NJSC SHAKARIM UNIVERSITY OF SEMEY

EDUCATIONAL PROGRAM

7M08 - Agriculture and bioresources
(Code and classification of the field of education)

7M082 - Animal production
(Code and classification of the direction of training)

0811
(Code in the International Standard Classification of Education)

M132 - Livestock
(Code and classification of the educational program group)

7M08201 - Technology of livestock products production
(Code and name of the educational program)

Master
(Level of preparation)

Semey

Educational program

7M08 - Agriculture and bioresources
(Code and classification of the field of education)

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(Code in the International Standard Classification of Education)

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Master
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Semey 2023

PREFACE

Developed

The educational program 7M08201 - Technology of livestock products production in the direction of preparation 7M082 - Animal production on the basis of the State Compulsory Standards of Higher and Postgraduate Education approved by the Order of the Ministry of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No 2 (as amended by the order) was developed by the Academic Committee dated 20.02.2023 No 66).

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Reviewing

Full name of the reviewer	Position, place of work	Signature
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Reviewed

At the meeting of the Commission on Quality Assurance of Veterinary Medicine and Agricultural Management
Recommended for approval by the Academic Council of the University
Protocol № 4.1 "06" April 2023
Chairman of the Commission G.I. Dzhamanova

Approved at the meeting of the Academic Council of the University Protocol No. 8 "25" April 2023.

Approved

at the meeting of the Academic Council of the University
Protocol № 1 "01" of September 2023
Chairman of the Academic Council of the University Orynbekov D.R.

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1.Introduction

1.1.General data

The educational program 7M08201 -Technology of animal products production , implemented by the Department of Agriculture and Bioresources of the Faculty of Veterinary and Agricultural Management of Semey Shakarim University, was developed taking into account the needs of the regional labor market, the requirements of regulatory documents of the Ministry of Science and Higher Education of the Republic of Kazakhstan and is a system of documents for the organization of the educational process.

The educational program regulates the goals, expected results, content, conditions and technologies for the implementation of the educational process, assessment of the quality of graduate training in this area of training and contains characteristics of the program and areas of professional activity of the graduate, learning outcomes and acquired competencies, the policy of evaluating learning outcomes, the organization of the educational process that ensures the quality of training of students, description of the modules that make up the educational program. the program.

The content of the educational program is implemented through a curriculum developed in a modular format, in which two cycles of disciplines are provided for the first level of education: basic and profile disciplines, as well as additional types of training and final certification.

1.2.Completion criteria

The main criterion for the completion of the educational process for the preparation of masters is the mastering by students of at least 88 credits of theoretical education, incl. 6 credits for teaching and 13 credits for research practice, as well as at least 24 credits for masters research work, at least 8 credits for final certification (registration and defense of masters thesis). A total of 120 credits.

1.3.Typical study duration: 2 years.

2.PASSPORT OF THE EDUCATIONAL PROGRAM

2.1.EP purpose	Formation at undergraduates of general professional and professional competencies in accordance with the requirements of the labor market and employers, standards in this area of master training.
2.2.Map of the training profile within the educational program	
Code and classification of the field of education	7M08 - Agriculture and bioresources
Code and classification of the direction of training	7M082 - Animal production
Code in the International Standard Classification of Education	0811
Code and classification of the educational program group	M132 - Livestock
Code and name of the educational program	7M08201 - Technology of livestock products production
2.3.Qualification characteristics of the graduate	
Degree awarded / qualification	Master of Agricultural Sciences under the educational programme 7M08201 - Technology of production of livestock products
Name of the profession / list of positions of a specialist	- Inspector for the assessment of livestock products; -Zootechnician - breeder in pedigree plants, pedigree farms and collective farms, joint stock companies, production cooperatives, complexes, poultry farms and hippodromes; - breeding inspector; -technologist-manager of the organization of production of livestock products; - head of collective farms and agricultural firms; - teaching activities in higher educational institutions and colleges; - manager for the organization of production of livestock products.
OQF qualification level (industry qualification framework)	7
Area of professional activity	- technology of production of animal products; - primary processing in farms of various forms of ownership; - organization and sale of livestock products; - conduct of selection and tribal work; -organization of export and import of animal products.
Object of professional activity	-all species of agricultural animals, domestic and commercial animals, birds, beasts, bees, fish; - technological processes of production and primary processing of livestock products; - feed and feed additives; - technological processes of their production; - higher educational institutions and colleges.
Types of professional activity	Organizational and technological activities: -provision of rational maintenance, feeding and breeding of animals on the basis of in-depth knowledge of the profile of the specialty; -organization, planning with modern technologies for the production of livestock products; -control in the production system of high-quality environmentally friendly livestock and poultry products

