



CATALOG OF ELECTIVE DISCIPLINES

For students in the direction of preparation 7M082 - "Selection and reproduction of agricultural animals".

Brief description of the elective disciplines of the educational program 7M08202 - "Selection and reproduction of agricultural animals".

EPG	EP	Form of education	The name of discipline	Code of subject	Discipline cycle	Component	Number of credits	Level of training	Department	Course	Academic period	Pre-requisites	Post-requisites	Brief content of the discipline	Key learning outcomes	Name of the alternative discipline
M132 - «Animal breeding»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	English for Academic Purposes	AYaDAC 5211	BS	Elective subjects	5.0	Masters program by specialization (Scientific & pedagogical direction)	The Department of Foreign Languages	1	1	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»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Foreign language for academic purposes	IYaDAC 5220	BS	Elective subjects	5.0	Masters program by specialization (Scientific & pedagogical direction)	The Department of Foreign Languages	1	1	Foreign language (professional)	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 discussion, 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»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Integrated biotechnology in animal husbandry	IBZh 5305	AS	Elective subjects	5.0	Masters program by specialization (Scientific & pedagogical direction)	Microbiology and biotechnology	1	1	Technological innovation of livestock products	Master student's research work, including implementation of master's thesis, Research practice	During the study of the discipline "Integrated biotechnology in animal husbandry" will consider the subject and objectives of integrated biotechnology in animal husbandry. The processes of development of new directions of agricultural biotechnology, including embryo transplantation in animal husbandry, reproductive and molecular biotechnology in animal reproduction, methods of modern biotechnology in agriculture will be considered.	To demonstrate developing knowledge and understanding the problems of integrated biotechnology in animal breeding and reproduction of dairy and beef cattle, embryo transfer, methods of freezing and thawing of embryos based on the use of new choriopractic; readiness to apply the acquired knowledge in modeling, analysis, and evaluation of biotechnological processes.	Molecular genetic bases of biotechnology

M132 - «Animal breeding»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Molecular genetic basics of biotechnology	MGOB 5312	AS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Microbiology and biotechnology	I	I	Technological innovation of livestock products	Master student's research work, including implementation of master's thesis, Research practice	Application of knowledge and methods of molecular biology and genetics in the performance of scientific research; Hereditary information, composition, structure, functions and patterns of chromosomes, genes and genomes. Use the knowledge gained in genetics and animal breeding, obtaining new breeds and improving the existing qualities of farm animals. Form practical skills in working on the technology of creating recombinant DNA based on the methods of molecular biology and genetics.	Integrated biotechnology in animal husbandry
M132 - «Animal breeding»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Mathematical modeling in animal husbandry	MMZh 5210	BS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of stock-raising products	I	I	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.	Planning and modeling of the breeding process in animal husbandry
M132 - «Animal breeding»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Planning and modeling of the breeding process in animal husbandry	PMSFZh 5219	BS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of stock-raising products	I	I	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.	Mathematical modeling in animal husbandry
M132 - «Animal breeding»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Fundamentals of scientific research	NOMI 5209	BS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Technology of production of stock-raising products	I	I	Fundamentals of scientific research	Information technologies in livestock, Master student's research work, including implementation of master's thesis, 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.	Methodology of scientific research and analysis of zootechnical experiments

M132 - «Animal breeding»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Methodology of scientific research and analysis of zootechnical experiments	MNI/AZE 5218	ES	Elective subjects	5.0	Masters program by specialization (Scientific & pedagogical direction)	Technology of production of products of stock-raising	1	1	Fundamentals of scientific research	Information technologies in livestock, Master student's research work, including implementation of master's thesis, Research practice	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://msusheepstation.montana.edu (MSU Sheep Station Program), https://www.sites.exst.vt.edu (Ration Balancing Software: DAIR4, NRC Dairy, Spartan, CNCPS, and CPW), www.korall-agro.ru/ , https://plmor.ru , https://ama.spbgau.ru	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.	Information technologies in livestock, Master student's research work, including implementation of master's thesis, Research practice	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»	7M08202 - «Selection and reproduction of agricultural animals»	Full-time (MS 2 years) semester	Digital animal husbandry	CZH 6311	AS	Elective subjects	5.0	Masters program by specialization (Scientific & pedagogical direction)	Technology of production of products of stock-raising	2	1	Fundamentals of scientific research	Information technologies in livestock	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.	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.	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
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The catalog of elective disciplines is approved by the "Veterinary and animal husbandry technology" Faculty Council, minutes № 1A of 28.08, 2023

Acting Head of the department "Technology of production and processing of livestock products"  D. B. Bayev