NJSC SHAKARIM UNIVERSITY OF SEMEY

EDUCATIONAL PROGRAM

6B08 - Agriculture and bioresources
(Code and classifcation of the feld of education)

6B082 - Animal production
(Code and classifcation of the direction of training)

0811
(Code in the International Standard Classifcation of Education)

B078 - Livestock
(Code and classifcation of the educational program group)

6B08201 - Technology of livestock products production
(Code and name of the educational program)

Bachelor
(Level of preparation)

Semey

Educational program

6B08 - Agriculture and bioresources
(Code and classification of the field of education)

6B082 - Animal production
(Code and classification of the direction of training)

0811
(Code in the International Standard Classification of Education)

B078 - Livestock
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6B08201 - Technology of livestock products production
(Code and name of the educational program)

bachelor
(Level of preparation)

Semey 2023

PREFACE

Developed

The educational program 6B08201 - Technology of livestock products production in the direction of preparation 6B082 - 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).

Members of the Academic Committee	Full name	Academic degree, academic title, position	Signature
Head of the Academic Committee	Yessengulova Nurlygul	Dean of the Faculty of Veterinary and Agricultural Management	
Educational program manager	Nussupov Amanzhan	Senior lecturer of the Department "Agriculture and Bioresources"	
Member of the AC	Nurzhanova Kulsara	Head of the Department of Agriculture and Bioresources	
Member of the AC	Akhmetova Balnur	Senior lecturer of the Department of Agriculture and Bioresources	
Member of the AC	Gurovsky Vladimir	Chief zootechnician of the farm "Zarya" of the Shemonaikhinsky district of the East Kazakhstan region	
Member of the AC	Kamzin Yersin	Abai region, Semey, SEC Director	
Member of the AC	Semeybekova Almira	Student of the group TJ-021	
Member of the AC	Akhmetbekov Bekzhan	Student of the group TJ-101	

Reviewing

Full name of the reviewer	Position, place of work	Signature
Kopirbayev A.	Director of Ushbik LLP	

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 Jamanova G.

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.

Content

1.Introduction

1.1.General data

The educational program "Technology of animal products production", implemented by the Department "Agriculture and Bioresources" of the Faculty of Veterinary Medicine and Agricultural Management of the NAO "Shakarim Semey 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 three cycles of disciplines are provided for the first level of education: a cycle of general education disciplines, a cycle of basic disciplines and a cycle of profile disciplines, as well as additional types of training and final certification.

The educational program provides for the training of a student with special educational needs in a higher educational institution, as well as his socialization and integration into society.

1.2.Completion criteria

The main criterion for the completion of the educational process for the preparation of bachelors is the development by students of at least 205 credits of theoretical training, as well as at least 27 credits of practice, 8 credits of final certification.

Total 240 credits.

1.3.Typical study duration: 4 years.

2.PASSPORT OF THE EDUCATIONAL PROGRAM

2.1.EP purpose	Training of competent and competitive agricultural specialists who possess modern technologies for the production of livestock products and meet the requirements of the labor market.
2.2.Map of the training profile within the educational program	
Code and classification of the field of education	6B08 - Agriculture and bioresources
Code and classification of the direction of training	6B082 - Animal production
Code in the International Standard Classification of Education	0811
Code and classification of the educational program group	B078 - Livestock
Code and name of the educational program	6B08201 - Technology of livestock products production
2.3.Qualification characteristics of the graduate	
Degree awarded / qualification	Bachelor of Agriculture in the educational program
Name of the profession / list of positions of a specialist	- zootechnician, zootechnician-breeder in breeding plants, farms and collective farms, joint-stock companies, production cooperatives, complexes, poultry farms and hippodromes; - inspector for the assessment of livestock products, breeding business; -technologist-manager of the organization of production of livestock products; -specialist in state institutions of the Ministry of Agriculture of the Republic of Kazakhstan; -IT geneticist.
OQF qualification level (industry qualification framework)	6
Area of professional activity	organization and execution of work on the maintenance and breeding of farm animals, production, processing and sale of livestock products in agricultural organizations.
Object of professional activity	- all types and breeds of agricultural and game animals, birds and their products; - machinery and technological equipment; - livestock facilities, premises of all types; - all types of natural and artificial feed; - equipment for scientific laboratories; - organization and accounting of resources and products of animal origin.
Types of professional activity	organizational and technological activities: - organization, planning, management in the production system of high quality livestock products while reducing costs; - organization of stall and pasture keeping of animals in accordance with zoohygienic requirements. - measures to prevent internal non-infectious diseases, feed toxicosis, procurement and assessment of the quality of feed and rationed feeding of certain species and groups of animals. production and management activities: - zootechnical and breeding registration of animals; - breeding work, genetic analysis;

	- marketing and sales of livestock products. project activity: - participation in the development of design estimates for the construction of livestock and poultry facilities. research activities: - creation, improvement of breeds of different types of farm animals; - calculations of 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 and procurement, storage and use of different types of feed. educational (pedagogical) activities: - pedagogical activity in secondary vocational and primary vocational educational organizations in 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

Module 1. Fundamentals of social and humanitarian knowledge

Foreign language

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26076 (3012616)
Course	1
Term	1
Credits count	5
Practical and seminar classes	45hours
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 content of the discipline «Foreign language» assumes the formation of students` intercultural and communicative competencies at B1 level. The discipline is aimed at mastering the knowledge, skills and abilities that allow using a foreign language in interpersonal communication and professional activity. All types of speech activity are taught, such as reading, writing, listening and production of texts of level complexity with a certain degree of grammatical and lexical correctness.

Purpose of studying of the discipline

Formation of intercultural and communicative competence of students in the process of foreign language education at a sufficient level (A2, pan-European competence) and the level of basic sufficiency (B1, pan-European competence). Depending on the level of training, the student at the time of completion of the course reaches the B1 level of the pan-European competence if the language level of the student at the start is higher than the A2 level of the pan-European competence.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

School course

Postrequisites

Foreign language

History of Kazakhstan

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26090 (3012689)
Course	1
Term	1
Credits count	5
Lections	30hours
Practical and seminar classes	15hours
Independent work of a student under the guidance of a teacher	35hours
Independent work of the student	70hours
Total	150hours
Knowledge control form	Qualification examination

Short description of discipline

The main stages of the history of Kazakhstan are studied with: nomadic statehood, Turkic civilization, the era of colonialism, the Soviet period, independence. The driving forces, trends, patterns of historical development are analyzed; problems: ethnogenesis of the Kazakh people, the formation of statehood, national liberation movements, demographic development. The skills of analyzing historical events and facts, working with historical literature are being formed.

Purpose of studying of the discipline

The purpose of the discipline is to provide objective knowledge about the main stages of the development of the history of Kazakhstan from ancient times to the present.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

School course

Postrequisites

Philosophy

Kazakh language

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26077 (3012618)
Course	1
Term	1
Credits count	5
Practical and seminar classes	45hours
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 deepening the acquired knowledge of students in the framework of the school curriculum, as well as the use of language and speech means based on a full understanding of vocabulary and grammatical system of knowledge; the formation of socio-humanitarian worldview of students within the framework of the national idea of spiritual revival; free expression of mobile thought as a means of speech communication and in the process of communication; awareness of the national culture of the people, the ability to distinguish features of national cognition.

Purpose of studying of the discipline

Forms through phraseological units the recognition of national culture, its meaning as a linguistic unit related to spiritual culture; skills of identifying facts of national and cultural significance in the formation of Kazakh phraseology.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

School course

Postrequisites

Kazakh language

Bases of economics, law and ecological knowledge

Discipline cycle	General educational disciplines
Discipline component	University component
SubjectID	26080 (3012693)
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 integrated discipline includes the main issues and principles in the field of fundamentals of law and anti- corruption culture, economics, entrepreneurship and leadership, ecology and life safety. Features of the use of regulatory legal acts, the ability to use the business, ethical, social, economic, entrepreneurial and environmental standards of society. Specifics of environmental-legal, economic, entrepreneurial relations, leadership qualities and principles of combating corruption.

Purpose of studying of the discipline

It consists in studying the basic patterns of the functioning of living organisms, the biosphere as a whole and the mechanisms of their sustainable development under the conditions of anthropogenic impact and emergency situations; in understanding the concept of corruption, the legitimacy of the fight against it, the content of the state penal policy; in the formation of students` basic fundamental stable knowledge on the basics of economic theory, in instilling the skills and abilities of economic thinking; in introducing students to the theory and practice of entrepreneurship, to the basics of creating their own business; in the formation of theoretical knowledge and practical skills for the development and improvement of leadership qualities.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

School course

Postrequisites

Basic and profile disciplines of the EP

Russian language

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26078 (3012620)

Course	1
Term	1
Credits count	5
Practical and seminar classes	45hours
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 intended for the development of the language personality of the student, who is able to carry out cognitive and communicative activities in Russian in the areas of interpersonal, social, professional, intercultural communication; for teaching students practical mastery of the Russian language in various areas of communication and various situations, mastering the specifics of functional semantic types and genres of functional styles of speech, enriching the vocabulary with special vocabulary, forming and improving the skills of monologue and dialogic speech.