	while reducing their cost; - measures for the prevention and protection of internal non-infectious diseases of animals, feed toxins, infectious and non-infectious diseases with modern technology of livestock and poultry farming; preparation and assessment of the quality of feed and rationed feeding of individual species and groups of animals and birds. Production and management activities: - zootechnical and breeding registration of animals; breeding, genetic analysis; marketing and sales of livestock products. Project activities: - development of new technological solutions to improve the efficiency of animal husbandry. -development and preparation of breeding and breeding plans, participation in the development of design estimates for the construction of livestock and poultry facilities. Research activities: -conducting independent research using the latest methodologies and analyzing their results; -creation, improvement of breeds of different types of farm animals; -calculation of biometric indicators characterizing the variability of quantitative and qualitative economically useful traits, heritability, the relationship between them, the origin of animals by types of proteins and blood groups; -analysis of the composition of feed, water, development of technology for the procurement, storage and use of different types of feed. Educational (pedagogical) activities: - pedagogical activity in secondary vocational and higher educational institutions according to the profile of the specialty.
Graduate Model	A person who, as a highly qualified specialist in accordance with the requirements of the modern labor market, has mastered the necessary for the professional development of agriculture and professional competencies and was able to form these competencies. He is also a versatile specialist in agriculture, adapted to the development of information in the direction of modern technologies in animal husbandry.

3.Modules and content of the educational program

Sociolinguistic and scientific-pedagogical activities

Foreign language (professional)

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	28105 (3011977)
Course	1
Term	1
Credits count	3
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	20hours
Independent work of the student	40hours
Total	90hours
Knowledge control form	Examination

Short description of discipline

Mastery of general cultural, professional and special competencies for the implementation of professional activities, involving teaching free reading of original literature of the relevant branch of knowledge in a foreign language; development of oral communication skills in monological and dialogical form in the specialty; development of written scientific communication skills on topics related to the scientific work of a graduate student, as well as familiarization with the forms and types of international cooperation in the scientific field.

Purpose of studying of the discipline

The purpose of studying the discipline "Foreign language (professional)" in the master`s degree program is the systematic deepening of communicative competence within the framework of international standards of foreign language education on the basis of further development of skills and abilities of active language proficiency in the professional activity of the future master.

Learning Outcomes

ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Prerequisites

Bachelor

Postrequisites

Final examination

History and philosophy of science

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29031 (3011978)
Course	1
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	35hours
Independent work of the student	70hours
Total	150hours
Knowledge control form	Examination

Short description of discipline

The discipline is aimed at studying the culture of scientific thinking, forms analytical capabilities and research skills, provides theoretical and practical knowledge necessary for a future scientist. Explores the historical evolution of the sciences and the philosophical perspectives they form. The origins of modern science, its social and institutional connections are described. General philosophical issues related to thought experiments, confirmation and refutation of theories, the origin and application of quantitative and high-quality research methods are considered.

Purpose of studying of the discipline

the formation of an interdisciplinary worldview among undergraduates, based on a deep understanding of the history and philosophy (theory) of scientific thinking, as part of a universal culture.

Learning Outcomes

ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Prerequisites

Bachelor

Postrequisites

The research work of a student, including an internship and the implementation of a masters thesis I

Organization and planning of research

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	28462 (3011982)

Course	1
Term	1
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
Formation of knowledge and skills of organization and planning of scientific research. The course of this discipline considers: topics, goals and objectives of scientific research; how to search, accumulate and process scientific information, analyze theoretical and experimental research and formulate conclusions and proposals; registration of experimental research results; implementation and effectiveness of scientific research, as well as rules for registration and protection of research results.

Purpose of studying of the discipline
Development of skills and abilities of a master`s student in planning and organizing research work

Learning Outcomes
ON3 Evaluate and choose the means and methods of scientific research, plan the process of conducting scientific research.

