Ministry of Agriculture of the Republic of Kazakhstan
S.Seifullin Kazakh Agrotechnical Research University

Considered
at a meeting of the
Academic Council
of the University
Protocol No. 16
from "27" 05 2021

APPROVED
Deputy Chairman of the Management Board
for academic affairs - rector
NJSC "KATU named after S. Seifullin"
_____ Abdyrov A.M.
"06" 09 2021

**EDUCATIONAL PROGRAM "Safety and quality of food products" (name of program)**

Code and classification of field of education: 7M09-Veterinary
Code and classification of areas of training: 7M091-Veterinary
Code in the International Standard Classification of Education: 7M841-Veterinary
Awarded degree/qualification: Master of Veterinary Sciences in educational program 7M09102 - Safety and quality of food products

Duration of training: 2 years
Full-time form of education

Astana 2023

Full name - academic degree, title, position, place of work

1. Abdrakhmanov Sarsenbay Kadyrovich, doctor of the veterinary science, professor, Dean of the Faculty of Veterinary Medicine and Animal Husbandry Technology, S.Seifullin State Medical University;

2. Adilbekov Zhanat Shabanbaevich, Ph.D., Associate Professor, Head of the Department of Veterinary Sanitation, KATRU named after. S.Seifullin;

3. Maikanov Balgabay Sadepovich, Doctor of Biological Sciences, Professor, S.Seifullin KATRU;

4. Dzhakupov Isatay Tusupovich, Doctor of Veterinary Sciences, Professor, KATRU named after. S.Seifullin;

5. Balji Yuri Alexandrovich, Ph.D., Associate Professor, KATRU named after. S.Seifullin;

6. Mustafina Raikhan Khusainovna, PhD, senior teacher, KATRU named after. S.Seifullin;

7. Sarsebekov Lukman Toleuuly, Director of Production of "Celinaya Delicacies Factory" LLP Talgat Bolatovich Karibaev, Head of the Laboratory for Diagnostics of Infectious Diseases, "National Reference Center in Veterinary " CVCS Ministry of Agriculture of the Republic of Kazakhstan;

8. Turmagambetov Shaken Nurushevich, director, "InvestPromAimak" housing and construction society;

9. Abdulkhalikov Sembay Bagdatshauly, Director of Republican Anti-Epizootic Detachment CVCS Ministry of Agriculture of the Republic of Kazakhstan;

10. Karibayev Talgat Bolatovich, Head of the Laboratory for the Diagnosis of Infectious Diseases, RSE at the National Reference Center in Veterinary Medicine KVKiN Ministry of Agriculture of the Republic of Kazakhstan;

11. Koishibaeva Meiramgul Sailauovna, 4th year student, KATRU named after. S.Seifullin;

12. Tolesh Salamat, 3rd year student, KATRU named after. S.Seifullin.

The team of authors was approved by order of JSC "KATRU named after S. Seifullin" Nő. 6 dated "01" 02 20__.

Educational program "Sanitary and environmental safety of livestock products"reviewed at a meeting of the department of "Veterinary Sanitation", protocol No. 15 dated April 29, 2023 , approved by the Council of the Faculty of Veterinary and Livestock Technology, protocol No. 09 dated May 4, 2023 .

Dean of the Faculty of Veterinary Medicine and Livestock Technology Candidate of Veterinary Sciences, Associate Professor, Abdrakhmanov S.K.

Head of the Department of Veterinary Sanitation Candidate of Veterinary Sciences, Associate Professor Adilbekov Zh.Sh.

# Content

## 1. Passport of the educational program

### 1.1 Purpose of the educational program:

The purpose of the educational program is for undergraduates to master the issues of ensuring the quality and safety of food products, protecting the population from diseases common to animals and humans in accordance with the requirements of state veterinary and sanitary control and supervision of the legislation of the Republic of Kazakhstan, as well as the international requirements of the Customs Union and the World Trade organizations and recommendations of international veterinary organizations (OIE, FAO, WHO, etc.).

The main objectives of the educational master's program in the specialty "7M091 – Veterinary Medicine" are:

- teach master's students modern methods of practical organization and conduct of work on veterinary and sanitary examination of food products;
- familiarize undergraduates with the main groups of foreign substances contained in food products that can cause harm to the body of animals and humans;
- teach methods for determining the main foreign substances contained in food products;
-provide an individual educational trajectory in accordance with the specialization chosen by undergraduates;
- to develop in students the ability for self-improvement and mastery of new knowledge;
-promote the acquisition of skills for participation in scientific events at various levels, the continuation of scientific training in a master's degree.