Purpose of studying of the discipline
The purpose of the program is to form the socio-humanitarian worldview of students in the context of the national idea of spiritual modernization, involving the development on the basis of national consciousness and cultural code of the qualities of internationalism, tolerant attitude to world cultures and languages as translators of world-class knowledge, advanced modern technologies, the use and transfer of which can ensure the modernization of the country and personal career growth of future specialists.

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites
School course

Postrequisites
Russian language

Physical Culture

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26079 (3012623)
Course	1
Term	1
Credits count	2
Practical and seminar classes	60hours
Total	60hours
Knowledge control form	Differentiated attestation

Short description of discipline
It provides for the joint cooperation of a teacher and a student in the process of physical education throughout the training in the context of the requirements for the level of mastering the discipline, preparing students for participation in mass sports competitions; forms motivational and value attitudes towards physical culture and the need for systematic physical exercises and sports; gives basic knowledge about the use of physical culture and sports in the development of vital physical qualities.

Purpose of studying of the discipline
The purpose of the program is the formation of social and personal competencies of students and the ability to purposefully use the means and methods of physical culture, ensuring the preservation, strengthening of health to prepare for professional activities; to the persistent transfer of physical exertion, neuropsychic stress and adverse factors in future work.

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites
School course

Postrequisites
Physical Culture

Kazakh language

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26082 (3012619)
Course	1
Term	2
Credits count	5
Practical and seminar classes	45hours
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 expanding language literacy, free communication with the environment and mental and ideological skills of the student, understanding the role of language in the process of mastering world- class knowledge through the formation of a future specialist`s worldview based on national consciousness and cultural code, improving the knowledge of the state language by future specialists, increasing the scope of use of the Kazakh language by specialists.

Purpose of studying of the discipline
Ensuring high- quality mastery of the Kazakh language as a means of social, intercultural, professional communication through the formation of communicative competencies at all levels of language use.

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites
Kazakh language

Postrequisites
Basic and profile disciplines of the EP

Foreign language

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26081 (3012617)
Course	1
Term	2
Credits count	5
Practical and seminar classes	45hours
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 content of the discipline «Foreign language» assumes the formation of students` linguo- cultural, socio- cultural, cognitive and communicative competencies at B2 level.The discipline is aimed at deep and extended study of productive and receptive language material. As a result, the student must be able to understand all types of speech activity in accordance with the requirements of B2 level and master the subject content of the discipline and speech.

Purpose of studying of the discipline
Formation of linguo- culturological, socio- cultural, cognitive and communicative competence of students in the process of foreign language education at the B2 level, pan-European competence. Depending on the level of training, the student at the time of completing the course reaches the level B2 of the common European competence, if the language level of the student at the start is higher than the level B1 of the common European competence.

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites
Foreign language

Postrequisites
Basic and profile disciplines of the EP

The module of socio-political knowledge (sociology, political science, cultural studies, psychology)

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26085 (3012691)
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 module of socio-political knowledge involves the study of four scientific disciplines – sociology, political science, cultural studies, psychology, each of which has its own subject, terminology and research methods. Interactions between these scientific disciplines are carried out on the basis of the principles of information complementarity; integrativity; methodological integrity of research approaches of these disciplines; generality of the methodology of learning, result-oriented; unified system representation of the typology of learning

outcomes as formed abilities.

Purpose of studying of the discipline

Formation of social and humanitarian worldview of students in the context of solving the problems of modernization of public consciousness, defined by the state program "Looking into the Future: Modernization of Public Consciousness".

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

School course

Postrequisites

Philosophy

Russian language

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26083 (3012621)
Course	1
Term	2
Credits count	5
Practical and seminar classes	45hours
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 intended for the development of the language personality of the student, who is able to carry out cognitive and communicative activities in Russian in the areas of interpersonal, social, professional, intercultural communication; to teach the scientific style of speech as a language of specialty, the creation of secondary texts, the formation of skills for the production of oral and written speech in accordance with the communicative goal and the professional sphere of communication, instilling the skills of speech etiquette, business rhetoric.

Purpose of studying of the discipline

The purpose of the program is to form the socio-humanitarian worldview of students in the context of the national idea of spiritual modernization, involving the development on the basis of national consciousness and cultural code of the qualities of internationalism, tolerant attitude to world cultures and languages as translators of world-class knowledge, advanced modern technologies, the use and transfer of which can ensure the modernization of the country and personal career growth of future specialists.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

Russian language

Postrequisites

Basic and profile disciplines of the EP

Physical Culture

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26084 (3012624)
Course	1
Term	2
Credits count	2
Practical and seminar classes	60hours
Total	60hours
Knowledge control form	Differentiated attestation

Short description of discipline

It provides for the joint cooperation of a teacher and a student in the process of physical education throughout the training in the context of the requirements for the level of mastering the discipline, the ability to exercise control and self-control in the process of classes, gaining knowledge on health promotion, hardening and increasing the body`s resistance to the effects of adverse factors of labor activity, mastering methods of selection of physical exercises and sports.

Purpose of studying of the discipline

The purpose of the program is the formation of social and personal competencies of students and the ability to purposefully use the means and methods of physical culture, ensuring the preservation, strengthening of health to prepare for professional activities; to the persistent transfer of physical exertion, neuropsychic stress and adverse factors in future work.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

Physical Culture

Postrequisites
Physical Culture

Information and communication technology

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26087 (3012692)
Course	2
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 mastering the conceptual foundations of the architecture of computer systems, operating systems and networks by students; formation of the ability to critically understand the role and signifcance of modern information and communication technologies in the era of digital globalization, new "digital" thinking, knowledge about the concepts of developing network and web applications, skills in using modern information and communication technologies in various felds of professional activity, scientifc and practical work, for self-educational and other purposes.

Purpose of studying of the discipline
Formation of the ability to critically evaluate and analyze processes, methods of searching, storing and processing information, methods of collecting and transmitting information through digital technologies

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites
School course Foreign language

Postrequisites
Basic and profile disciplines of the EP

Physical Culture

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26086 (3012625)
Course	2
Term	1
Credits count	2
Practical and seminar classes	60hours
Total	60hours
Knowledge control form	Differentiated attestation

Short description of discipline
Provides for the joint cooperation of the teacher and the student in the process of physical education throughout the training in the context of the requirements for the level of mastering the discipline; increasing the level of physical fitness and developing physical qualities; mastering the technique of sports; education of discipline, collectivism, comradely mutual assistance; education of mental stability, development and improvement of basic motor qualities - endurance, strength, speed, dexterity, flexibility.

Purpose of studying of the discipline
The purpose of the program is the formation of social and personal competencies of students and the ability to purposefully use the means and methods of physical culture, ensuring the preservation, strengthening of health to prepare for professional activities; to the persistent transfer of physical exertion, neuropsychic stress and adverse factors in future work.

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites
Physical Culture

Postrequisites
Physical Culture

World of Abai

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	26088 (3012661)
Course	2

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 discipline is aimed at studying historical facts, the philosophical and artistic foundations of the works of Abay Kunanbaev, Shakarim Kudaiberdiev, which form worldview and aesthetic values, the student`s ability to express his opinion, practical skills and perception of such human qualities as morality, honesty, artistic character. The genius of the writers of Kazakh literature and the role of M. Auezov in the study and popularization of Abai`s heritage, the significance of his works for history, literature and science are determined.

Purpose of studying of the discipline

Formation of the meaning of philosophical and ideological being, understanding of the problems raised in the works of Abai Kunanbayuly, Shakarim Kudaiberdiuly, Mukhtar Auezov and application of the acquired knowledge in the practice of everyday life.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

The module of socio-political knowledge (sociology, political science, cultural studies, psychology)

Postrequisites

Basic and profile disciplines of the EP

Physical Culture

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26089 (3012626)
Course	2
Term	2
Credits count	2
Practical and seminar classes	60hours
Total	60hours
Knowledge control form	Differentiated attestation

Short description of discipline

Provides for the joint cooperation of the teacher and the student in the process of physical education throughout the training in the context of the requirements for the level of mastering the discipline; acquisition of versatile abilities and skills for the development of physical abilities, socio-cultural experience and socio-cultural values of physical culture and sports; development of communication skills, thinking, self-development, the formation of experience in the implementation of sports and recreational and training programs.

Purpose of studying of the discipline

The purpose of the program is the formation of social and personal competencies of students and the ability to purposefully use the means and methods of physical culture, ensuring the preservation, strengthening of health to prepare for professional activities; to the persistent transfer of physical exertion, neuropsychic stress and adverse factors in future work.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

Physical Culture

Postrequisites

Basic and profile disciplines of the EP

Philosophy

Discipline cycle	General educational disciplines
Discipline component	Compulsory component
SubjectID	26091 (3012628)
Course	3
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 developing students` openness of consciousness, understanding their own national code and self-consciousness, spiritual modernization, competitiveness, realism and pragmatism, independent critical thinking, the cult of knowledge and education, a holistic view of philosophy as a special form of understanding the world, mastering key worldview concepts, as well as the development and strengthening of the values of tolerance, intercultural dialogue and a culture of peace.

Purpose of studying of the discipline

Formation in students of a holistic view of philosophy as a special form of knowledge of the world, its main sections, problems and methods of studying them in the context of future professional activities.