Prerequisites
Methodology of scientific-research work

Postrequisites
The research work of a student, including an internship and the implementation of a masters thesis I

Tertiary education

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29033 (3011980)
Course	1
Term	1
Credits count	3
Lections	15hours
Practical and seminar classes	15hours
Independent work of a student under the guidance of a teacher	20hours
Independent work of the student	40hours
Total	90hours
Knowledge control form	Examination

Short description of discipline
The course is aimed at studying the main directions, principles and patterns of higher education. During the course of the course, the basic concepts of modern pedagogy, concepts and theories of teaching and upbringing, didactics of higher education will be considered. The master`s student will master the skills of designing the organization of the educational process, techniques of individual and group reflection, will be able to correctly formulate pedagogical goals, apply educational technologies in the educational process. in the process, to design work programs of disciplines.

Purpose of studying of the discipline
The purpose of mastering the discipline is to master the system of knowledge about higher education, its content, structure, principles of educational process management and mastering modern technologies in the field of management and organization of the educational process

Learning Outcomes
ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Prerequisites
Bachelor

Postrequisites
Teaching practicum

Psychology of management

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29032 (3011979)
Course	1
Term	1
Credits count	3
Lections	15hours
Practical and seminar classes	15hours
Independent work of a student under the guidance of a teacher	20hours
Independent work of the student	40hours

Total	90hours
Knowledge control form	Examination

Short description of discipline
The content of the course is aimed at mastering the approaches and directions of management psychology, psychological laws of management, features of planning and solving management problems. Students will get acquainted with the psychological methods of resolving conflict situations, master the ways of motivating work, the methods of using effective management styles. Skills will be formed to analyze the psychological causes underlying the decline in the effectiveness of the management process.

Purpose of studying of the discipline
The purpose of the discipline "Psychology of Management" is the formation of scientifically based ideas about the system of mental phenomena, psychological variables of behavior and conscious human activity in modern conditions and allows undergraduates to form skills of applying the acquired psychological knowledge in educational activities

Learning Outcomes
ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Prerequisites
Bachelor

Postrequisites
The research work of a student, including an internship and the implementation of a masters thesis I

Teaching practicum

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29043 (3011954)
Course	2
Term	1
Credits count	6
Pedagogical practics	180hours
Total	180hours
Knowledge control form	Total mark on practice

Short description of discipline
Work with methodological literature necessary for teaching an academic discipline. The choice of methods and means of teaching the discipline. The content of the educational material, taking into account the characteristics of students. Planning the cognitive work of students and demonstrating the ability to organize it

Purpose of studying of the discipline
Familiarity with the specific conditions of professional pedagogical activity, consolidation and deepening of theoretical knowledge of the undergraduate and the acquisition of practical skills and competencies in the field of professional activity

Learning Outcomes
ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Prerequisites
Tertiary education

Postrequisites
Research scientific training

Modern technologies in animal husbandry

Information management systems in animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	28464 (3011956)
Course	1
Term	1
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline
Formation of knowledge for working with information and control systems used in animal husbandry. The discipline is aimed at studying information management in animal husbandry, knowledge of specialized software for agribusiness, mastery of multifunctional information and control systems in the agro-industrial complex ("IAS", "ISH"). The SELEX system (breeding, economics, system) includes subroutines for optimizing breeding, veterinary and preventive work, feed use, optimization of technology in animal husbandry, etc.

Purpose of studying of the discipline
To teach undergraduates to apply modern information technologies for the collection and analysis of primary zootechnical data of breeding work in animal husbandry

Learning Outcomes

ON2 Apply information and communication technologies in animal husbandry.

Prerequisites

Bachelor

Postrequisites

Innovative technologies of livestock products

Information technology in animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	28463 (3011955)
Course	1
Term	1
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline

Formation of knowledge for the use of information technologies in the management of zootechnical and veterinary preventive work, control of the productivity of the dairy herd, calculation and analysis of operational and technological indicators of the farm, analysis of animal husbandry technologies. The latest achievements of science in the development of technology for the production of animal products using information technology and the processing of research results, the correct use of information on the subject under study on the global Internet are considered.

Purpose of studying of the discipline

Mastering by undergraduates of modern information technologies used in animal husbandry.

Learning Outcomes

ON2 Apply information and communication technologies in animal husbandry.