This program is designed taking into account the requirements of potential employers who need specialists to work in veterinary and sanitary examination and food safety laboratories.

### 1.2. Learning outcomes

**LO1.** Understand the main philosophical problems of the development of modern science and evaluate its relationship with the history of the development of science, integrate knowledge of higher school pedagogy, management psychology into research activities using foreign languages (professional).

**LO2.** Integrate the theory and experimental methods with the results of research work and interpret them taking into account the field of study.

**LO3.** Have knowledge in the field of intellectual property and copyright protection, conduct patent and information research and prepare national and international applications for inventions.

**LO4.** Possess knowledge and skills of working with international standards adopted by the International Commission Codex Alimentarius FAO / WHO, modern methods of food research, innovative technologies for managing food quality and safety, national and traditional agricultural products (TradPro).

**LO5.** Own modern methods for determining the nutritional value, quality and safety of food products, know how to work on measuring equipment.

**LO6.** To know the basics of the technology of production of veterinary drugs, legislative acts, the main aspects of registration, testing and control over the circulation of veterinary drugs.

**LO7.** To master the skills of correct presentation of data and analysis of the results of their own research using the methods of descriptive and analytical statistics, as well as the use of statistical terminology.

**LO8.** To formulate the basic principles of the organization of veterinary and sanitary measures, to know the methods of diagnosing diseases of infectious and invasive etiology, as well as to present the methodology of therapeutic and preventive measures for these pathologies.

**LO9.** Possess knowledge in the field of herd health management, ensuring biosafety and hygiene of productive animals, skills in analyzing and assessing the risk of the occurrence and spread of infectious animal diseases, using information and communication technologies.

**LO10.** Integrate scientific concepts on the application of knowledge in the field of ergonomics and animal husbandry rules aimed at maintaining animal health and obtaining quality products, master the main aspects of preventive work in livestock farms and in settlements.

**LO11.** To understand modern problems in veterinary medicine and formulate the main ways to solve them, taking into account the social and ethical standards of responsibility associated with the use of acquired knowledge and judgments.

## 2. General characteristics of the educational program

The educational program in the specialty "7M091 - Veterinary Medicine" was developed in accordance with the National Qualifications Framework and professional standards, agreed with the Dublin descriptors and the European Qualifications Framework, based on the State Compulsory Standard for Postgraduate Education, Master's Degree, approved by the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31 2018 No. 604, registered with the Ministry of Justice of the Republic of Kazakhstan on November 1, 2018 No. 17669.

The educational program is designed on the basis of a modular system of studying disciplines and contains 13 modules that form special and professional competencies.

The total number of credits for this educational program is 120 credits, of which: the total number of credits for theoretical training is 64 credits, including practical training (all types of practices) – 20 credits, NIRM – 24 credits, Final certification – 12 credits.

A catalog of elective disciplines has been developed for the curriculum, providing students with the opportunity to alternatively choose elective academic disciplines.

### 2.1 Relevance:

Master's studies develop specialized and analytical competencies and prepare the foundation for a scientific or managerial career. With such qualifications, it is easier to get a prestigious job and take off in your career from a higher starting position. In addition, a master's degree is a mandatory requirement

for those who plan to study for a master's degree, continue research and become part of the scientific community.

**2.2 Uniqueness:**

The educational program is based on the principles:

- a competency-based approach to education, ensuring variability and different levels of proposed educational programs and educational services; - coordination and mutual adaptation of curricula and programs; - logical completeness of education at each level of training; - ensuring satisfaction of student requests depending on abilities; - connections between theory and practice; - orientation of educational programs towards learning outcomes.

**3. Competency model (portrait) of a graduate**

3.1 Areas of professional activity

- veterinary and sanitary examination laboratories;
- food safety laboratories;
- own control laboratories;
- environmental organizations;
- forensic centers for districts and regions;
-National Center of Expertise;
- National Center of Expertise and Certification
- in organizations of secondary, higher and additional vocational education in technical and agricultural areas, research, design organizations and in production;
- research activities in the field of education and production in the field of promotion of workers in accordance with specialization.

