

CATALOG OF ELECTIVE DISCIPLINES

For students in the direction of preparation 6B091 Veterinary

Brief description of the elective disciplines of the educational program

EPIC	EP	Form of education	The name of discipline	Code of subject	Discipline code	Component	Number of credits	Level of training	Calendar	Course	Academic period	Pre-requisites	Post-requisites	Brief content of the discipline	Key learning outcomes	
6B03 - «Veterinary science»	6B09102 - «Food safety» (year)	Full-time (bachelor 5 semester)	Basics of anti-corruption culture (Russian language)	PKRYA 1249	BS	Elective subjects	5	Bachelor	Veterinary sanitation	1	3	Kazakh (russian) language	Physiological monitoring and organization of veterinary events, forensic Veterinary Expertise Paratuberculosis and invasive animal diseases 1. Technological, sanitary and veterinary-sanitary examination of meat and dairy products 1. Veterinary control at the border and transport. Veterinary-sanitary examination of livestock and poultry products 1. Veterinary-sanitary examination of products of plant growing, fish farming and beekeeping 1	From the date of written and oral speech observing all the rules of (Kazakh) professional literary language. Knowledge of the semantic structural features of professional texts of various functional styles, communication skills and speech skills when reading professional texts in the specialty	Use communication in oral and written forms in the state, Russian and Kazakh languages to solve professional problems of interpersonal and intersectoral interaction.	Basics of economics and law, innovative entrepreneurship. Introduction to leadership in education. Оқпаның маңызын анықтау және қолдану.
6B03 - «Veterinary science»	6B09102 - «Food safety» (year)	Full-time (bachelor 5 semester)	Basics of anti-corruption culture	OAK 1123	GER	Elective subjects	5.0	Bachelor	Economy	1	3	Higher mathematics. Philosophy. History of Kazakhstan	Management in veterinary 1. Organization of veterinary business 1	The discipline examines the theoretical and methodological foundations of the concept of "corruption" and examines the improvement of socio-economic relations of the Republic of Kazakhstan as a condition for combating corruption, psychological features of the nature of corrupt behavior, formation of anti-corruption culture, features of formation of anti-corruption culture of youth, ethnic features of formation of anti-corruption culture, moral and ethical responsibility for corruption in various spheres Discipline allows you to learn about legal responsibility for corruption offenses	Analyze in a legal and quantitative way the conditions for the development of production and evaluate the competitiveness of created products on the principles of engineering, study innovative entrepreneurship and anti-corruption culture, formal inventions	Basics of anti-corruption culture, Basics of economics and law, Innovative entrepreneurship, Introduction to leadership in education
6B03 - «Veterinary science»	6B09102 - «Food safety» (year)	Full-time (bachelor 5 semester)	Occupational safety and health	OTBZM 2208	GER	Elective subjects	5.0	Bachelor	Mechanization of technological processes	1	3	Human security and rights	Physiological monitoring and organization of veterinary events, Internal animal diseases, Internship, Laboratory science in veterinary, Management in veterinary 1, Organization of veterinary business 1, Parasitology and invasive animal diseases 1, Preparation practice, Technology, sanitary and veterinary-sanitary examination of meat and dairy products 1, The veterinary control at the border and transport. Veterinary Expertise Paratuberculosis and invasive animal diseases 1. Technological, sanitary and veterinary-sanitary examination of meat and dairy products 1. Veterinary control at the border and transport. Veterinary-sanitary examination of livestock and poultry products 1. Veterinary-sanitary examination of products of plant growing, fish farming and beekeeping 1	The discipline contributes to the formation of students' knowledge, practical skills in creating safe and harmless living conditions, in preventing the causes and conditions for the occurrence of dangerous situations, in protecting the population and production personnel and national economy from the possible consequences of emergency situations. It also studies the features of labor protection for various meat, youth, and farm production and control over the implementation of labor protection requirements and responsibility for violation of labor protection requirements	Make calculations in heat engineering, thermodynamics and electrical engineering, choose the correct operation of electrical and thermal equipment, analyze hazards and environmental and life safety requirements	Basics of anti-corruption culture, Basics of economics and law, Innovative entrepreneurship, Introduction to leadership in education
6B03 - «Veterinary science»	6B09102 - «Food safety» (year)	Full-time (bachelor 5 semester)	Basics of economics and law	OEP 1126	EUR	Elective subjects	5.0	Bachelor	Economy	1	3	Fundamentals of economics and law, philosophy	Physiological monitoring and organization of veterinary events, Management in veterinary 1, Organization of veterinary business 1	The discipline promotes knowledge of the subject of economic theory and methods of research, the bases of public production and forms of public economy, the mechanisms of functioning of the firm, the market economy. Goals and tasks of the firm, the market economy, growth and instability of the market economy, inflation and unemployment as manifestations of economic instability. Demonstrate know ledge and skills in the financial and monetary credit system in the national economy and economic security. To master the bases of the theory of the state and law, the basics of constitutional, administrative, civil, labor, family, criminal law.	Analyze in a legal and quantitative way the conditions for the development of production and evaluate the competitiveness of created products on the principles of engineering, study innovative entrepreneurship and anti-corruption culture, formal inventions	Basics of anti-corruption culture, Innovative entrepreneurship, Introduction to leadership in education. Оқпаның маңызын анықтау және қолдану.



