



CATALOG OF ELECTIVE DISCIPLINES

For students of the direction of preparation 7M0822 Animal production

Brief description of the elective disciplines of the educational program 7M08201 - "Feed and feeding of farm animals"

EPG	EP	Form of education	The name of discipline	Code of subject	Discipline cycle	Number of credits	Level of training	Cafedra	Course	Academic period	Pre-requisites	Post-requisitions	Brief content of the discipline	Key learning outcomes	Name of the alternative discipline
M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Mathematical modeling in animal husbandry	MMZh 5206 BS	Elective subjects	5.0	(Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	1	Higher Mathematics*, Production technology of animal husbandry products	Master student's research work, including implementation of master's thesis, Research practice, Teaching practice	The discipline reveals the concept of mathematical modeling and models, the process, the purpose of modeling in animal husbandry. Master students study abstract and material, speculative and verbal, informational and mathematical models. The discipline teaches undergraduates to establish the form of a connection between two features and the selection of a mathematical equation that expresses this connection. Functional, stochastic dependencies are mastered.	To collect and interpret information to form judgments in the field of research methodology and implementation of research projects and research in the professional field of animal husbandry; use the knowledge gained for the original development and application of ideas in the context of scientific research; have the ability to apply modern methods and techniques of feeding animals and the effective use of feed for animals and poultry.	Planning and modeling of the breeding process in animal husbandry
M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Planning and modeling of the breeding process in animal husbandry	PMS PZh 5216 BS	Elective subjects	5.0	(Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	1	Higher Mathematics*, Production technology of animal husbandry products	Master student's research work, including implementation of master's thesis, Research practice, Teaching practice	Knowledge of the above course will allow undergraduates, when conducting research work on animal breeding, to widely use many modern methods for analyzing the hereditary inclinations of an animal, to know the principles of operation of basic laboratory instruments and the rules for their operation, to correctly interpret the results of research and are necessary when preparing and writing a dissertation.	To collect and interpret information to form judgments in the field of research methodology and implementation of research projects and research in the professional field of animal husbandry; use the knowledge gained for the original development and application of ideas in the context of scientific research; have the ability to apply modern methods and techniques of feeding animals and the effective use of feed for animals and poultry.	Mathematical modeling in animal husbandry
M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Scientific basis for the rational feeding of farm animals	NOR KSZh 5310 AS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	1	Feeding of agricultural animals	Feeds and feed additives, Master student's research work, including implementation of master's thesis, Research methods in agricultural animals feeding, Research practice	The main essence of the study of the discipline is familiarization with scientifically based methods of drawing up feeding plans. The discipline studies the rational selection of components in the preparation of feed mixtures (fully mixed rations) based on scientific research and development of domestic and foreign scientists, modern scientific foundations for the rational feeding of agricultural animals and poultry in various climatic conditions of Kazakhstan, the scientific basis for the use of materials for the preparation and storage of feed and feeding process. Studying this subject allows monitoring the quality of the rational feeding process.	To demonstrate developing knowledge and understanding the role of energy, nutrient, biologically active and mineral substances in the body of animals and poultry; the nutritional value of feed used by animal husbandry; the physiological and productive need of all species of sex-age animals and birds in nutrient, biologically active and mineral substances; technical regulations and quality control methods on the environmental safety of feed and methods of feeding animals and birds. To demonstrate developing knowledge and understanding the state of the feed base and the levels of feeding in the livestock industry of the Republic of Kazakhstan; on modern technologies of feeding all genders and age groups of animals and birds. Know the need of animals and birds for nutrients, depending on age, physiological state and direction of productivity; modern technologies of feeding animals and birds; be able to make up the rations of feed by rational selection of fodder low at cost and not inferior in quality. To use the training skills necessary for independent continuation the modern concepts on the organization of abundant and full-fledged feed base, progressive technologies of harvesting, storage and preparation of feed for feeding, a scientifically based system of standardized feeding of farm animals, to use the data in their professional activities.	Rational feeding of agricultural animals