**3.2 Types of professional activities**

- expert supervision;
- production and technological;
- organizational and managerial;
- scientific research;
- projectal;
- educational.

**3.3 General educational competencies (with State Educational Standards)**

- awareness of the social significance of the profession, possession of motivation to carry out professional activities;
- the ability to use systematized theoretical and practical knowledge of the humanities and social sciences in solving social and professional problems;
- mastery of the methodology of scientific experiment and analysis of factual material in the field of veterinary medicine for practical application in professional activities;
- skills to work on modern means of information and communication technology.

**3.4 Basic competencies (with SES)**

1) ensuring food safety:

- quality control and safety of finished products and livestock raw materials;
- carrying out veterinary measures to improve the productive qualities of animals;
- ensuring the production of animal products of good quality in veterinary and sanitary terms;

2) ensuring the biosafety of humans and animals:

- diagnosis, prevention and elimination of contagious and non-contagious diseases of animals, birds, fish and bees;
- protection of the population from diseases common to humans and animals;
- protection of the country's territory from the introduction of infectious diseases;
- compliance with veterinary and sanitary rules in the production and sale of biological products and medicines.

3) ensuring environmental safety:

- protection of the territory from anthropozoonotic diseases;
- protection of the country's territory from poor-quality waste from the food industry, enterprises producing raw materials and biological products.

4) educational;

5) organizational;

6) production and technological;

7) projectal.

**3.5 Professional competencies (with State Educational Standards)**

- the ability to navigate such modern scientific concepts as unified health, animal welfare, which explain unity, diversity and approaches to veterinary practice;
- willingness to apply methods of comprehensive analysis of the data obtained to explain specific veterinary facts and problems;
- skills in applying general scientific and special principles and methods of cognition in analysis;
- be able to synthesize theoretical, practical and ethical elements of professional competence;
- ability to develop and implement specialized training programs in educational institutions of veterinary and biological profiles;
- ability to use special knowledge acquired as part of the educational trajectory of undergraduates.

**Structure of the master's degree educational program in the scientific and pedagogical direction**

| p/c № | Name of subject cycles and types of activities | Total labor capacity | |
|---|---|---|---|
| | | per academic hour | per academic credit |
| 1 | 2 | 3 | 4 |
| 1. | Theoretical training | 2640 | 88 |
| 01 | Basic subjects (BP) cycle | 1050 | 35 |
| 1) | Higher education institution component (HE): | 600 | 20 |
| | including: | | |
| | History and philosophy of science | | |
| | Foreign language (professional) | | |
| | Higher school pedagogy | | |
| | Management psychology | | |
| | Pedagogical practice | | |
| 2) | Selective component (TC) | 450 | 15 |
| 02 | Cycle of visual subjects | 1590 | 53 |
| 1) | Higher education component (HE) | | |
| 2) | Selective component (TC) | | |
| 3) | Research practice | | |
| 2 | Research work of a graduate student | 720 | 24 |
| 1) | Research work of a master's student, which includes an internship and the execution of a master's thesis. | 720 | 24 |
| 3 | Additional types of education (OCT) | | |
| 4 | Final attestation (CA) | at least 240 | at least 8 |
| 1) | Formalization and defense of the master's thesis (MDRDK) | 240 | 8 |
| | Everything | at least 3600 | at least 120 |

## Appendix 1. Academic calendar

**Approve**
Chairman of the Academic Council
NJSC "Seifullin KATIUS "
_____ Tireuov K.M.
«29» 05 2023 y.

**ACADEMIC CALENDAR**
for 2023-2024 academic year
by levels of training
(MASTER)

| | | |
|---|---|---|
| 1 | Presentation week, registration for disciplines | 1 course August 28 - 31 |
| **2** | **I semester** | **September 1 - December 15** |
| ***3*** | ***Constitution day*** | ***August 30*** |
| 4 | Knowledge Day | September 1 |
| ***5*** | ***Republic Day*** | ***October 25*** |
| ***6*** | ***Independence Day*** | ***December 16*** |
| 7 | Exam session | December 18 - 29 |
| 8 | Passing FX | December 18 -29 |
| ***9*** | ***New Year's Holiday*** | ***January 1, 2*** |
| 10 | Holidays | January 1-26 |
| **11** | **II semester** | **January 29 to May 10** |
| ***12*** | ***International Women's Day*** | ***March 8*** |
| ***13*** | ***Holiday Nauryz*** | ***March 21,22,23*** |
| ***14*** | ***Holiday of unity of the people of Kazakhstan*** | ***May 1*** |
| ***15*** | ***Defender of the Fatherland Day*** | ***May 7*** |
| ***16*** | ***Victory Day*** | ***May 9*** |
| 17 | Exam session | from May 13 to May 24 |
| 18 | Passing FX | May 13 - 31 |
| 19 | Registration for the summer semester | May 27 - 31 |
| 20 | Final examination | until June 30 |
| 21 | Summer semester | from June 3 to July 12 |
| 22 | Holidays | from May 27 to August 31 |
| ***23*** | ***Capital Day*** | ***July 6*** |
| | Practice* | |