B083 - «Veterinary science»	(6B09) 02 - «Food safety» (year)	Full-time (bachelor 5 trimester)	Introduction to leadership in education	VLO 1129	GER	Elective subjects	5.0	Bachelor	Professional name of programme	3	Cultural studies and psychology, History of Kazakhstan, Political science and sociology	Internship, Management in veterinary 1, Organization of veterinary business 1	The discipline analyzes and studies the model of effective communication of the leader, methods of management in critical situations, methods of work in the management team and the principle of distribution of roles in the team, methods of effective control and motivation of training. It provides an opportunity to study the theory of leadership qualities and at the same time the concept of leadership behavior (Office Leadership styles (K. Levin), research at the University of Ohio, research at the University of Michigan, management system (R. Liker), management grid (Blake and Mouton), concept of reward and punishment, substitute leadership (S. Kerr and J. Gitmer)	To organize highly efficient operation of technology, apparatus, machinery and technological equipment in production, to show leadership qualities	Bases of anti-corruption culture. Bases of economics and law. Introduction to leadership in education. (Optional program: «Семестральный проект»)
B083 - «Veterinary science»	(6B09) 02 - «Food safety» (year)	Full-time (bachelor 5 trimester)	Innovative entrepreneurship	IP 1130	GER	Elective subjects	5.0	Bachelor	Economy 1	3	Information and communication technologies	Management in veterinary 1, Organization of veterinary business 1	From students' knowledge of the fundamental concepts of innovative development, modern approaches to the implementation of entrepreneurial activity in the field of new technologies to ensure the competitiveness of an innovative enterprise on the market. Understand the economic essence of innovative entrepreneurship, business planning, venture financing and know the types of firms with venture capital. Possess skills in risk management, human resource management, innovative management and innovative processes, as a condition for economic growth.	Analyze in a logical and quantitative way the conditions for the development of production and evaluate the competitiveness of created products on the principles of engineering, study innovative entrepreneurship and anti-corruption culture. formulate inventions	Bases of anti-corruption culture. Bases of economics and law. Introduction to leadership in education. (Optional program: «Семестральный проект»)
B083 - «Veterinary science»	(6B09) 02 - «Food safety» (year)	Full-time (bachelor 5 trimester)	Histology with the basics of cytology	QOC 2205	BSS	Elective subjects	5.0	Bachelor	Microbiology 2 and biotechnology	1	General biology	Animal physiology and biochemistry 2, Animal physiology and biochemistry 3	Studies histology and ultrastructural structure and basic aspects of cell activity, cell division and differentiation, classification of organ tissues, features of their development and structure, morphological bases of reactivity, adaptation and characteristics of organs and tissues. Develops skills in the use of microscope and electron microscope forms of technology.	ON 2 To formulate the macro- and microorganisms' zoological systematics and morphological features of organs' and systems' structure	Private histology and embryology of animals
B083 - «Veterinary science»	(6B09) 02 - «Food safety» (year)	Full-time (bachelor 5 trimester)	Private pathology and embryology of animals	CIJGEZH 2269	BSS	Elective subjects	5.0	Bachelor	Microbiology 2 and biotechnology	1	General biology	Animal physiology and biochemistry 2, Animal physiology and biochemistry 3	Examines the histological structure of the internal organs of animals. Studies the bases of general embryology (the structure of germ cells, glands, the stages of gametogenesis, the stages of embryogenesis in mammals and birds)	Formulate zoological systematics, determine the anatomical and morphological features of the structure of organs and systems of the animal body, understand the essence of physiological and biochemical processes in the animal body, master the methods of microscope study of cells, tissues and organ systems	
B083 - «Veterinary science»	(6B09) 02 - «Food safety» (year)	Full-time (bachelor 5 trimester)	Zoology	Zoo 2206	BSS	Elective subjects	4	Bachelor	Microbiology 2 and biotechnology	1	General biology	Animal physiology and biochemistry 2, Animal physiology and biochemistry 3, Veterinary practices examination of livestock and poultry products 1, Veterinary practices examination of livestock and poultry products 2	Studies the fitness and regularity of the distribution of various animals on Earth, their systematics, the origin of various animal species, ways of development, the diversity of animals, their role in nature, animal ecology. Considers the species of invertebrates and all types of vertebrates	ON 2 To formulate the macro- and microorganisms' zoological systematics and morphological features of organs and systems structure	Zoogeography