Prerequisites

Bachelor

Postrequisites

Innovative technologies of livestock products

Computer modeling in animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29029 (3011975)
Course	1
Term	1
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline

The formation of knowledge on the basics of computer modeling in the production of animal products involves the use of various technologies. The discipline examines the types and types of models, the structure of the modeling process, the role of models in the study of complex systems, the systematization and classification of models, the basic methods of constructing and analyzing model systems in animal husbandry, computer modeling in simulation programs MatLab and MathCAD

Purpose of studying of the discipline

Training of undergraduates in methods of modern assessment of breeding qualities of animals and the formation of competencies necessary for methodological approaches to the analysis, planning and modeling of the breeding process in animal husbandry to increase its effectiveness

Learning Outcomes

ON2 Apply information and communication technologies in animal husbandry.

Prerequisites

Bachelor

Postrequisites

Innovative technologies of livestock products

Research technique in animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives

SubjectID	29030 (3011958)
Course	1
Term	1
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
The course is aimed at mastering knowledge and practical skills in conducting scientific research in animal husbandry. The general methodology of conducting scientific research, specific methodological techniques and methods of setting up zootechnical experiments on various types of farm animals, planning and conducting an experiment, logical analysis of the results of experience and drawing conclusions, stages of introducing research work into agricultural production are considered.

Purpose of studying of the discipline
The study of theoretical knowledge and practical skills in the organization and conduct of scientific research in animal husbandry using modern methods of setting zootechnical experiments

Learning Outcomes
ON3 Evaluate and choose the means and methods of scientific research, plan the process of conducting scientific research.

Prerequisites
Bachelor

Postrequisites
Modern technologies in production of poultry farms

Methodology of scientific-research work

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29028 (3011957)
Course	1
Term	1
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
The discipline is aimed at mastering knowledge when choosing the means and methodology of scientific research: treatment, familiarization, direct use, its reproduction and production of new knowledge. The course examines philosophical aspects, methodological foundations of scientific knowledge, structures and main stages of scientific research, methodology of theoretical and experimental research, modeling issues in scientific research and helps to choose the right direction of scientific research.

Purpose of studying of the discipline
Mastering the basics of logical thinking necessary for the organization and implementation of research activities

Learning Outcomes
ON3 Evaluate and choose the means and methods of scientific research, plan the process of conducting scientific research.

Prerequisites
Bachelor

Postrequisites
Modern technologies in production of poultry farms

The use of modern information systems in the compil

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29042 (3011981)
Course	1
Term	2
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours

Knowledge control form	Examination

Short description of discipline
Formation of theoretical knowledge and practical skills about modern information technologies in animal feeding, feed evaluation and preparation of feeding rations. The history of the development of information technologies and systems, computer networks and telecommunications, the security of information technologies, the use of modern information systems in the preparation of feeding rations by animal species (sheep, cattle, horses, pigs, poultry) is considered.

Purpose of studying of the discipline
The use of modern scientific achievements in the field of feeding farm animals to increase productivity, reproductive capacity, environmental cleanliness and profitability of manufactured products

Learning Outcomes
ON5 Apply advanced technologies in the preparation of feeding rations, feed evaluation and animal feeding.

Prerequisites
Methodology of scientific-research work

Postrequisites
Modern technology of production of meat and milk cattle

Feeding fur animals

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29037 (3011962)
Course	1
Term	2
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline
This discipline studies the organization of full-fledged feeding of fur-bearing animals with cellular content. The ways and means of eliminating the most acute problems are considered, using progressive feeding systems for predatory fur-bearing animals and rodents. Familiarization with the characteristics of feed products, compound feeds concentrates, dry type of feeding, the need of fur-bearing animals in minerals and vitamins, preparation and storage of feed.

Purpose of studying of the discipline
Formation of undergraduates` holistic view of the main objects of animal husbandry, various conditions of their maintenance and feeding, the specifics of ration preparation, breeding work in animal husbandry

Learning Outcomes
ON5 Apply advanced technologies in the preparation of feeding rations, feed evaluation and animal feeding.

Prerequisites
Research technique in animal husbandry

Postrequisites
Modern technology of production of meat and milk cattle

Methods of breeding to increase the productivity of poultry

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29035 (3011960)
Course	1
Term	2
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
Formation of knowledge and skills of organization and planning of scientific research. The course of this discipline considers: topics, goals and objectives of scientific research; how to search, accumulate and process scientific information, analyze theoretical and experimental research and formulate conclusions and proposals; registration of experimental research results; implementation and effectiveness of scientific research, as well as rules for registration and protection of research results.