Approved by the Academic Council of NJSC «S. Seifullin KATIU», protocol № 16, 29.05. 2023 y.

***Note:*** If it coincides with a weekend or a holiday, the lesson begins on the next working day.

* Types and terms of professional practice are determined by the working Curriculum of Educational Programs.

Appendix 1 to the Academic Calendar
Approved by the Scientific Council of the NAO "KATRU named after S.Seifullin", Protocol No. 16 of 29.05.2022

**Schedule of the educational process for the 2023-2024 academic year for the educational program of the Faculty of Veterinary and Animal Husbandry Technology**
**Magistracy**

**2023-2024 academic year**

| Course | Aug | September | | | | October | | | | | November | | | | December | | | | January | | | | | February | | | | March | | | | April | | | | May | | | | June | | | | July | | | | August | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 28 | 4 | 11 | 18 | 25 | 2 | 9 | 16 | 23 | 30 | 6 | 13 | 20 | 27 | 4 | 11 | 18 | 25 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 | 4 | 11 | 18 | 25 | 1 | 8 | 15 | 22 | 29 | 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 |
| | 1 | 8 | 15 | 22 | 29 | 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 | 2 | 9 | 16 | 23 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 | 3 | 10 | 17 | 24 | 31 | 7 | 14 | 21 | 28 | 5 | 12 | 19 | 26 | 2 | 9 | 16 | 23 | 30 |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 |
| M082 - " Biotechnology", Educational program TM05101 -"Veterinary biotechnology" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | PW | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | RP/P/TD/H | RP/P/H | RP/P/H | RP/P/H | RP/P/H | RP/P/H | S/H | H | H | H | H | H | H | H |
| II | | RP | RP | RP | RP | . | . | . | . | . | . | . | PP | PP | . | . | E/P | E/P | H | H | H | H | H | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | FE | FE | FE | FE | FE | FE | FE | | | | | | | | |
| M082 - " Biotechnology", Educational program TM05102 -"Plant Biotechnology" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | PW | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | RP/P/TD/H | RP/P/H | RP/P/H | RP/P/H | RP/P/H | RP/P/H | S/H | H | H | H | H | H | H | H |
| II | | RP | RP | RP | RP | . | . | . | . | . | . | . | PP | PP | . | . | E/P | E/P | H | H | H | H | H | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | FE | FE | FE | FE | FE | FE | FE | | | | | | | | |
| M082 - " Biotechnology", Educational program TM05101 -"Veterinary biotechnology"(winter reception 2023-2025) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I wtn | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II wtn | | | | | | | | | | | | | | | | | | | | | | | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | PP. | PP. | E/P | RP | RP/P/TD/H | RP/P/H | RP/P/H | RP/P/H | S/H | S/H | S/H | H | H | H | H | H | H | H |
| M082 - " Biotechnology", Educational program TM05101 -"Veterinary biotechnology"(winter reception 2024-2026) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I wtn | | | | | | | | | | | | | | | | | | | | | | | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | H | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |
| M138 - Veterinary science TM09101 EP "Veterinary" diagnostics, treatment and prevention of animal diseases, direction: scientific and pedagogical | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | PW | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | . | . | . | . | TP/. | TP/. | TP/. | TP/. | . | . | . | . | . | . | . | . | E/P | E/P | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |
| II | | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | . | . | . | . | . | . | E/P | H | H | H | H | H | RP | RP | RP | RP | RP | RP | U | U | U | U | U | U | U | U | U | U | FE | FE | FE | FE | FE | FE | | | | | | | | |
| M138 - Veterinary science TM09101 EP "Veterinary" diagnostics, treatment and prevention of animal diseases, direction: scientific and pedagogical (winter reception) 2023-2025 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I new | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II new | | | | | | | | | | | | | | | | | | | | | | | | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | . | . | . | . | . | . | E/P | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |
| M138 - Veterinary science TM09101 EP "Veterinary" diagnostics, treatment and prevention of animal diseases, direction: scientific and pedagogical (winter reception) 2024-2026 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I wtn | H | | | | | | | | | | | | | | | | | | | | | | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |
| M138 - Veterinary science TM09101 EP "Veterinary" diagnostics, treatment and prevention of animal diseases, direction: scientific and pedagogical (winter reception) 2022-2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II new | | U | U | U | U | U | U | U | U | U | FE | FE | FE | FE | FE | FE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M138 - Veterinary science TM09102 EP "Safety and quality of food production" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | PW | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | . | . | TP/. | TP/. | TP/. | TP/. | RP | RP | RP | RP | RP | RP | RP | RP | RP | E/P | E/P | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |
| II | H | RP | RP | RP | RP | RP | RP | RP | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | RP | RP | RP | RP | RP | RP | U | U | U | U | U | U | U | U | U | FE | FE | FE | | | | | | | | | | | | |
| M132 Animal breeding. Educational program TM08201 - "Feed and feeding of farm animals", TM08202 "Selection and reproduction of agricultural animals" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I | PW | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |
| II | | RP | RP | RP | RP | RP | RP | . | . | . | TP/. | TP/. | TP/. | TP/. | . | . | E/P | E/P | H | H | H | H | H | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | U | U | U | U | U | U | FE | FE | FE | FE | FE | FE | | | | | | | | |
| M132 Animal breeding. Educational program TM08201 - "Feed and feeding of farm animals" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I wtn | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | H | H | H | H | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II wtn | | | | | | | | | | | | | | | | | | | | | | | | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | RP | TP/. | TP/. | TP/. | TP/. | E/P | E/P | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |
| M132 Animal breeding. TM08202 "Selection and reproduction of agricultural animals" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II wtn | | U | U | U | U | U | U | U | U | U | FE | FE | FE | FE | FE | FE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M132 Animal breeding. Educational program TM08101 - "Feed and feeding of farm animals" (winter reception) 2024-2026 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I wtn | | | | | | | | | | | | | | | | | | | | | | | | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | E/P | E/P | P/TD/H | S/H | S/H | S/H | S/H | S/H | S/H | H | H | H | H | H | H |