B083 - «Veterinary science»	(6B09) 02 - «Food safety» (year)	Full-time (bachelor 5 trimester)	Zoogeography	Zoo 2264	BSS	Elective subjects	4	Bachelor	Zoogeography 2	1	General biology	Animal physiology and biochemistry 2, Animal physiology and biochemistry 3, Veterinary practices examination of livestock and poultry products 1, Veterinary practices examination of livestock and poultry products 2	Studies the basic patterns of distribution of various animals depending on natural and climatic conditions. Formulates theoretical knowledge in the field of ecology of the animal world	ON 2 To formulate the macro- and microorganisms' zoological systematics and morphological features of organs and systems structure	Zoology
B083 - «Veterinary science»	(6B09) 02 - «Food safety» (year)	Full-time (bachelor 5 trimester)	Veterinary genetics with the basics of foodstuffs	VGH 2208	BSS	Elective subjects	5.0	Bachelor	Microbiology 2 and biotechnology	1	Histology, morphology, anatomy, molecular biology, microbiology, biochemistry, Veterinary hygiene 1, Veterinary diagnostics and epidemiology, physiologists	Teaching of animal pathology of animals 1, Pathology of animals 2, Pathology, Veterinary hygiene 1, Veterinary diagnostics and epidemiology, physiologists	Studies the basis of modern genetics, the laws of heredity and variability using cytological and molecular genetic methods. Develops skills in the use of specific and intergenerational hybridization, individual processing of experimental data	ON 3 To explain the inheritance patterns of livestock organisms signs changing and to master the molecular processing skills of primary material	Veterinary genetics with the basics of animal selection

10083 - Veterinary science	(6B09102 - Food safety) (year)	Full-time (bachelor 5 year) trimester	Veterinary genetics with the basics of animal selection	VGOSZL 2271	BS	Elective subjects	5 0	Bachelor	Microbiology and biotechnology	2	1	Histology, morphology, infectious, immunetics, microbiology, bioorganic chemistry and organic chemistry, physioanalysts	Feeding of animals, Pathology of animals 1, Pathology of animals 2, Pathology of animals 3, Veterinary hygiene 1, Veterinary hygiene 2, Veterinary hygiene 3, Veterinary obstetrics and @neology	Studies the basics of molecular genetic analysis role in animal breeding. Forms theoretical and practical skills of breeding work in livestock formations	Explain the factors of inheritance of changes in the characteristics of living organisms, master the skills of genetic processes of primary material, consider a mutation and hygiene assessment of the system of keeping, feeding and watering of animals and birds, determine the chemical composition and zoonoclimical indicators of food, organize normalized feeding of animals	Veterinary genetics with the basics of breeders
10083 - Veterinary science	(6B09102 - Food safety) (year)	Full-time (bachelor 5 year) trimester	Laboratory diagnostics in veterinary	LDV 2209	BS	Elective subjects	5 0	Bachelor	Veterinary medicine	2	2	animal morphology, histology with the basics of cytology, zoology, animal physiology, analytical and physico- colloid chemistry	Pathology of animals 1, Pathology of animals 2, Veterinary microbiology 1, Veterinary microbiology 2, Veterinary pharmacology and toxicology 1, Veterinary pharmacology and toxicology 2	Develops theoretical and practical skills of working in a veterinary laboratory, studies modern methods of laboratory diagnostics of animal diseases. Defines the rules for organizing work in veterinary laboratories and maintaining the necessary documentation	ON 3 To explain the inheritance patterns of living organisms, signs changing and to master the biometric processing skills of primary material ON 10 To formulate the theoretical and practical foundations of etiopathogenesis, diagnostic and preventive measures for non-infectious pathologies, monitor radiation and poisoning diseases, to possess the laboratory diagnostic skills and to interpret obtained results	Laboratory science in veterinary