Purpose of studying of the discipline
Formation of theoretical knowledge and practical skills of undergraduates necessary for the rational organization of technological processes of poultry meat production at poultry enterprises of industrial type

Learning Outcomes

ON7 Apply technologies to improve the gene pool of animals and birds.

Prerequisites

Methodology of scientific-research work

Postrequisites

Current problems of animal husbandry

Evaluation of the nutritional value of feed

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29038 (3011963)
Course	1
Term	2
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline

The discipline is aimed at scientific substantiation and practical application of progressive methods of increasing the nutritional value of feed. The process of preparing feed for analysis, methods for determining nutritional value and organoleptic evaluation of feed are considered. Analysis of the nutritional value of feed by chemical composition, energy and nutritional value, determination of their quality, taking into account the requirements of GOST standards, is carried out on modern devices and equipment.

Purpose of studying of the discipline

Formation of knowledge on the assessment of the nutritional value of feed, the biological foundations of full nutrition of animals and methods of its control, training in ways of organizing physiologically sound, standardized and cost-effective animal feeding

Learning Outcomes

ON5 Apply advanced technologies in the preparation of feeding rations, feed evaluation and animal feeding.

Prerequisites

Methodology of scientific-research work

Postrequisites

Modern technology of production of meat and milk cattle

Breeding business at increase of productivity of animals

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29036 (3011961)
Course	1
Term	2
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline

Formation of knowledge and practical use of the law of correlative variability, conjugacy of breeding characteristics in increasing the productivity of animals. The nature of the relationship between individual traits in the process of breeding work is considered; purposeful selection and selection of animals that combine negatively correlating traits well; in-depth breeding work to obtain high-quality breeding animals; the main forms of breeding work in purebred breeding; organization and planning of breeding work.

Purpose of studying of the discipline

Formation of theoretical knowledge and practical skills of undergraduates necessary for the rational organization of technological processes for the production of poultry eggs at poultry enterprises of industrial type

Learning Outcomes

ON7 Apply technologies to improve the gene pool of animals and birds.

Prerequisites

Methodology of scientific-research work

Postrequisites

Current problems of animal husbandry

Modern technologies in production of poultry farms

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29039 (3011964)

Course	1
Term	2
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
Formation of knowledge and practical skills on herd reproduction to ensure the modern level of production of eggs and poultry meat. The article considers an industrial herd of laying hens and broilers with certain genetic makings capable of ensuring high production performance of the enterprise; modern technologies that ensure the extension of the period of use of poultry; technological lines in feeding, watering, growing, production of eggs and poultry meat; mechanization and automation systems at poultry farms.

Purpose of studying of the discipline
Formation of knowledge and skills among undergraduates to ensure rational cultivation, maintenance and full-fledged feeding of poultry of various species, production of poultry products using achievements in the field of industry innovations

Learning Outcomes
ON6 To offer highly effective technologies for increasing the productivity of animals and poultry, to analyze the main methods for determining the quality of livestock products.

Prerequisites
Research technique in animal husbandry

Postrequisites
Current problems of animal husbandry

Modern technologies for the production of meat and milk

Innovative technologies of livestock products

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	29040 (3011965)
Course	1
Term	2
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	35hours
Independent work of the student	70hours
Total	150hours
Knowledge control form	Examination

Short description of discipline
This discipline studies innovative production technologies in various branches of animal husbandry. Highly efficient technologies of herd reproduction, artificial insemination and rearing of young animals of all types of farm animals; new technologies for various systems and methods of feeding and keeping animals; ways to increase the productivity of animals and poultry through the use of new breeding and industrial technologies are considered.

Purpose of studying of the discipline
To acquaint undergraduates with innovative technologies in the field of animal husbandry and poultry farming, namely, increasing production output, ways to improve quality and the ability to compete in a market economy with innovative technologies of growth and development

Learning Outcomes
ON6 To offer highly effective technologies for increasing the productivity of animals and poultry, to analyze the main methods for determining the quality of livestock products.

Prerequisites
Information technology in animal husbandry

Postrequisites
Modern technologies of production of sheep products

The research work of a student, including an internship and the implementation of a masters thesis I

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	29041 (3011972)
Course	1
Term	2
Credits count	11

The research work	330hours
Total	330hours
Knowledge control form	Total mark on practice

Short description of discipline
A detailed review of the literature on the topic of dissertation research Collection of factual material for dissertation work, including the development of data collection methodology, methods of processing results, assessment of their reliability and sufficiency to complete the work on the dissertation.