M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Rational feeding of agricultural animals	RKSZ h 5315 AS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	Feeding of agricultural animals	1	Feeds and feed additives, Master student's research work, including implementation of master's thesis, Research methods in agricultural animals feeding, Research practice	The discipline provides knowledge about the state of the forage base and feeding technology in the livestock sectors of the republic. Considers the basic principles of the organization of rational feeding of farm animals and poultry. Master students master modern and efficient technologies for feeding agricultural animals and poultry. The discipline studies the definition of the nutritional value of feed and feed additives in order to include them in the composition of balanced diets for feeding agricultural animals. The issues of optimizing the diets of feeding of agricultural animals in terms of usefulness and cost.	To demonstrate developing knowledge and understanding the role of energy, nutrient, biologically active and mineral substances in the body of animals and poultry; the nutritional value of feed used by animal husbandry, the physiological and productive need of all species of sex-age animals and birds in nutrient, biologically active and mineral substances; technical regulations and quality control methods on the environmental safety of feed and methods of feeding animals and birds. To demonstrate developing knowledge and understanding the state of the feed base and the levels of feeding in the livestock industry of the Republic of Kazakhstan: on modern technologies of feeding all gender and age groups of animals and birds. Know the need of animals and birds for nutrients, depending on age, physiological state and direction of productivity; modern technologies of feeding animals and birds; be able to make up the rations of feed by rational selection of fodder low at cost and not inferior in quality. To use the training skills necessary for independent continuation the modern concepts on the organization of abundant and full-fledged feed base, progressive technologies of harvesting, storage and preparation of feed for feeding, a scientifically based system of standardized feeding of farm animals, to use the data in their professional activities	Scientific basis for the rational feeding of farm animals
M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Fundamentals of scientific research	NOM I 5208 BS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	Methods of scientific researches	1	Information technologies in livestock, Master student's research work, including implementation of master's thesis, Research methods in agricultural animals feeding, Research practice	When studying the discipline, students master the stages of research work, including the choice of the direction of research, the formulation of a scientific and technical problem, and the conduct of theoretical and experimental research in animal husbandry. Master students acquire the skill of searching, accumulating and processing scientific information, as well as learning to conduct, process and formalize the results of experimental research. They master the methodological foundations of scientific research, types of research, experiment, formulation of the problem, methods of choosing and goals of the direction of scientific research, the course of scientific research, the main methodological techniques for setting up modern experiments, the form, structure and design of scientific papers. They study the basic requirements for writing articles in scientific journals indexed by the Web of Science, Scopus, and other databases.	Possess the skills: summarize the results of research and their implementation in production and apply to solve problematic issues in the modern world; scientific research methods necessary for conducting independent experiments; systems for updating knowledge in the process of professional activity, providing an active search and use of new information; methods for creating and using experimental models to describe and predict various processes	Methodology of scientific research and analysis of zootechnical experiments
M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Methodology of scientific research and analysis of zootechnical experiments	MNI AZE 5215 BS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	Methods of scientific researches	1	Information technologies in livestock, Master student's research work, including implementation of master's thesis, Research methods in agricultural animals feeding, Research practice	The content of the discipline covers the issues of setting up and conducting scientific research, registration of technical documentation; scientific activity; public speaking. Undergraduates acquire the skill of writing scientific letters, participating in scientific events and organizing them, conducting patent searches, protecting intellectual property rights, formulating goals, tasks related to the implementation of professional functions. They master the adoption of specific organizational decisions to achieve the goals and objectives, interaction with various groups and institutions of power, society, and pedagogical activities. The discipline studies the use of foreign languages to the extent necessary for the implementation of professional, research, teaching activities Instills skills in working with laws and other regulations in the field of conducting a scientific experiment, field and laboratory work.	To communicate clearly and unambiguously information, ideas, problems and solutions about current trends in the development of scientific knowledge; about current methodological and philosophical problems of science, the methodology of scientific knowledge; principles and structure of the organization of scientific activity. To collect and interpret information to form judgments in the field of research methodology and implementation of research projects and research in the professional field of animal husbandry; use the knowledge gained for the original development and application of ideas in the context of scientific research; have the ability to apply modern methods and techniques of feeding animals and the effective use of feed for animals and poultry.	Fundamentals of scientific research