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Prerequisites

History of Kazakhstan The module of socio-political knowledge (sociology, political science, cultural studies, psychology)

Postrequisites

Basic and profile disciplines of the EP

Module 2. Biological aspects of animal husbandry intensification

Anatomyofanimals

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	26872 (3012664)
Course	1
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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

It is aimed at studying the laws of the structure and development of the system and organs of the animal`s body, as well as species and age features in the structure. Studies the terms directions, planes of the body, area and parts of the animal`s body, body structure, skeleton and bones, joints, muscles, endocrinology, body coverings, anatomy of the mammary gland, nervous system, sensory organs, anatomy of the cardiovascular, lymphatic, respiratory, digestive, urinary, reproductive systems.

Purpose of studying of the discipline

To give students an idea of the structure and development of systems and organs of the animal body.

Learning Outcomes

ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

School course

Postrequisites

Basic and profile disciplines of the EP

ntroduction to the specialty

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	26873 (3012647)
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 discipline provides basic concepts about the branches of animal husbandry in order to create an initial idea of the future professional activity, the relationship of the educational program with other sciences, the prospects for the development of the specialty. Contribution of domestic scientists and practitioners to the development of the foundations of science, theory and practice of animal husbandry. Familiarization with zootechnical sciences: private zootechnics, genetics, feeding, hygiene of keeping and breeding farm animals.

Purpose of studying of the discipline

To acquaint students with the specifics of the specialty Technology of production of livestock products in the field of agriculture, to teach

them the types and breeds of animals in the farm, as well as methods of their cultivation, methods of obtaining products, methods of care, etc.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

School course

Postrequisites

The methodology of experimental business and the basics of patenting

Physiologyofanimals

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	27092 (3012665)
Course	1
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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

It is aimed at studying the integral functions of the body and the functions of all its parts. Examines bone functions, joint movements, physiology of the musculoskeletal system and muscles, blood and other body fluids, body defenses and the immune system, heart physiology and blood circulation, physiology of the digestive system, nutrition and metabolism, ovarian and extral cycles, pregnancy and childbirth.

Purpose of studying of the discipline

To give students an idea of the integral functions of the body and the functions of all its parts.

Learning Outcomes

ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

School course

Postrequisites

Basic and profile disciplines of the EP

Private animal ethology

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	27093 (3012666)
Course	1
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 animal behavior, analyzing genetically determined components of behavior and the problems of its evolution. Studies methods and tasks of animal ethology; behaviorism, species stereotype of behavior and labile behavioral reactions, learning patterns, criteria, observation and experiment, learning, general characteristics of instinct, features of ecological approach to ethology, the concept of a sign, Skinner`s experiments, differences between human and animal languages.

Purpose of studying of the discipline

To give students an idea of animal behavior, genetic features of behavior and their development problems.

Learning Outcomes

ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

School course

Postrequisites
Basic and profile disciplines of the EP

Animal Biochemistry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	27096 (3012682)
Course	1
Term	2
Credits count	8
Lections	30hours
Practical and seminar classes	15hours
Laboratory works	30hours
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 molecular processes occurring in the cells of a living organism. The course examines the structure, structure and properties of the main biogenic molecules; metabolic processes occurring in the cells of various organs and tissues; finding out the causes of pathology of various diseases and finding ways to treat them effectively; biochemistry of animal productivity: meat, milk, bird eggs, skin and wool.

Purpose of studying of the discipline
Students are directed to study the molecular processes occurring in the cells of a living organism.

Learning Outcomes
ON 9 Apply modern research methods in the field of animal husbandry, scientific and technical information, domestic and foreign experience in animal husbandry and solve problems at a professional level in various branches of animal husbandry.

Prerequisites
ntroduction to the specialty

Postrequisites
Genetic

The methodology of experimental business and the basics of patenting

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	27097 (3012683)
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 course is aimed at studying the main areas of research that determine scientific and technological progress in animal husbandry, as well as methods and main stages of research work. The course examines the organization of zootechnical experience, conditions that ensure the reliability of the results of experience, systematization, analysis and evaluation of the results of experience, the structure of the main types of patent documentation, the purpose and types of patent search, traditional search for patent information.

Purpose of studying of the discipline
To give future specialists the knowledge, the methodology of experimental work and the basics of patenting in animal husbandry.

Learning Outcomes
ON 9 Apply modern research methods in the field of animal husbandry, scientific and technical information, domestic and foreign experience in animal husbandry and solve problems at a professional level in various branches of animal husbandry.

Prerequisites
ntroduction to the specialty

Postrequisites
Fish farming

Fundamentals of research in livestock

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	27095 (3012629)
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 students` modern skills in determining the methods and methods of conducting scientific research, the rules of evaluation and interpretation of the results obtained. The discipline considers the presentation of primary documentation in animal husbandry, the use of various methods of initial processing of material based on the results of scientific research in animal husbandry, methods and techniques for processing experimental data, economic evaluation of the results of experience, as well as basic research in animal husbandry.

Purpose of studying of the discipline
To give future zooengineers knowledge, to develop their skills and skills of research work in animal husbandry.

Learning Outcomes
ON 9 Apply modern research methods in the field of animal husbandry, scientific and technical information, domestic and foreign experience in animal husbandry and solve problems at a professional level in various branches of animal husbandry.

Prerequisites
ntroduction to the specialty

Postrequisites
Fish farming

Educational practice

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	27094 (3012646)
Course	1
Term	2
Credits count	2
Study practics	60hours
Total	60hours
Knowledge control form	Total mark on practice

Short description of discipline
The main purpose of the the knowledge is to consolidate educational practice acquired in the course of lectures, independent work of and laboratory classes students, and to obtain fundamentala competenciese. Content: methods and techniques of the experiment, accounting of experimental data. Working with animals. Familiarization with the sciences: private animal science, genetics, feeding, hygiene of keeping and breeding farm animals. Biological aspects in the production technology of animal products.

Purpose of studying of the discipline
The main purpose of the educational practice is to consolidate the knowledge acquired in the course of lectures, laboratory classes and independent work of the student, and to obtain fundamental competencies. Successfully completed educational practice contributes to easier assimilation of material in special disciplines that form a fundamental part of the professional cycle.

Learning Outcomes
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.
ON 9 Apply modern research methods in the field of animal husbandry, scientific and technical information, domestic and foreign experience in animal husbandry and solve problems at a professional level in various branches of animal husbandry.

Prerequisites
ntroduction to the specialty

Postrequisites
Production practice I

Biology of individual animal development

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29442 (3012651)
Course	2
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 studies the processes of animal ontogenesis. At the same time, all stages of ontogenesis are studied: prenatal and postnatal. The course examines the structure and development of germ cells, the process of gamete fertilization, zygote fragmentation, the formation of blastula, morula, blastocysts, gastrum, lactation, the development of axial organs, the formation of fetal membranes and placenta, features of mammalian embryogenesis, general patterns of genetic and hormonal regulation of individual development of the organism, critical periods of development.

Purpose of studying of the discipline
Presentation to students of the morphology of the modern level of biology of personal development, which is extremely necessary and important for biological science and practice, mastering it. Creating conditions for further higher education for students, the development of creative opportunities, activity and innovation

Learning Outcomes
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites
School course

Postrequisites
Basic and profile disciplines of the EP

Module 3. Feeding and breeding of farm animals

Forage production

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29439 (3012632)
Course	2
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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
Examines the basics of creating and strengthening the forage base on the basis of rational use and improvement of natural and field forage lands, information about the bioecological features of plants of hayfields and pastures, technology for improving forage lands. The discipline studies methods of determining the yield and nutritional value of feed, the process and methods of harvesting hay, silage and haylage; technology of feed preparation, determination of the quality of yield of fodder crops.

Purpose of studying of the discipline
Acquisition of knowledge about the patterns of development and life of forage plants, the relationship of plants with the environment, methods and techniques for creating optimal conditions for the growth of forage crops and obtaining feed based on them.

Learning Outcomes
ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.

Prerequisites
School course

Postrequisites
Feeding of agricultural animals

Feeding of agricultural animals

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29468 (3012633)
Course	2
Term	2
Credits count	10
Lections	30hours
Practical and seminar classes	30hours
Laboratory works	30hours
Independent work of a student under the guidance of a teacher	70hours
Independent work of the student	140hours
Total	300hours
Knowledge control form	Examination and term work/Project

Short description of discipline

The value of the constituent parts of the feed in the organization of complete feeding of animals. Evaluation of the nutritional value of feed by digestible nutrients. Classification of feed and their characteristics. Pasture use. Green conveyor. Fundamentals of silo technology. Evaluation of the quality of grain feed. Types of feed.

Purpose of studying of the discipline

Training of highly professional specialists in the field of feeding farm animals who possess modern technologies of feed production, storage and rational use of feed

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.

Prerequisites

Forage production

Postrequisites

Cultivation and selection of farm animals

Mechanization and automation of animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29469 (3012649)
Course	2
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

The course is aimed at mastering technologies in the mechanization of production processes in animal husbandry. Studies the mechanisms of agricultural machinery and equipment of livestock premises and farms, compliance with the rules of their operation, preparation of working systems of machines and equipment for milking animals, preparation and distribution of feed, microclimate, water supply, manure removal, veterinary and sanitary work, automation of drying and ventilation processes, feed production, poultry feeding.