Purpose of studying of the discipline
Development of the master`s student`s ability and practical skills of independent implementation of scientific research related to the solution of complex scientific and design-technological tasks in the field of training in innovative conditions

Learning Outcomes
ON7 Apply technologies to improve the gene pool of animals and birds.

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
The research work of a student, including an internship and the implementation of a masters thesis II

Current problems of animal husbandry

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	29052 (3011976)
Course	2
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	35hours
Independent work of the student	70hours
Total	150hours
Knowledge control form	Examination

Short description of discipline
The discipline is aimed at studying modern problems of animal husbandry in the Republic of Kazakhstan and the world, special attention is paid to environmental problems and marketing activities in animal husbandry. The following are considered: a closed cycle of production of animal products and the sale of products by the manufacturer; DNA technologies in the breeding of farm animals; genomic data in poultry breeding; computerization of breeding work and production of animal products.

Purpose of studying of the discipline
Formation of theoretical and practical skills on topical issues of zootechnical science and production, improvement of technological processes for the production of livestock products in farms of various forms of ownership

Learning Outcomes
ON7 Apply technologies to improve the gene pool of animals and birds.

Prerequisites
Modern technologies in production of poultry farms

Postrequisites
Research scientific training

Innovative technologies for primary processing of milk

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29046 (3011967)
Course	2
Term	1
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline
The discipline is aimed at studying the basic and innovative technologies of primary milk processing. The methods of determining the quality of milk, methods of storage and transportation, pasteurization of milk in modern conditions, waste- free technology of milk processing, processing of all by-products (skimmed milk, buttermilk, whey) into quality products, veterinary and sanitary examination of milk, standardization and certification of milk, environmental problems in milk processing are considered.

Purpose of studying of the discipline
Formation of necessary theoretical and practical knowledge among undergraduates and acquisition of skills and abilities in the field of

primary milk processing technology, the ability to use regulatory and technical documentation

Learning Outcomes

ON8 To develop new technologies in the breeding of farm animals and poultry, to investigate and evaluate the breeding and economic purpose of animals.

Prerequisites

The use of modern information systems in the compil

Postrequisites

Research scientific training

Crossbred sheep breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29049 (3011970)
Course	2
Term	1
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline

Formation of scientifically-based ideas about modern technologies in crossbred sheep breeding. The discipline considers: the history of the emergence of semi-fine crossbred sheep breeding; breeding work in crossbred sheep breeding; factory lines and breeding groups; breeding of meat and wool breeds with crossbred wool; methods of comprehensive assessment and techniques of wool research, production classification and procurement standards for wool; economic significance and prospects for the development of crossbred sheep breeding.

Purpose of studying of the discipline

The formation of undergraduates` skills in assessing the productive and breeding qualities of crossbred sheep, the use of breeding methods, the development of breeding work plans, the use of modern technologies for the production of sheep products

Learning Outcomes

ON4 To develop methods of comprehensive assessment and effective use of modern biologically based technologies for the production of animal products.

Prerequisites

Innovative technologies of livestock products

Postrequisites

Research scientific training

The research work of a student, including an internship and the implementation of a masters thesis II

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	29050 (3011973)
Course	2
Term	1
Credits count	4
The research work	120hours
Total	120hours
Knowledge control form	Total mark on practice

Short description of discipline

A detailed review of the literature on the topic of dissertation research Collection of factual material for dissertation work, including the development of data collection methodology, methods of processing results, assessment of their reliability and sufficiency to complete the work on the dissertation.

Purpose of studying of the discipline

Development of the master`s student`s ability and practical skills of independent implementation of scientific research related to the solution of complex scientific and design-technological tasks in the field of training in innovative conditions

Learning Outcomes

ON7 Apply technologies to improve the gene pool of animals and birds.

