk A.A., M., Kolos S, 2007. 3. Diagnosis of Infectious Animal Diseases [Diagnostika infektsionnyh bolezney zhivotnyh]. Ivanov N.P. Textbook, Almaty, 2009.-p.350. 4. Epizootology with Veterinary Sanitation [Epizootologiya s veterinarnoy sanitariey]. Abdrakhmanov S.K., Maikanov B.S., Yakubovsky T., etc. Textbook, 2015.-p.540. 5. Organization of Veterinary Affairs [Organizatsiya veterinarnogo dela]. Abdrakhmanov S. K. Laboratory manual, Astana, 2006 6. Baikadamova G.A. Rare and Exotic Diseases of Animals and Birds [Redkie i ekzoticheskie bolezni zhivotnyih i ptits]. Almaty, Nur-Print. 2011.-p.266.
The content of the discipline: Dynamics of epizootic outbreaks and characteristics of their main stages. Influence of natural and geographical conditions, and socio-economic factors on the epizootic process. Intensity of the epizootic process and its statistical measures. Contagiousness, prevalence, morbidity, incidence, mortality, case fatality rate, nidus coefficient, unfavorable points ratio. Extensive indicators: seasonality, frequency. Types of epizootic foci depending on place, distribution and time of occurrence.	

13. basic information about the discipline	
Name of the discipline	**Invasive Diseases of Ruminants**
2. Amount of credits	**5**
3. Pre Requisites:	Zoology of invertebrates and vertebrates, veterinary hygiene, animal pathology, Parasitology and invasive diseases, veterinary management
4. Post Requisites:	The current state, prevalence of parasitic diseases of ruminants, research and the organization of scientifically-based methods of diagnosis, treatment and prevention of animal invasions.
5. Competences:	Have the ability to solve the problems of controlling parasitic diseases of ruminants; interpreting laboratory results; organization of treatment and preventive measures.
6. The author of the course	**Veterinary Medicine Department**
7. Basic literature	. Акбаев М.Ш. Паразитология и инвазионные болезни животных. М.: Колос, 2012. 2. Кадыров Н.Т., Есімбеков Ж.М. и другие. Паразитология и инвазионные болезни животных. Павлодар, 2011.-755с. 3. Сабаншиев М.С. Паразитология және жануарлардың инвазиялық аурулары. Алматы, Агроуниверситет, 2012.-460б. 4. Шабдарбаева Г.С. Ветеринариялық арахноэнтомология және протозоология. Алматы, Агроуниверситет, 2012.- 460б. 5.Ибраев Б.К., Шабдарбаева Г.С., Токпан .С. Жануарлардың инвазиялық ауруларын анықтау практикумы. Астана, 2013.-205с. 6. Ибраев Б.К., Бауэр К., Лидер Л.А. Диагностика инвазионных болезней. Алматы, Бастау 2017.
8. Content of the discipline	Modern methods of diagnosis, prevention and treatment of helminthiases (nematodosis, cestodosis, trematode), arachnoentomoses (arachnoses, enthomoses) and protozooses (piroplasmosis, trypanosomosis, coccidiosis), modern serological and molecular biological methods used in the diagnosis of invasive disease**.**

13. The main information about the discipline:	
Name of the discipline	**Protozooses of Animals, Birds and Fish**
2. Amount of credits	**5**
3. Prerequisites:	Zoology of vertebrates and invertebrates, clinical diagnostics, epizootology (general and private), animal pathology, pharmacology and toxicology, parasitology and invasive diseases, veterinary-sanitary examination, organization and economics of veterinary, pharmacology and toxicology
4. Postrequisites:	Zoology of vertebrates and invertebrates, clinical diagnostics, epizootology (general and private), animal pathology, pharmacology and toxicology, parasitology and invasive diseases, veterinary-sanitary examination, organization and economics of veterinary, pharmacology and toxicology
5. Competences:	The process of studying the discipline is aimed at the formation of the following competencies: features of the diagnosis of protozoan diseases and interpretation of the results obtained, the study of exotic parasitosis and methods of combating them, a comparative study of the course of some of the most threatened invasions.
6. Courseauthor	Department "Veterinary Medicine"
7. Mainliterature	1. **Main literature** 1. Акбаев М.Ш. Паразитология и инвазионные болезни животных. М.: Колос, 2012. 2. Кадыров Н.Т. Паразитология и инвазионные болезни животных., Астана 2000. 3 Ибраев Б.К., Бауэр К., Лидер Л.А. Диагностика инвазионных болезней. Алматы, Бастау 2017. 4 Ветеринарная паразитология. Справочное руководство / У. Д. Форейт. - М. : Аквариум-Принт, 2012. - 248 с. 5. Ветеринарная протозоология [Электронный ресурс]. - 2009. - 60 с.
Content of the discipline	The current state of veterinary medicine, including the spread of protozoan diseases registered in Kazakhstan and abroad; published legislative and regulatory documents in Kazakhstan and abroad in the field of veterinary medicine, and in particular parasitology, which allow planning, developing, implementing and correcting the existing complex methods for diagnosing protozoal diseases; analysis and evaluation of imported foreign veterinary-diagnostic and biological products that come and are registered in the Republic of Kazakhstan in a comparative aspect with similar domestic biological products; ways of preventing zooanthroponosis taking into account the changes that have occurred in recent years in agriculture, including in veterinary medicine, due to the expansion of interstate economic and economic relations (import of imported animals, animal products, etc.); paths and factors affecting the spread of invasive disease pathogens, ways to protect the environment and develop evidence-based disease prevention activities.

Dean of the Veterinary and Animal Husbandry Technology Faculty, Doctor of Veterinary Sciences, Professor — S.K. Abdrakhmanov

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