Purpose of studying of the discipline

The purpose of the discipline is to provide students with theoretical and practical knowledge on the technology and mechanization of production processes in animal husbandry, the purpose of machinery and equipment of livestock farms and farms, the rules of their operation and rational use to maximize production at the lowest cost and taking into account environmental requirements

Learning Outcomes

ON 3 To recommend modern information technologies in the production and processing of livestock products, scientific achievements in assessing the quality of feed and products, in standardization and certification of livestock products, to argue the need for mechanization and automation of technological processes.

Prerequisites

Forage production

Postrequisites

Technology of livestock products production

Production practice I

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29470 (3012655)
Course	2
Term	2
Credits count	5
Study practics	150hours
Total	150hours
Knowledge control form	Total mark on practice

Short description of discipline

Consolidation of knowledge gained in the course of training, based on the study of work experience at a functioning agricultural enterprise, as well as mastering production skills. Practical work on feed preparation technologies, assessment of feed nutrition by digestible nutrients, classification of feeds and their characteristics, organization of fish cultivation and rearing, fish feeding, non-infectious, infectious and invasive diseases, basics of diagnostics and measures for the prevention of diseases of animals and humans.

Purpose of studying of the discipline

Consolidation of knowledge gained in the course of training, based on the study of work experience at a functioning enterprise, as well as mastering production skills.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.

ON 3 To recommend modern information technologies in the production and processing of livestock products, scientific achievements in assessing the quality of feed and products, in standardization and certification of livestock products, to argue the need for mechanization and automation of technological processes.

Prerequisites

Educational practice

Postrequisites

Internship II

Digitalization in animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29473 (3012685)
Course	2
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

The discipline is aimed at studying the main technologies implemented in the framework of digitalization of the agricultural sector of Kazakhstan. It includes the creation of experienced digital enterprises in animal husbandry (smart dairy farm, automatic pig farm, etc.) based on intelligent automated and robotic biomachine complexes of a new generation, digital tools for the use of informative resources, the acquisition of practical skills in using digital technologies to solve applied problems in agriculture.

Purpose of studying of the discipline

Education of students about the main technologies in the framework of digitalization of the agricultural sector.

Learning Outcomes

ON 3 To recommend modern information technologies in the production and processing of livestock products, scientific achievements in assessing the quality of feed and products, in standardization and certification of livestock products, to argue the need for mechanization and automation of technological processes.

Prerequisites

Forage production

Postrequisites

Technology of livestock products production

Electrification of agriculture

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29474 (3012688)
Course	2
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

It is aimed at studying the use of electric energy in technological processes in the production of livestock products. Studies the process of electrification of livestock farms and other premises, the centralization of energy conservation, the use of electric energy in energy-intensive agricultural production processes, energy-saving technologies in animal husbandry, electronic identification systems in animal husbandry, electrical technologies in creating a microclimate in rooms for keeping animals and poultry.

Purpose of studying of the discipline

Formation of the student`s competencies in the field of electric power engineering in the production of livestock products.

Learning Outcomes

ON 3 To recommend modern information technologies in the production and processing of livestock products, scientific achievements in assessing the quality of feed and products, in standardization and certification of livestock products, to argue the need for mechanization and automation of technological processes.

Prerequisites

Forage production

Postrequisites

Technology of livestock products production

Zoohyena

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	30725 (3012648)
Course	3
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 course is aimed at studying the interaction of an animal organism with the external environment. The discipline studies the hygiene of the air environment, soil hygiene, hygiene of water and animal watering, hygiene of feed and feeding, hygiene of animal transportation, hygiene of rational care of farm animals, hygiene of pasture keeping of farm animals, occupational hygiene and personal hygiene of livestock workers, zoohygienic requirements in animal husbandry industries.

Purpose of studying of the discipline

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.

Prerequisites

Basics of veterinary

Postrequisites

Breeding business in animal husbandry

Management in animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30726 (3012662)
Course	3
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

Formation of students` knowledge and practical skills in the management of processes in animal husbandry. The scientific and methodological foundations of management, management methods, planning, organization of labor, processes, actions, motivation and stimulation, accounting and control, animal feeding management, livestock reproduction management, cattle breeding management, pig breeding management, sheep breeding management, poultry breeding management, horse breeding management, organization and management of small-scale farming are considered.

Purpose of studying of the discipline

Training of students in management, management methods, organization of work and processes, planning of actions, motivation and motivation.

Learning Outcomes

ON 7 Develop and carry out measures to increase various production indicators of animal husbandry, analyze and plan technological processes as objects of management, the work of a team of performers, making financial and managerial decisions in conditions of different opinions.

Prerequisites

Beekeeping

Postrequisites

Poultry breeding

Fundamentals of marketing in animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30727 (3012663)
Course	3
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
Formation of students` basic theoretical knowledge and practical skills in the field of marketing basics in animal husbandry. Theoretical and practical aspects of marketing, the role of the consumer in the system of marketing services, conducting market research in livestock industries, concepts of goods and price, policy formation in matters of goods and prices, competitiveness and competitiveness, marketing management in the field of animal husbandry are considered.

Purpose of studying of the discipline
Formation of students ` understanding of the theoretical and practical aspects of marketing in animal husbandry

Learning Outcomes
ON 7 Develop and carry out measures to increase various production indicators of animal husbandry, analyze and plan technological processes as objects of management, the work of a team of performers, making financial and managerial decisions in conditions of different opinions.

Prerequisites
Beekeeping

Postrequisites
Poultry breeding

Cultivation and selection of farm animals

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	30724 (3012634)
Course	3
Term	1
Credits count	10
Lections	30hours
Practical and seminar classes	60hours
Laboratory works	0hours
Independent work of a student under the guidance of a teacher	70hours
Independent work of the student	140hours
Total	300hours
Knowledge control form	Examination

Short description of discipline
The course is aimed at developing principles and methods for improving the qualities of animals. Examines the history of the origin and evolution of farm animals, exterior and interior features and constitution, productivity accounting, indicators of growth and development of animals, animal assessment by origin and quality of offspring, classification of breeds, methods of breeding farm animals in conditions of intensification, forms and principles of selection and selection.

Purpose of studying of the discipline
The purpose of studying the discipline is to acquire deep theoretical knowledge of the basics of zootechnical science and practice in the context of breeding and breeding of farm animals, detailed mastery, generalization and systematization of the knowledge gained for implementation in the practice of animal husbandry

Learning Outcomes
ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites
Feeding of agricultural animals

Postrequisites
Breeding business in animal husbandry

Technology and organization of production of national products

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30728 (3012686)
Course	3
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 the formation of students` skills in mastering the methods of technological processes and the organization of the production of national food products. The course examines a set of technological measures used in the cultivation of horses of different age and gender groups, the main technological aspects, rules and techniques for organizing the production of national meat and dairy products, modern technologies for the production of koumiss with various methods of organizing technological processes.

Purpose of studying of the discipline
Full mastering of technological processes and production of national food products by students.

Learning Outcomes
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.

Prerequisites
Beekeeping

Postrequisites
Poultry breeding

Module 4. Technologies in small-scale animal husbandry

Obstetrics and gynecology offarmanimals

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29444 (3012678)
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
It is aimed at the formation of knowledge and skills in obstetrics and gynecology of animals. The study of reproduction processes of farm animals, as well as physiological and pathological processes in the body of female farm animals during insemination, fertilization, pregnancy, childbirth and the postpartum period, as well as physiological patterns regulating the reproductive function of animals, veterinary gynecology and animal andrology, special attention is paid to rational methods of prevention and therapy of various diseases in animals.

Purpose of studying of the discipline
To form knowledge and skills of students in obstetrics and gynecology of farm animals.

Learning Outcomes
ON 4 To organize and carry out sanitary and preventive work to prevent the main diseases of animals, rational reproduction of animals.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites
Basics of veterinary

Postrequisites
Breeding business in animal husbandry

Veterinary and sanitary examination of animal products

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29445 (3012684)
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 course studies slaughter animals, their transportation, pre- slaughter maintenance and slaughter. Transportation of perishable

products, veterinary and sanitary control on refrigerated transport, enterprises for processing slaughtered animals and veterinary and sanitary requirements for them, pre-slaughter livestock and its significance, fundamentals of technology and hygiene of slaughtered animals, organization and methods of inspection of meat carcasses and internal organs are considered.

Purpose of studying of the discipline

To give students an idea of slaughtered animals, their preparation for slaughter and work after their slaughter.

Learning Outcomes

ON 4 To organize and carry out sanitary and preventive work to prevent the main diseases of animals, rational reproduction of animals.
ON 10 To develop and carry out measures for the management of technological processes for primary processing, standardization and certification of livestock products, commodity science and expertise of livestock raw materials, to assess the costs of ensuring product quality, adaptation of modern versions of quality management systems to specific production conditions.