Prerequisites

The research work of a student, including an internship and the implementation of a masters thesis I

Postrequisites

The research work of a student, including an internship and the implementation of a masters thesis III

Modern technology of production of meat and milk cattle

Discipline cycle	Profiling discipline

Discipline component	Electives
SubjectID	29045 (3011966)
Course	2
Term	1
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline
The discipline is aimed at studying modern ways and methods of improving the productive and breeding qualities of cattle, the organization and management of modern technological processes in cattle breeding. The organization and systems of milk production, specialization of dairy cattle breeding, the essence of milk production technology, modern technology of beef cattle cultivation, methods of intensive fattening, specialized beef cattle breeding, its productive, economic and technological features are considered

Purpose of studying of the discipline
To familiarize undergraduates with innovative technologies in the field of animal husbandry, namely in the production of meat and milk of cattle, ways to improve quality and the ability to compete in a market economy

Learning Outcomes
ON6 To offer highly effective technologies for increasing the productivity of animals and poultry, to analyze the main methods for determining the quality of livestock products.

Prerequisites
The use of modern information systems in the compil

Postrequisites
Research scientific training

Modern technologies of production of sheep products

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29048 (3011969)
Course	2
Term	1
Credits count	7
Lections	30hours
Practical and seminar classes	30hours
Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
The discipline is aimed at mastering modern technologies for the production of sheep products. The course examines: the current state of the global sheep gene pool, effective technologies for the production of meat, wool, milk; production of sheep products on an industrial basis using progressive intensive technologies, assessment of the quality of fur, fur and leather, smush products in modern conditions; methods of accounting for the productivity of the main and by-products of sheep breeding.

Purpose of studying of the discipline
In-depth study by undergraduates of the state of sheep breeding in our country and abroad, biological and economic characteristics of sheep, rational use of sheep to obtain environmentally friendly products at the lowest cost

Learning Outcomes
ON6 To offer highly effective technologies for increasing the productivity of animals and poultry, to analyze the main methods for determining the quality of livestock products.

Prerequisites
Innovative technologies of livestock products

Postrequisites
Research scientific training

Modern technology for the production of pig products

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29044 (3011959)
Course	2
Term	1
Credits count	7
Lections	30hours
Practical and seminar classes	30hours

Independent work of a student under the guidance of a teacher	50hours
Independent work of the student	100hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
Formation of knowledge about the production of pig products on an industrial basis. The following are considered: concentration and specialization; complex mechanization and automation of labor processes; scientific organization and specialization of labor; creation of highly productive animals suitable for intensive use in specific conditions of detention; full and uniform provision of full-fledged feed in the assortment; effective use of feed products through the use of balancing additives and substitutes of industrial production

Purpose of studying of the discipline
Formation of undergraduates` skills in assessing the productive and breeding qualities of sheep, maintaining documentation on zootechnical accounting, planning the production of wool and mutton, developing breeding programs

Learning Outcomes
ON4 To develop methods of comprehensive assessment and effective use of modern biologically based technologies for the production of animal products.

Prerequisites
Innovative technologies of livestock products

Postrequisites
Research scientific training

Beef primary processing technologies

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	29047 (3011968)
Course	2
Term	1
Credits count	8
Lections	30hours
Practical and seminar classes	45hours
Independent work of a student under the guidance of a teacher	55hours
Independent work of the student	110hours
Total	240hours
Knowledge control form	Examination

Short description of discipline
This discipline studies modern technologies of primary processing of cattle meat. The technologies of cattle slaughter, storage and transportation of carcasses, factors affecting the slaughter and meat productivity of livestock, innovative trends in the development of technologies and equipment for slaughter and primary processing of cattle, including resource-saving technologies for processing by-products, are considered.

Purpose of studying of the discipline
Formation of theoretical knowledge and practical skills of undergraduates in the field of process control at all stages of production – from the receipt of raw meat to the sale of finished products

Learning Outcomes
ON8 To develop new technologies in the breeding of farm animals and poultry, to investigate and evaluate the breeding and economic purpose of animals.

Prerequisites
The use of modern information systems in the compil

Postrequisites
Research scientific training

Research scientific training

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	29054 (3011971)
Course	2
Term	2
Credits count	13
Working practice	390hours
Total	390hours
Knowledge control form	Total mark on practice

Short description of discipline
Analyzes and critically evaluates the results of its own scientific research. Identifies scientific priorities, as well as formulates actual scientific tasks and problems. Substantiates and formulates the relevance, theoretical and practical significance of the chosen topic of scientific research.

Purpose of studying of the discipline
Formation and development of professional knowledge among undergraduates in the field of their chosen specialty, consolidation of theoretical knowledge gained in the disciplines of the direction and special disciplines of the master`s program, mastering the necessary

professional competencies in the chosen direction of specialized training

Learning Outcomes

ON3 Evaluate and choose the means and methods of scientific research, plan the process of conducting scientific research.