M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	English for Academic Purposes	AYa DAC 5207	BS	Elective subjects	5.0	(Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	3	Foreign language (professional)	Master student's research work, including implementation of master's thesis, Teaching practice	Comprehensive theoretical and linguistic, practical and informational-analytical training in order to perform functions related to the use of a foreign language in professional and scientific activities: possession of public speaking skills, conducting discussions, the ability to work with information from various sources, edit texts of professionally significant content in a foreign language.	Present the basics of scientific research methodology. Apply the means of collecting, processing experimental data and analyzing the results. Make a review of literary information, formulate the results of business written and oral speech in the state and foreign languages	English for Academic purposes
M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Foreign language for academic purposes	ITYaD AC 5217	BS	Elective subjects	5.0	(Scientific & pedagogical direction)	Technology of production of products of stock-raising	2	1	Technological innovation of livestock products	Master student's research work, including implementation of master's thesis, Teaching practice	Use of a foreign language in professional and scientific activities, possession of public speaking skill, conducting discussions, the ability to work with information from various sources, edit texts of professionally content in a foreign language.	Present the basics of scientific research methodology. Apply the means of collecting, processing experimental data and analyzing the results. Make a review of literary information, formulate the results of business written and oral speech in the state and foreign languages	English for Academic Purposes
M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Information technologies in livestock	ITZh 6308	AS	Elective subjects	4.0	(Scientific & pedagogical direction)	Technology of production of products of stock-raising	2	1	Technological innovation of livestock products	Research practice	The discipline considers information systems in animal husbandry, regulations in the field of animal husbandry, rules for identifying farm animals, rules for subsidizing livestock breeding. Introduces the work of breeding and distribution centers. Gives the concept of Services - cattle, small ruminant, appraisal of cattle, small ruminant. Automatic work place of boniter, event planning, pedigree reporting forms, buying and selling semen on the farm. Master students master information software products for planning feeding and calculating diets based on a general methodological principle. The discipline provides skills in the use of digital technologies and software applications used in international practice for feeding control, fodder preparation, storage, formulating compound feed, in the biometric processing of the obtained scientific research results; skills in using computerized platforms and services such as https://msusheep.montana.edu (MSU Sheep Ration Program), https://www.sites.vt.edu (Ration Balancing Software: DAIR4, NRC Dairy, Spartan, CNCPS, and CPM), www.korall-agro.ru/ , https://pln.ru/ , https://ama.spbgau.ru	To apply at the professional level their knowledge, understanding the legislative and regulatory legal acts issued in our country in the prescribed manner concerning the regulation of relations in the field of livestock breeding, the history of the development of animal husbandry and the science of "Zootechny", methods of breeding new animals and their improvement, modern methods of assessing the breeding qualities of animals, the biological basis and patterns of formation of highly productive animals, modern animal gene pool and its effective use. To apply at the professional level their knowledge, understanding the program of statistical monitoring of the industry. Definition of a system of indicators characterizing the results of livestock production; know information technologies in the production of livestock products, methods for their integrated assessment and effective use, to collect and interpret information for keeping zootechnical accounting and entering into the database in the IAS, computer programming.	Digital animal husbandry

M132 - «Animal breeding»	7M08201 - «Feed and feeding of farm animals»	Full-time (MS 2 years) trimester	Digital animal husbandry	CZh 6314 AS	Elective subjects	4.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of products of stock-raising	2	1	Technological innovation of livestock products	Research practice	The discipline provides knowledge about the functional capabilities of livestock breeding subjects in the information and analytical system of livestock breeding. Master students digital technologies in the production of livestock products, methods for their comprehensive assessment and effective use, and zootechnical accounting. They master the skills of checking and controlling the entered information and planning events in the information and analytical system.	To apply at the professional level their knowledge, understanding the legislative and regulatory legal acts issued in our country in the prescribed manner concerning the regulation of relations in the field of livestock breeding, the history of the development of animal husbandry and the science of "Zootechny", methods of breeding new animals and their improvement, modern methods of assessing the breeding qualities of animals, the biological basis and patterns of formation of highly productive animals, modern animal gene pool and its effective use. To apply at the professional level their knowledge, understanding the program of statistical monitoring of the industry. Definition of a system of indicators characterizing the results of livestock production; know information technologies in the production of livestock products, methods for their integrated assessment and effective use, to collect and interpret information for keeping zootechnical accounting and entering into the database in the IAS, computer programming.	Information technologies in livestock
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The catalog of elective disciplines is approved by the "Veterinary and animal husbandry technology" Faculty Council, minutes № 1A of 27.08., 2022

Head of the department "Technology of production and processing of livestock products" *[Signature]* S. Bostanova