Prerequisites

Basics of veterinary

Postrequisites

Breeding business in animal husbandry

Genetic

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29436 (3012631)
Course	2
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 introduces the basics of heredity and variability of organisms, the main provisions of genetics, Mendel`s laws, the chromosomal theory of heredity. Gives an idea of the cytological foundations of heredity, the patterns of inheritance in remote and intraspecific hybridization. Examines the provisions on the molecular foundations of heredity, the main types of variability, polyploidy and its role in breeding and evolution, genetic evaluation of populations and individuals by offspring.

Purpose of studying of the discipline

The purpose of this course is to ensure the disclosure of the content of the basic principles, laws and concepts of each section of the course and the development of genetic thinking skills for conscious perception and mastering the methods of genetics.

Learning Outcomes

ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites

School course

Postrequisites

Production practice I

Fish farming

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29441 (3012650)
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

It is aimed at studying the current state and prospects for the development of fish farming. The course examines the development of fish farming, the organization of fish cultivation and rearing, fish feeding, assessment of the fatness of fish, fish breeding, organization of fishing, storage and transportation of fish products, basic fishing gear, nets, seines, trawls, fishing vessels, fishing mechanization and refrigeration units, primary processing of fish, organization of promotion of fish products on the market.

Purpose of studying of the discipline

The purpose of studying the discipline is the formation of knowledge and skills among students in fish biology, morphological, physiological and functional features of fish farming.

Learning Outcomes
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.
Prerequisites
The methodology of experimental business and the basics of patenting
Postrequisites
Beekeeping

Histology

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29471 (3012660)
Course	2
Term	2
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 structure, vital activity and development of tissues of living organisms. Considers the formation and development of histology as a science, methods of microscopy of histological preparations; methods of studying living tissues; tissue as a system; development and classification of tissues; tissue regeneration; general morphological characteristics and classification and structure of epithelial, connective, muscular, nervous tissue of animals; private histology.
Purpose of studying of the discipline
The purpose of this course is to study the macro and microscopic structure and phylo ontogenetic development of organ systems of farm animals.
Learning Outcomes
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.
Prerequisites
Anatomyofanimals
Postrequisites
Zoohyena

Basics of veterinary

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	29467 (3012630)
Course	2
Term	2
Credits count	3
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	0hours
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
It is aimed at applying the basics of veterinary medicine in the work of a livestock production technologist. The course examines the organization of veterinary measures in our country, the basic concepts of pathophysiology and pathanatomy, clinical diagnostics and pharmacology, methods and methods of general and special animal studies, feed toxicosis of farm animals, prevention of non-infectious diseases, infectious and invasive diseases in farm animals and poultry.
Purpose of studying of the discipline
Identification of the pathological process in the animal`s body, the causes and conditions of their origin, the basis of the disease, measures to prevent and combat them
Learning Outcomes
ON 4 To organize and carry out sanitary and preventive work to prevent the main diseases of animals, rational reproduction of animals.
Prerequisites
Anatomyofanimals
Postrequisites
Cultivation and selection of farm animals

Beekeeping

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	26184 (3012636)
Course	2
Term	2
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 forms knowledge and practical skills on the technology of bee production. The discipline considers the biological features of the bee family, species and breed characteristics of bees and zoning, methods of keeping and caring for bees, reproduction of bees and breeding work in apiaries, new technologies for the production of bee products, features of zonal and regional specialization, planning the size of beekeeping, farms and apiaries.

Purpose of studying of the discipline

To get acquainted and examine the valuable products taken - bee honey, wax, pollen, royal jelly and bee venom from beekeeping for the national economy.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

Anatomyofanimals

Postrequisites

Cultivation and selection of farm animals

Cytology

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	29472 (3012667)
Course	2
Term	2
Credits count	5
Lections	15hours
Practical and seminar classes	15hours
Laboratory works	15hours
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 course is aimed at studying cytology as a science, the current level of knowledge about the cell. Examines the history and methods of microscopic studies, the structure of somatic and germ cells at the submicroscopic level, cellular theory, types of cellular organization, cell surface apparatus, cell musculoskeletal system, endoplasmic network, Golgi apparatus, lysosomes, ribosomes, centrosomes, mitochondria, cell nucleus, cell cycle, cell division.

Purpose of studying of the discipline

To give the student a complete picture of animal cells.

Learning Outcomes

ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

Anatomyofanimals

Postrequisites

Zoohyena

Internship II

Discipline cycle	Basic disciplines
Discipline component	University component
SubjectID	30733 (3012656)

Course	3
Term	2
Credits count	5
Study practics	150hours
Total	150hours
Knowledge control form	Total mark on practice

Short description of discipline
Formation of professional abilities of a student in the conditions of production on the basis of the use of his theoretical knowledge in various situations characteristic of the future professional activity of a specialist. Practical work with mechanisms of agricultural machinery and equipment of livestock premises and farms, animal assessment, herd analysis by productivity and factors affecting it, with a breeding work plan, on the production technology of certain subsectors of animal husbandry, animal reproduction biotechnology.

Purpose of studying of the discipline
Formation of professional abilities of a student in the conditions of production on the basis of the use of his theoretical knowledge in various situations characteristic of the future professional activity of a specialist.

Learning Outcomes
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites
Production practice I

Postrequisites
Internship III

Biometrics

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30736 (3012642)
Course	3
Term	2
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	0hours
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 forms ideas about mathematical methods of processing experimental material to prove the objectivity and reliability of the results obtained, the relationship of signs and phenomena. The fundamental methods of biometrics for the use of explanations of statistical processes in animal husbandry, the most important provisions of variational statistics, as well as the requirements for the formation of data and the main provisions of correlation, variance and regression, as well as work with computer technologies, software are considered.

Purpose of studying of the discipline
Expansion and deepening of students` knowledge on statistical data processing in animal husbandry.

Learning Outcomes
ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites
Cultivation and selection of farm animals

Postrequisites
Cattle breeding

Microbiology

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30737 (3012669)
Course	3
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
The discipline is aimed at forming a theoretical and practical basis for conducting microbiological research and analyzing the microflora of living organisms living in different environments. Systematics of microorganisms, prokaryotes and eukaryotes, bacteria and archaea, nomenclature and morphological features of microorganisms, physiology of microbes, systematics of prokaryotes, isolation of pure cultures of aerobic and anaerobic bacteria, genetics of microorganisms, the doctrine of infection, the evolutionary process of microorganisms are considered.

Purpose of studying of the discipline
Formation of students ` theoretical and practical knowledge of microbiological and living organisms living in different environments

Learning Outcomes
ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites
Cultivation and selection of farm animals

Postrequisites
Cattle breeding

Breeding business in animal husbandry

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30734 (3012637)
Course	3
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
Formation of theoretical skills of breeding work for practical activities. The course examines the system of breeding work in animal husbandry, the theoretical justification of breeding, evaluation of breeding qualities of producers of farm animals during selection, forecasting the effect of breeding, breeding work in animal breeding, breeding value of producers, breeding work in farms of various types, breeding accounting, organization and justification of planning breeding work.

Purpose of studying of the discipline
The purpose of the discipline is to provide students with the necessary amount of theoretical knowledge, methodological and theoretical skills necessary for the organization of effective breeding work with families, lines, herds and breeds.

Learning Outcomes
ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites
Cultivation and selection of farm animals

Postrequisites
Cattle breeding

Poultry breeding

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	30735 (3012639)
Course	3
Term	2
Credits count	8
Lections	30hours
Practical and seminar classes	30hours
Laboratory works	15hours
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 is aimed at mastering the knowledge of breeding, feeding and keeping of poultry. Considers the biology of poultry, characteristics of breeds and breed groups, crosses, lines, breeding and breeding of poultry, egg incubation; poultry bonification, technology of keeping and feeding poultry, technology of industrial production of eggs and meat, organization of slaughter and primary processing of poultry.

Purpose of studying of the discipline
Formation of theoretical knowledge and practical skills in the maintenance, breeding, feeding of poultry, poultry production technology.
Learning Outcomes
ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.
Prerequisites
Technology and organization of production of national products
Postrequisites
Information technologies in animal breeding

Fur farming

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30795 (3012652)
Course	4
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 forms and develops students` competence in the technology of production of animal husbandry products. The characteristics of fur-bearing animals with cellular content, seasonal reproduction and features in the structure of reproductive organs, types of content in fur farming, features of breeding work, determination of the value, quality and sorting of skins of each type of fur, rules for breeding mink, sable, fox, arctic fox, raccoon dog, nutria, marmot, chinchilla are studied.
Purpose of studying of the discipline
The purpose of mastering the discipline is to deepen knowledge about the biological and economic characteristics of fur- bearing animals and technological processes of fur production, as well as to improve the skills and abilities that allow production in conditions of small and large fur farms at a highly profitable level with its constant improvement.
Learning Outcomes
ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.
Prerequisites
Breeding business in animal husbandry
Postrequisites
Undergraduate practice

Karakul breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30805 (3012676)
Course	4
Term	1
Credits count	6
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	15hours
Independent work of a student under the guidance of a teacher	40hours
Independent work of the student	80hours
Total	180hours
Knowledge control form	Examination

Short description of discipline
Formation of knowledge about the state, significance and prospects of the development of karakul breeding at the present stage of the market economy. Breed types of Karakul sheep, distribution zones of sheep, reproduction and cultivation of Karakul sheep, maintenance and feeding, technology of production of karakul, basic rules and techniques of slaughter of lambs for karakul, primary processing, storage and marketing of karakul skins, sorting of karakul skins are considered.
Purpose of studying of the discipline

To give students an idea of the state, importance and development prospects of the karakul economy

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.