**Conventions**

PW - presentation week
• - theoretical training
E -examination session
S - summer semester
RP - research practice
TP - teaching practice
U - undergraduate research work
TD - enrollment in disciplines
P - passing FX
H - holidays
FE- final examination

# Приложение 2. Рабочий учебный план

The Ministry of Agriculture of the Republic of Kazakhstan
S.Seifullin Kazakh Agrotechnical Research University

Considered at the meeting
of Academic Council
of the University
Protocol № ____
“ ___ ” _____ 20___ y.

APPROVED
The member of the board
is the vice-rector for academic affairs
“KATRU”
_____ Abisheva R.D.
“ ___ ” _____ 20___ y.

**WORKING CURRICULUM**
**For the modular education program “Safety and quality of food production”**
Field of education 7M09 – Veterinary
Direction of training 7M091 –
In specialty M138 – Veterinary science
Course years 2023-2025
Degree : Master's program by specialization (Scientific & pedagogical direction)
Form of education: Full-time (MS 2 years) semester
Entry year : 25-05-2023

| Module code | Module name | Discipline cycle | Discipline component | Code of subject | Subject name | Academic credits | Control in the academic period | | | | Volume of hours | | | | | | | Distribution of credits per | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Exams | Differentiated test(practice) | Differentiated test(course paper) | Practice/ SRW | Total | In-class learning | including | | | Self-study work of Ms | Self-study work of Ms | 1 course | | 2 course | |
| | | | | | | | | | | | | | Lectures | Practice | Lab practicals | | | 1 | 2 | 3 | 4 |
| | | | | | | | | | | | | | | | | | | Number of weeks in the academic | | | |
| | | | | | | | | | | | | | | | | | | 15 | 15 | 15 | 15 |
| | | | | | General modules | | | | | | | | | | | | | | | | |
| 1 | Social sciences | BS | UC | PVSH 5213 | Pedagogics of higher school | 3 | 1 | | | | 90.0 | 30.0 | 1/15 | 1/15 | | 1/15 | 3/45 | 3.0 | | | |
| 2 | | BS | UC | PU 5213 | Psychology of management | 5 | 1 | | | | 150.0 | 45.0 | 1/15 | 2/30 | | 2/30 | 5/75 | 5.0 | | | |
| 3 | | BS | UC | IFN 5213 | History and philosophy of science | 5 | 1 | | | | 150.0 | 45.0 | 1/15 | 2/30 | | 2/30 | 5/75 | 5.0 | | | |
| 4 | | BS | CS | PP 5203 | Pedagogical training | 2 | | | | | 60.0 | | | | | | | | 2.0 | | |
| 5 | Professional english | BS | UC | IYaP 5214 | Foreign language (professional). | 5 | 1 | | | | 150.0 | 45.0 | 1/15 | 2/30 | | 2/30 | 5/75 | 5.0 | | | |