10083 - Veterinary science	(6B09102 - Food safety) (year)	Full-time (bachelor 5 year) trimester	Laboratory sciences in veterinary	LDV 2272	BS	Elective subjects	5 0	Bachelor	Veterinary sanitation	2	2	animal morphology, histology with the basics of cytology, zoology, animal physiology, analytical and physico- colloid chemistry	Pathology of animals 1, Pathology of animals 2, Pathology of animals 3, Veterinary microbiology 1, Veterinary microbiology 2, Veterinary pharmacology and toxicology 1, Veterinary pharmacology and toxicology 2	Familiarizes with the structure, activities and ongoing research in state veterinary laboratories, with the definition of safety rules when working in veterinary laboratories. Studies modern methods of laboratory research for the diagnosis of diseases of infectious and non-infectious etiology of animals	ON 3 To explain the inheritance patterns of living organisms signs changing and to master the biometric processing skills of primary material ON 10 To formulate the theoretical and practical foundations of etiopathogenesis, diagnostic and preventive measures for non-infectious pathologies, monitor radiation and poisoning diseases, to possess the laboratory diagnostic skills and to interpret obtained results	Laboratory diagnostics in veterinary
10083 - Veterinary science	(6B09102 - Food safety) (year)	Full-time (bachelor 5 year) trimester	The veterinary Virology	VV 3216	BS	Elective subjects	4	Bachelor	Microbiology and biotechnology	3	1	Histology, chemistry, bioorganic chemistry, biochemistry, physics, physiology, botany, zoology, histology, genetics, veterinary microbiology and immunology	Contamination of livestock products 1, Food safety 1, Pathology of animals 2, Pathology of animals 3, Veterinary hygiene 3, Veterinary- sanitary examination of livestock and poultry products 1, Veterinary-sanitary examination of livestock and poultry products 2	Determines the characteristics, isolation and reproduction of viruses, the resistance of viruses in the environment, the genetics and ecology of viruses, the pathogenesis of viral diseases, antiviral immunity of the body, Focus skills of diagnosis and specific prevention of viral diseases of farm animals	Understand the epizootic process, know the systematics, genetics, morphology and physiology of pathogens of infectious and viral diseases, carry out management and legislative regulation in veterinary medicine, establish a diagnosis, control allergic and clinical epizootic survey, vaccinate animals, develop an action plan for infectious animal diseases	Methods of virological research
10083 - Veterinary science	(6B09102 - Food safety) (year)	Full-time (bachelor 5 year) trimester	Methods of virological research	MVI 2275	BS	Elective subjects	4	Bachelor	Microbiology and biotechnology	3	1	Biohygiene, chemistry, bioorganic chemistry, biochemistry, physics, physiology, botany, zoology, histology, genetics, veterinary microbiology and immunology	Contamination of livestock products 1, Food safety 1, Pathology of animals 2, Pathology of animals 3, Veterinary hygiene 3, Veterinary- sanitary examination of livestock and poultry products 1, Veterinary-sanitary examination of livestock and poultry products 3	Studies of general description of viruses, chemical composition, their resistance to various physicochemical and biological factors, rules and safety procedures when working with materials containing viruses, methods for growing viruses in diagnostic embryos and cell growths, immunological methods for coexisting viruses, the emergence and spread of viruses, the light-quantum theory, fermenting with the features of treatment and prevention	Understand the epizootic process, know the systematics, genetics, morphology and physiology of pathogens of infectious and viral diseases, carry out management and legislative regulation in veterinary medicine, establish a diagnosis, control allergic and clinical epizootic survey, vaccinate animals, develop an action plan for infectious animal diseases	The veterinary Virology
10083 - Veterinary science	(6B09102 - Food safety) (year)	Full-time (bachelor 5 year) trimester	Veterinary radiobiology	VR 3212	BS	Elective subjects	3	Bachelor	Veterinary medicine	3	2	Anatomy, physiology and biochemistry of animals	Contamination of livestock products 1, Food safety 1, Pathology of animals 2, Pathology of animals 3, Veterinary hygiene 3, Veterinary- sanitary examination of livestock and poultry products 1, Veterinary-sanitary examination of livestock and poultry products 3	Examines the patterns of biological action of ionizing radiation on the body of animals. Gives certain knowledge in the field of dosimetry, radiometry	ON 10 To formulate the theoretical and practical foundations of etiopathogenesis, therapeutic and preventive measures for non-infectious pathologies, monitor radiation and poisoning diseases, to possess the laboratory diagnostic skills and to interpret obtained results	Radiobiological safety