Prerequisites

Breeding business in animal husbandry

Postrequisites

Undergraduate practice

Goat breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30806 (3012677)
Course	4
Term	1
Credits count	6
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	15hours
Independent work of a student under the guidance of a teacher	40hours
Independent work of the student	80hours
Total	180hours
Knowledge control form	Examination

Short description of discipline

Formation of knowledge and skills on the technology of production of goat products. The biology and economic features of goats are considered; dairy, down, wool, meat, combined breeds; breeding and breeding work in goat breeding; goat breeding technique; herd structure; reproduction of goats; lactation of goats; normalized feeding of goats; the main types of goat products – wool, down, milk, meat and by-products; production efficiency goat breeding products.

Purpose of studying of the discipline

To give students an idea of the technology of production of goat products.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

Breeding business in animal husbandry

Postrequisites

Undergraduate practice

Rabbit breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30790 (3012635)
Course	4
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

Formation of students` theoretical and practical foundations for the production technology of rabbit breeding products. The state and prospects of rabbit breeding development are considered; economic and biological features of rabbits; features of keeping and feeding rabbits of the main herd, breeding and non-breeding young; classification of rabbit breeds in the direction of productivity; meat, skin, down productivity of rabbits; measures to ensure the receipt of high-quality skins.

Purpose of studying of the discipline

Mastering the skills of rational maintenance regimes, organizations and slaughter, primary processing of rabbit skins and determination of their quality, rabbit breeding production technology based on modern
zootechnical science and practice.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.

Prerequisites

Breeding business in animal husbandry

Postrequisites

Undergraduate practice

Sheep breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30804 (3012675)
Course	4
Term	1
Credits count	6
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	15hours
Independent work of a student under the guidance of a teacher	40hours
Independent work of the student	80hours
Total	180hours
Knowledge control form	Examination

Short description of discipline

The discipline is aimed at studying industrial technologies for the production of sheep products. The biological features of sheep, zoological and industrial or economic classification of breeds, breeding and breeding work, sheep breeding zones of different directions in the breed zoning of Kazakhstan, intensive fattening and feeding of sheep, wool, meat and dairy sheep breeding, methods of increasing the meat, wool and dairy productivity of small cattle are considered.

Purpose of studying of the discipline

Formation of students ` understanding of the technology of production of goat products.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

Breeding business in animal husbandry

Postrequisites

Undergraduate practice

Pig breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30791 (3012638)
Course	4
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	0hours
Independent work of a student under the guidance of a teacher	35hours
Independent work of the student	70hours
Total	150hours
Knowledge control form	Examination and term work/Project

Short description of discipline

It is aimed at studying the state, significance and prospects of pig breeding development at the current stage of the market economy. The biology and economically useful features of pigs, quantitative and qualitative indicators, the doctrine of the breed are studied; standards for feeding and keeping pigs, reproductive qualities of pigs, breeding work in pig breeding, in- line pork production, pig production technology, types of specialized farms: reproductive, fattening and with a complete production cycle.

Purpose of studying of the discipline

Formation of theoretical knowledge and practical skills in pig meat production technology .To teach students to master the methods of increasing fattening and meat productivity, the efficiency of feed use, the intensification of pork production.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.

ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

Breeding business in animal husbandry

Postrequisites

Undergraduate practice

Module 5. Modern technologies in animal husbandry

Technology of livestock products production

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	30729 (3012640)
Course	3
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	0hours
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 mastering the economic prerequisites for the organization and production of products obtained from the main types of farm animals bred on farmers, as well as in peasant, cooperative, joint-stock and personal subsidiary farms of the Republic of Kazakhstan, the CIS and abroad. The course studies the issues of production technology of individual subsectors of animal husbandry: cattle breeding, sheep breeding, horse breeding, camel breeding, poultry breeding, pig breeding, fish farming, rabbit breeding, animal husbandry, beekeeping, maral breeding, karakul breeding.

Purpose of studying of the discipline

To give students the necessary amount of knowledge, skills, and skills in mastering the technology of milk production, beef, pork, sheep breeding, horse breeding, poultry farming and other livestock industries in different types of agricultural enterprises

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.

Prerequisites

Mechanization and automation of animal husbandry

Postrequisites

Commodity science and expertise of livestock raw materials

Camel breeding

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30730 (3012643)
Course	3
Term	2
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	0hours
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

Mastering knowledge on the technology of camel production. Species, breed and interspecific features of camel hybrids, reproductive qualities of camels, norms and diets of feeding and keeping camels, features of breeding in camel breeding, camel as a working animal, camel meat production technology, ways to reduce the cost of meat production, dairy productivity of dromedaries, bactrians and hybrids, production technology of fur coat in farms are considered.

Purpose of studying of the discipline

To give in-depth study to students about the state of camel breeding in our country and abroad.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the

production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

Cultivation and selection of farm animals

Postrequisites

Commodity science and expertise of livestock raw materials

Maral breeding

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30731 (3012653)
Course	3
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 consists in breeding marals as a branch of animal husbandry. Studies the history of the origin and biological qualities of marals; the concept of the exterior, constitution and interior of marals; productivity of marals; methods of assessing productivity; meat and antler productivity; accounting of products; methods of rearing young animals; the system of keeping marals; features of zootechnical and breeding accounting in maral breeding; selection of methods of selection and selection of marals.

Purpose of studying of the discipline

Formation of theoretical knowledge and practical skills in the maintenance, breeding, feeding of marals, production technology of maral breeding.

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 6 To use the biological characteristics of animals that have a decisive influence on the technology of production of animal products.

Prerequisites

Cultivation and selection of farm animals

Postrequisites

Commodity science and expertise of livestock raw materials

Embryoengineering

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30732 (3012668)
Course	3
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

Mastering the theory and practice of micromanipulation with embryos and gametes, applying the achievements of molecular and cellular technologies in order to preserve the existing small and endangered animal breeds. Developmental biology, the process of in vitro fertilization and other assisted reproductive technologies in animal husbandry, the processes of cloning DNA fragments, genome sequencing, genome mapping, the use of assisted reproductive technologies, bioengineering methods for preserving the gene pool of animals are considered.

Purpose of studying of the discipline

Master the course on the theory and practice of embryos and gametes for students.

Learning Outcomes

ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites

Cultivation and selection of farm animals

Postrequisites

Commodity science and expertise of livestock raw materials

Animal biotechnology

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30738 (3012679)
Course	3
Term	2
Credits count	7
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	30hours
Independent work of a student under the guidance of a teacher	45hours
Independent work of the student	90hours
Total	210hours
Knowledge control form	Examination

Short description of discipline

The discipline is aimed at studying the subject and basic concepts of animal biotechnology. The course examines the directions and methods of animal biotechnology research, its importance for breeding, breeding, animal reproduction biotechnology, as well as molecular genetic and cellular foundations of ontogenesis, mastering cultural, embryoengineering, embryotransplantation methods used in animal husbandry, improving the efficiency of animal husbandry by biotechnology methods, the market of commercial biotechnological products.

Purpose of studying of the discipline

Formation of students ` ideas about the directions and methods of Animal Biotechnology.

Learning Outcomes

ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites

Cultivation and selection of farm animals

Postrequisites

Cattle breeding

Plant biotechnology

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30739 (3012680)
Course	3
Term	2
Credits count	7
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	30hours
Independent work of a student under the guidance of a teacher	45hours
Independent work of the student	90hours
Total	210hours
Knowledge control form	Examination

Short description of discipline

The discipline is aimed at revealing modern ideas about plant biotechnology. Studies the most important stages in the history of the development of biological methods of plant cell cultivation, the study of the basic principles and methods of cellular and genetic engineering of higher plants, as well as cryopreservation and its application to plant cell cultures, including the features of secondary differentiation in plant cultures, the cultivation of plant cells in vitro, the production of callus and suspension cultures.

Purpose of studying of the discipline

Providing students with a complete understanding of plant biotechnology

Learning Outcomes

ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites

Cultivation and selection of farm animals

Postrequisites

Cattle breeding

Food biotechnology

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30740 (3012681)

Course	3
Term	2
Credits count	7
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	30hours
Independent work of a student under the guidance of a teacher	45hours
Independent work of the student	90hours
Total	210hours
Knowledge control form	Examination

Short description of discipline
To give students a complete understanding of plant biotechnology, the course examines the prospects for development and current issues of food biotechnology as an important priority area of science. Examines the systematization of biotechnological bases for processing plant and animal raw materials in the field of enzymatic bioconversion technologies, methods and methods for creating genetically modified food sources and regulating their use in legislation, the use of significant biotechnological processes in food production.

Purpose of studying of the discipline
Full education of students about food biotechnology.

Learning Outcomes
ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites
Cultivation and selection of farm animals

Postrequisites
Cattle breeding

Computer modelingin animal husbandry

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30789 (3012674)
Course	4
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 mastering the knowledge and skills of computer modeling in animal husbandry. The specific features of models and their classification, structural processes in modeling, the special role of the model in the study of complex systems, the main methods in the construction and analysis of system models, planning of simulation programs MatLab and MathCAD, analysis and interpretation of the simulation results in programs are considered.