Prerequisites

The research work of a student, including an internship and the implementation of a masters thesis II

Postrequisites

Final examination

The research work of a student, including an internship and the implementation of a masters thesis III

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	29058 (3011974)
Course	2
Term	2
Credits count	9
The research work	270hours
Total	270hours
Knowledge control form	Total mark on practice

Short description of discipline

A detailed review of the literature on the topic of dissertation research Collection of factual material for dissertation work, including the development of data collection methodology, methods of processing results, assessment of their reliability and sufficiency to complete the work on the dissertation.

Purpose of studying of the discipline

Development of the master`s student`s ability and practical skills of independent implementation of scientific research related to the solution of complex scientific and design-technological tasks in the field of training in innovative conditions

Learning Outcomes

ON6 To offer highly effective technologies for increasing the productivity of animals and poultry, to analyze the main methods for determining the quality of livestock products.

Prerequisites

The research work of a student, including an internship and the implementation of a masters thesis II

Postrequisites

Final examination

Final Certification

Master`s dissertation

Credits count	8

4.Summary table on the scope of the educational program
«7M08201 - Technology of livestock products production»

Name of discipline	Cycle/ Component	Term	Number of credits	Total hours	Lec	SPL	LC	IWST	IWS	Knowledge control form
Sociolinguistic and scientific-pedagogical activities										
Foreign language (professional)	BS/US	1	3	90		30		20	40	Examination
History and philosophy of science	BS/US	1	5	150	15	30		35	70	Examination
Organization and planning of research	BS/CCh	1	7	210	30	30		50	100	Examination
Tertiary education	BS/US	1	3	90	15	15		20	40	Examination
Psychology of management	BS/US	1	3	90	15	15		20	40	Examination
Teaching practicum	BS/US	3	6	180						Total mark on practice
Modern technologies in animal husbandry										
Information management systems in animal husbandry	BS/CCh	1	8	240	30	45		55	110	Examination
Information technology in animal husbandry	BS/CCh	1	8	240	30	45		55	110	Examination
Computer modeling in animal husbandry	BS/CCh	1	8	240	30	45		55	110	Examination
Research technique in animal husbandry	BS/CCh	1	7	210	30	30		50	100	Examination
Methodology of scientific-research work	BS/CCh	1	7	210	30	30		50	100	Examination
The use of modern information systems in the compil	AS/CCh	2	8	240	30	45		55	110	Examination
Feeding fur animals	AS/CCh	2	8	240	30	45		55	110	Examination
Methods of breeding to increase the productivity of poultry	AS/CCh	2	7	210	30	30		50	100	Examination
Evaluation of the nutritional value of feed	AS/CCh	2	8	240	30	45		55	110	Examination
Breeding business at increase of productivity of animals	AS/CCh	2	7	210	30	30		50	100	Examination
Modern technologies in production of poultry farms	AS/CCh	2	7	210	30	30		50	100	Examination
Modern technologies for the production of meat and milk										
Innovative technologies of livestock products	AS/US	2	5	150	15	30		35	70	Examination
The research work of a student, including an internship and the implementation of a masters thesis I	AS/US	2	11	330						Total mark on practice
Current problems of animal husbandry	AS/US	3	5	150	15	30		35	70	Examination
Innovative technologies for primary processing of milk	AS/CCh	3	8	240	30	45		55	110	Examination
Crossbred sheep breeding	AS/CCh	3	7	210	30	30		50	100	Examination
The research work of a student, including an internship and the implementation of a masters thesis II	AS/US	3	4	120						Total mark on practice
Modern technology of production of meat and milk cattle	AS/CCh	3	8	240	30	45		55	110	Examination

Modern technologies of production of sheep products	AS/CCh	3	7	210	30	30		50	100	Examination
Modern technology for the production of pig products	AS/CCh	3	7	210	30	30		50	100	Examination
Beef primary processing technologies	AS/CCh	3	8	240	30	45		55	110	Examination
Research scientific training	AS/US	4	13	390						Total mark on practice
The research work of a student, including an internship and the implementation of a masters thesis III	AS/US	4	9	270						Total mark on practice
Final Certification										
Master`s dissertation		4	8	240						