10083 - Veterinary science	(6B09102 - Food safety) (year)	Full-time (bachelor 5 year) trimester	Radiobiological safety	RB 3268	BS	Elective subjects	3	Bachelor	Veterinary medicine	3	2	Anatomy, physiology and biochemistry of animals	Contamination of livestock products 1, Food safety 1, Pathology of animals 2, Pathology of animals 3, Veterinary hygiene 3, Veterinary- sanitary examination of livestock and poultry products 1, Veterinary-sanitary examination of livestock and poultry products 4	Studies the mechanisms of the effects of ionizing radiation on the body of farm animals. Develops practical skills in measuring instruments in radiology. Carries out laboratory work on radiation protection from exposure to ionizing radiation, and methods of providing assistance to animals exposed to radiation	Knows/ledge of the rules of veterinary and sanitary control during the production, transportation, storage and sale of products raw materials of animal origin, management and legislative regulation in veterinary medicine, methods for determination of veterinary medicine constants influence of vitamins, presence of vitamins content at the breeder and transport, at meat and dairy enterprises, carry out quality control of meat and dairy products, as well as crop products, fish farming and beekeeping, know the rules for sanitary assessment of the quality and safety of products when contaminated with foreign substances	Veterinary radiobiology



IB83 - (Veterinary sciences)	6899102 - Full-time (bachelor 5 year) trimester	Contamination of livestock products 1	KEP2A-4251	BS	Elective subjects	5.0	Bachelor	Veterinary sanitation	4	2	Pathoanatomy, epidemiology, parasitology, microbiology, virology, physiology, anatomy, histology, chemistry	Technological, sanitary and veterinary-sanitary examination of meat and dairy products 1. Technology, sanitary and veterinary-sanitary examination of meat and dairy products 2. Technology, sanitary and veterinary-sanitary examination of meat and dairy products 3. Veterinary-sanitary examination of livestock and poultry products 2. Veterinary-sanitary examination of livestock and poultry products 3. Veterinary-sanitary examination of products of plant growing, fish farming and beekeeping 2	Studies the general concept of contaminated livestock products and technical aspects of animal origin contaminated with biogenic substances, and determines the risks for their veterinary and sanitary assessment	To master the rules of veterinary care for slaughter animals, the technology and hygiene of the production of products of animal origin to ensure the quality and safety of livestock products at each stage of production, as well as veterinary judicial examination. Be able to carry out veterinary and sanitary control at the border and transport, at meat and dairy enterprises, carry out quality control of meat and dairy products, as well as crop products, fish farming and beekeeping. Know the rules for sanitary assessment of the quality and safety of products when contaminated with foreign substances	Food safety 1
IB83 - (Veterinary sciences)	6899102 - Full-time (bachelor 5 year) trimester	Contamination of livestock products 2	KEP2A-4266	BS	Elective subjects	5	Bachelor	Veterinary sanitation	4	3	Pathoanatomy, epidemiology, parasitology, microbiology, virology, physiology, anatomy, histology, chemistry	Epidemiological monitoring and organization of veterinary events, Parasitology, sanitary and veterinary-sanitary examination of meat and dairy products 3	Studies methods for the study of contaminated livestock products and technical raw materials of animal origin, contaminated with ichthyogenic foreign substances, and determines the rules for their veterinary and sanitary assessment	To master the rules of veterinary care for slaughter animals, the technology and hygiene of the production of products of animal origin to ensure the quality and safety of livestock products at each stage of production, as well as veterinary judicial examination. Be able to carry out veterinary and sanitary control at the border and transport, at meat and dairy enterprises, carry out quality control of meat and dairy products, as well as crop products, fish farming and beekeeping. Know the rules for sanitary assessment of the quality and safety of products when contaminated with foreign substances	Food safety 2
IB83 - (Veterinary sciences)	6899102 - Full-time (bachelor 5 year) trimester	Veterinary control at the border and transport	VKGT-5209	BS	Elective subjects	5.0	Bachelor	Veterinary sanitation	5	2	Veterinary hygiene and sanitation, veterinary and sanitary examination, epidemiology, parasitology, organization of veterinary business	Epidemiological monitoring and organization of veterinary events	Studies the issues of veterinary and sanitary measures to prevent the spread of diseases along the routes of road, rail and air transport, the implementation of veterinary and sanitary measures and ensuring security at the border and transport. Forms the skills of control and accounting of controlled goods, maintaining documentation	ON 3. To apply knowledge the veterinary and sanitary standards in maintenance, feeding and exploitation of animals ON 8. To provide the technology and hygiene rules of production of animal and plant products and veterinary and sanitary assessment of their quality	Veterinary and sanitary supervisors during export transport