Purpose of studying of the discipline
Formation of students ` knowledge and skills in computer modeling in animal husbandry

Learning Outcomes
ON 3 To recommend modern information technologies in the production and processing of livestock products, scientific achievements in assessing the quality of feed and products, in standardization and certification of livestock products, to argue the need for mechanization and automation of technological processes.

Prerequisites
Poultry breeding

Postrequisites
Undergraduate practice

Expert systems in forecasting livestock products

Discipline cycle	Basic disciplines
Discipline component	Electives
SubjectID	30788 (3012673)
Course	4
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 theoretical knowledge and practical skills when using expert systems in forecasting livestock products. The functioning of a static and dynamic expert system, the use of an artificial intelligence expert system, methods and methods of constructing an expert system, a subject-oriented expert system and possible ways of their implementation, the design of a professionally oriented information system using artificial intelligence technologies and knowledge engineering are considered.

Purpose of studying of the discipline
Students fully master the theoretical and practical aspects of the use of expert systems in forecasting livestock products

Learning Outcomes
ON 3 To recommend modern information technologies in the production and processing of livestock products, scientific achievements in assessing the quality of feed and products, in standardization and certification of livestock products, to argue the need for mechanization and automation of technological processes.

Prerequisites
Poultry breeding

Postrequisites
Undergraduate practice

Agricultural economy

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30803 (3012672)
Course	4
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
It is aimed at studying the specifics of activities in agricultural production, forms and consequences of state regulation in the agricultural sector. Studies the world agrarian system, the practice of agrarian reforms in the conditions of transitional periods of economic transformations, the effectiveness of the bending supply curve, methods of state intervention in the market, integration in cooperation of producers or trade protectionism, methods of assessing the level of state support for the agricultural sector of the economy.

Purpose of studying of the discipline
Formation of students ` understanding of the forms and consequences of state regulation in the agricultural sector.

Learning Outcomes
ON 7 Develop and carry out measures to increase various production indicators of animal husbandry, analyze and plan technological processes as objects of management, the work of a team of performers, making financial and managerial decisions in conditions of different opinions.

Prerequisites
Breeding business in animal husbandry

Postrequisites
Undergraduate practice

Accounting in agriculture

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30802 (3012671)
Course	4
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
Mastering knowledge and practical skills of accounting in agriculture, having certain features related to the production of products, as well as the nature of services and labor provided, forms of sales, technological features. The methods of accounting for animals during cultivation and fattening, as well as cost accounting and calculation of the cost of livestock products, including accounting for agricultural products and their sale, mandatory insurance of the company`s property are considered.

Purpose of studying of the discipline
Formation of students ` understanding of accounting in agriculture.
Learning Outcomes
ON 7 Develop and carry out measures to increase various production indicators of animal husbandry, analyze and plan technological processes as objects of management, the work of a team of performers, making financial and managerial decisions in conditions of different opinions.
Prerequisites
Breeding business in animal husbandry
Postrequisites
Undergraduate practice

Information technologies in animal breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30797 (3012654)
Course	4
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
Acquisition by students of knowledge about information technologies and the development of basic software products used in modern practice and fully ensuring the solution of breeding tasks in animal husbandry. Computer technologies, software, the concept and characteristics of an automated workplace, management of the production process and breeding work using the IAS program, skills of understanding the capabilities of computer technologies and software are considered.
Purpose of studying of the discipline
The study by students of the system of collecting, accumulating, storing, processing and transmitting information to different levels of breeding management in the conditions of a large- scale approach to solving the problem with intensive technologies of livestock production
Learning Outcomes
ON 3 To recommend modern information technologies in the production and processing of livestock products, scientific achievements in assessing the quality of feed and products, in standardization and certification of livestock products, to argue the need for mechanization and automation of technological processes.
Prerequisites
Poultry breeding
Postrequisites
Undergraduate practice

Horse breeding

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30793 (3012645)
Course	4
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	0hours
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
Formation of knowledge and skills about working, productive and sports horse breeding. Horse breeds, features of keeping and feeding horses, reproduction of horses, basic principles and techniques of breeding work in horse breeding, technology of production of horse meat, mare`s milk, koumiss, export of horses, training and testing of horses, information about national equestrian games, types of working use of horses in agricultural production are considered.
Purpose of studying of the discipline
To train specialists capable on the basis of knowledge of the biotechnical and economically useful features of horses, to properly organize the breeding, cultivation and use of horses in the national economy in enterprises of various forms of ownership
Learning Outcomes
ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields,

pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.

Prerequisites

Breeding business in animal husbandry

Postrequisites

Undergraduate practice

Cattle breeding

Discipline cycle	Profiling discipline
Discipline component	University component
SubjectID	30744 (3012644)
Course	4
Term	1
Credits count	8
Lections	15hours
Practical and seminar classes	45hours
Laboratory works	15hours
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 focuses on the ability to understand and analyze the technology of production of livestock products. The article considers the exterior and constitutional indicators of cattle; systems, methods of keeping and feeding young animals; dairy, meat and by-products of cattle; herd reproduction; classification of cattle breeds; breeding by lines and families; selection and selection; current technologies for milk and beef production.

Purpose of studying of the discipline

To prepare highly specialized specialists with knowledge on feeding, keeping and breeding of cattle, as well as milk and beef production technology, which are necessary not only in theoretical terms

Learning Outcomes

ON 2 Apply modern methods and techniques of keeping, feeding, breeding and efficient use of animals, rationally use feed, hayfields, pastures and other forage lands and own various methods of harvesting and storing feed.
ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.

Prerequisites

Breeding business in animal husbandry

Postrequisites

Undergraduate practice

Standardization and certification of livestock products

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30808 (3012687)
Course	4
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 studies the basics of standardization, metrology, assessment of product quality compliance with requirements and regulatory documents, product safety, consumer properties of agricultural products, quality regulation. It includes a general description of standards of different categories and types, a general description of technical regulation, the concept of technical regulations, sanitary and hygienic requirements for product safety, organizational and methodological foundations of standardization, quality and consumer properties of products, standardization of livestock products.

Purpose of studying of the discipline

To explain to students about Standardization, Metrology, assessment of product quality for compliance with requirements and regulatory documents.

Learning Outcomes

ON 10 To develop and carry out measures for the management of technological processes for primary processing, standardization and certification of livestock products, commodity science and expertise of livestock raw materials, to assess the costs of ensuring product quality, adaptation of modern versions of quality management systems to specific production conditions.

Prerequisites
Maral breeding
Postrequisites
Undergraduate practice

Technology of primary processing of animal products

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30792 (3012641)
Course	4
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	0hours
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
Formation of students` knowledge and skills in managing technological processes for the primary processing of animal products. The rules of transportation of slaughtered animals to the meat processing plant, the schedule of receiving and handing over animals for slaughter, primary processing of slaughtered animals, technologies for processing slaughter products, fat, blood, intestinal and endocrine raw materials, technologies for processing leather and fur raw materials, technologies for preserving and storing meat and meat products are considered.
Purpose of studying of the discipline
Formation of theoretical and practical skills of students in the management of technological processes from the reception and delivery of animals and poultry to processing enterprises and the primary processing of livestock products to the sale of finished products.
Learning Outcomes
ON 10 To develop and carry out measures for the management of technological processes for primary processing, standardization and certification of livestock products, commodity science and expertise of livestock raw materials, to assess the costs of ensuring product quality, adaptation of modern versions of quality management systems to specific production conditions.
Prerequisites
Maral breeding
Postrequisites
Undergraduate practice

Commodity science and expertise of livestock raw materials

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30801 (3012670)
Course	4
Term	1
Credits count	5
Lections	15hours
Practical and seminar classes	30hours
Laboratory works	0hours
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
Mastering theoretical and practical skills in the field of commodity science and expertise of livestock raw materials by students. Animal raw materials are considered as a product of industrial use, types of classification and coding of animal raw materials, assortment of animal raw materials and analysis of its structure, methods of assessing the quality indicators of animal raw materials, problems of information support of commodity science and examination of goods, commodity science and examination in customs.
Purpose of studying of the discipline
Formation of students` theoretical and practical skills in commodity science and expertise of animal raw materials
Learning Outcomes
ON 10 To develop and carry out measures for the management of technological processes for primary processing, standardization and certification of livestock products, commodity science and expertise of livestock raw materials, to assess the costs of ensuring product quality, adaptation of modern versions of quality management systems to specific production conditions.
Prerequisites
Breeding business in animal husbandry
Postrequisites
Undergraduate practice

Undergraduate practice

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30743 (3012658)
Course	4
Term	2
Credits count	15
Study practics	450hours
Total	450hours
Knowledge control form	Total mark on practice

Short description of discipline

Consolidation, expansion, deepening and systematization of theoretical knowledge acquired by students in the study of general scientific, professional disciplines based on the study of the activities of a particular enterprise, institution or organization and the acquisition of deeper practical skills in the specialty of future work, as well as adaptation to the labor market. Independent research work when collecting materials for a thesis. When conducting experiments, compliance with the main stages of research work, analysis of the results obtained.

Purpose of studying of the discipline

Consolidation, expansion, deepening and systematization of theoretical knowledge acquired by students in the study of general scientific and professional disciplines based on the study of the activities of a particular enterprise, institution or organization and the acquisition of deeper practical skills in the specialty and profile of future work, as well as adaptation to the labor market

Learning Outcomes

ON 5 Predict the consequences of changes in feeding, breeding and keeping of animals, determine modern technologies for the production of livestock products and reasonably make specific technological decisions.
ON 8 To use the laws, methods and techniques of genetics, breeding and biotechnology, to offer and defend their point of view when choosing modern genetic and biotechnological methods in breeding work.

Prerequisites

Internship II

Postrequisites

Final examination

Internship III

Discipline cycle	Profiling discipline
Discipline component	Electives
SubjectID	30742 (3012690)
Course	4
Term	2
Credits count	15
Working practice	450hours
Total	450hours
Knowledge control form	Total mark on practice

Short description of discipline

Consolidation of theoretical knowledge in the studied disciplines, familiarization of students with the nature and features of their future activities based on the development of professional skills and gaining professional experience both within a single organization and in animal husbandry industries. Practical work with modern technologies for the production of livestock products, assessment of the level of state support for the agricultural sector of the economy, technologies for the primary processing of livestock products and basic methods for determining their quality.

Purpose of studying of the discipline

Consolidation of theoretical knowledge in the studied disciplines, familiarization of students with the nature and features of their future activities based on the development of professional skills and gaining professional experience both within a single organization and in animal husbandry industries

Learning Outcomes

ON 7 Develop and carry out measures to increase various production indicators of animal husbandry, analyze and plan technological processes as objects of management, the work of a team of performers, making financial and managerial decisions in conditions of different opinions.
ON 10 To develop and carry out measures for the management of technological processes for primary processing, standardization and certification of livestock products, commodity science and expertise of livestock raw materials, to assess the costs of ensuring product quality, adaptation of modern versions of quality management systems to specific production conditions.

Prerequisites

Internship II

Postrequisites

Final examination

Final Certification

Написание и защита дипломной работы или подготовка и сдача комплексного экзамена.

Diploma work

Credits count	8

Comprehensive exam

Credits count	8

4.Summary table on the scope of the educational program
«6B08201 - Technology of livestock products production»

Name of discipline	Cycle/ Component	Term	Number of credits	Total hours	Lec	SPL	LC	IWST	IWS	Knowledge control form
Module 1. Fundamentals of social and humanitarian knowledge										
Foreign language	GER/CC	1	5	150		45		35	70	Examination
History of Kazakhstan	GER/CC	1	5	150	30	15		35	70	Qualification examination
Kazakh language	GER/CC	1	5	150		45		35	70	Examination
Bases of economics, law and ecological knowledge	GER/US	1	5	150	15	30		35	70	Examination
Russian language	GER/CC	1	5	150		45		35	70	Examination
Physical Culture	GER/CC	1	2	60		60				Differentiated attestation
Kazakh language	GER/CC	2	5	150		45		35	70	Examination
Foreign language	GER/CC	2	5	150		45		35	70	Examination
The module of socio-political knowledge (sociology, political science, cultural studies, psychology)	GER/CC	2	8	240	30	45		55	110	Examination
Russian language	GER/CC	2	5	150		45		35	70	Examination
Physical Culture	GER/CC	2	2	60		60				Differentiated attestation
Information and communication technology	GER/CC	3	5	150	15	15	15	35	70	Examination
Physical Culture	GER/CC	3	2	60		60				Differentiated attestation
World of Abai	BS/US	3	3	90	15	15		20	40	Examination
Physical Culture	GER/CC	4	2	60		60				Differentiated attestation
Philosophy	GER/CC	5	5	150	15	30		35	70	Examination
Module 2. Biological aspects of animal husbandry intensification										
Anatomyofanimals	BS/CCh	1	5	150	15	15	15	35	70	Examination
ntroduction to the specialty	BS/US	1	3	90	15	15		20	40	Examination
Physiologyofanimals	BS/CCh	1	5	150	15	15	15	35	70	Examination
Private animal ethology	BS/CCh	1	5	150	15	15	15	35	70	Examination
Animal Biochemistry	BS/CCh	2	8	240	30	15	30	55	110	Examination
The methodology of experimental business and the basics of patenting	BS/CCh	2	8	240	30	45		55	110	Examination
Fundamentals of research in livestock	BS/CCh	2	8	240	30	45		55	110	Examination
Educational practice	BS/US	2	2	60						Total mark on practice
Biology of individual animal development	BS/US	3	5	150	15	15	15	35	70	Examination

Module 3. Feeding and breeding of farm animals										
Forage production	BS/US	3	5	150	15	15	15	35	70	Examination
Feeding of agricultural animals	BS/US	4	10	300	30	30	30	70	140	Examination and term work/Project
Mechanization and automation of animal husbandry	BS/CCh	4	5	150	15	30		35	70	Examination
Production practice I	BS/US	4	5	150						Total mark on practice
Digitalization in animal husbandry	BS/CCh	4	5	150	15	30		35	70	Examination
Electrification of agriculture	BS/CCh	4	5	150	15	30		35	70	Examination
Zoohyena	BS/US	5	5	150	15	15	15	35	70	Examination
Management in animal husbandry	BS/CCh	5	5	150	15	30		35	70	Examination
Fundamentals of marketing in animal husbandry	BS/CCh	5	5	150	15	30		35	70	Examination
Cultivation and selection of farm animals	BS/US	5	10	300	30	60	0	70	140	Examination
Technology and organization of production of national products	BS/CCh	5	5	150	15	30		35	70	Examination
Module 4. Technologies in small-scale animal husbandry										
Obstetrics and gynecology offarmanimals	BS/CCh	3	5	150	15	30		35	70	Examination
Veterinary and sanitary examination of animal products	BS/CCh	3	5	150	15	30		35	70	Examination
Genetic	BS/US	3	5	150	15	15	15	35	70	Examination
Fish farming	BS/CCh	3	5	150	15	30		35	70	Examination
Histology	BS/CCh	4	5	150	15	15	15	35	70	Examination
Basics of veterinary	BS/US	4	3	90	15	15	0	20	40	Examination
Beekeeping	BS/CCh	4	5	150	15	15	15	35	70	Examination
Cytology	BS/CCh	4	5	150	15	15	15	35	70	Examination
Internship II	BS/US	6	5	150						Total mark on practice
Biometrics	AS/CCh	6	5	150	15	30	0	35	70	Examination
Microbiology	AS/CCh	6	5	150	15	30		35	70	Examination
Breeding business in animal husbandry	AS/CCh	6	5	150	15	30		35	70	Examination
Poultry breeding	AS/US	6	8	240	30	30	15	55	110	Examination
Fur farming	AS/CCh	7	5	150	15	30		35	70	Examination
Karakul breeding	AS/CCh	7	6	180	15	30	15	40	80	Examination
Goat breeding	AS/CCh	7	6	180	15	30	15	40	80	Examination
Rabbit breeding	AS/CCh	7	5	150	15	30		35	70	Examination
Sheep breeding	AS/CCh	7	6	180	15	30	15	40	80	Examination
Pig breeding	AS/CCh	7	5	150	15	30	0	35	70	Examination and term work/Project

Module 5. Modern technologies in animal husbandry										
Technology of livestock products production	AS/US	5	5	150	15	30	0	35	70	Examination
Camel breeding	BS/CCh	6	5	150	15	30	0	35	70	Examination
Maral breeding	BS/CCh	6	5	150	15	30		35	70	Examination
Embryoengineering	BS/CCh	6	5	150	15	30		35	70	Examination
Animal biotechnology	AS/CCh	6	7	210	15	30	30	45	90	Examination
Plant biotechnology	AS/CCh	6	7	210	15	30	30	45	90	Examination
Food biotechnology	AS/CCh	6	7	210	15	30	30	45	90	Examination
Computer modelingin animal husbandry	BS/CCh	7	8	240	30	45		55	110	Examination
Expert systems in forecasting livestock products	BS/CCh	7	8	240	30	45		55	110	Examination
Agricultural economy	AS/CCh	7	5	150	15	30		35	70	Examination
Accounting in agriculture	AS/CCh	7	5	150	15	30		35	70	Examination
Information technologies in animal breeding	AS/CCh	7	8	240	30	45		55	110	Examination
Horse breeding	AS/CCh	7	5	150	15	30	0	35	70	Examination
Cattle breeding	AS/US	7	8	240	15	45	15	55	110	Examination
Standardization and certification of livestock products	AS/CCh	7	5	150	15	30		35	70	Examination
Technology of primary processing of animal products	AS/CCh	7	5	150	15	30	0	35	70	Examination
Commodity science and expertise of livestock raw materials	AS/CCh	7	5	150	15	30	0	35	70	Examination
Undergraduate practice	AS/CCh	8	15	450						Total mark on practice
Internship III	AS/CCh	8	15	450						Total mark on practice
Final Certification										
Diploma work		8	8	240						
Comprehensive exam		8	8	240						