| | | | | | Modules of specialty/education programm | | | | | | | | | | | | | | | | |
| 6 | Safety of livestock products, crop and hydrobiont | BS | ES | SPV 5207 | Modern problems of veterinary | 5 | 2 | | | | 150.0 | 45.0 | 1/15 | | 2/30 | 2/30 | 5/75 | | 5.0 | | |
| 7 | | AS | ES | CAEPP 5305 | Codex Alimentarius in the examination of food products | 5 | 1 | | | | 150.0 | 45.0 | 1/15 | | 2/30 | 2/30 | 5/75 | 5.0 | | | |
| 8 | Veterinary ergonomics | AS | ES | VE 6303 | Veterinary ergonomics | 5 | 3 | | | | 150.0 | 45.0 | 1/15 | | 2/30 | 2/30 | 5/75 | | | 5.0 | |
| 9 | Veterinary-sanitary examination of livestock products | BS | ES | PZIS 5205 | Patenting and intellectual property protection | 5 | 2 | | | | 150.0 | 45.0 | 1/15 | 2/30 | | 2/30 | 5/75 | | 5.0 | | |
| 10 | | AS | ES | VSKSE 6304 | Veterinary and sanitary control in EurAsEC system | 5 | 3 | | | | 150.0 | 45.0 | 1/15 | | 2/30 | 2/30 | 5/75 | | | 5.0 | |
| 11 | | AS | ES | VSEOP 6306 | Veterinary and sanitary examination of organic products | 5 | 3 | | | | 150.0 | 45.0 | 1/15 | | 2/30 | 2/30 | 5/75 | | | 5.0 | |
| 12 | Standardization and certification of veterinary preparations | AS | ES | TPKVP 6301 | Technology of production and control of veterinary drugs | 5 | 3 | | | | 150.0 | 45.0 | 1/15 | | 2/30 | 2/30 | 5/75 | | | 5.0 | |
| 13 | Research practice | AS | CS | IP 5307 | Research practice | 9 | | | | | 270.0 | | | | | | | | 9.0 | | |
| 14 | | AS | CS | IP 6307 | Research practice | 8 | | | | | 240.0 | | | | | | | | | 8.0 | |
| 15 | | AS | CS | IP 6307 | Research practice | 5 | | | | | 150.0 | | | | | | | | | | 5.0 |
| 16 | Veterinary-sanitary examination of foods products | AS | UC | TME 5308 | Theory and Methods experiment | 6 | 1 | | | | 180.0 | 60.0 | 2/30 | | 2/30 | 2/30 | 6/90 | 6.0 | | | |
| 17 | | BS | ES | TVSETP 5206 | Target in veterinary and sanitary inspection Trad Pro | 5 | 2 | | | | 150.0 | 45.0 | 1/15 | | 2/30 | 2/30 | 5/75 | | 5.0 | | |
| | | | | | | | | | | | | | | | | | | | | | |
| 18 | | RW | CS | NIRMVVMD 5501 | Master student's research work, including implementation of master's thesis | 5 | | | | | 150.0 | | | | | | | | 5.0 | | |
| 19 | | RW | CS | NIRMVVMD 6502 | Master student's research work, including implementation of master's thesis | 2 | | | | | 60.0 | | | | | | | | | 2.0 | |
| 20 | | RW | CS | NIRMVVMD 6504 | Master student's research work, including implementation of master's thesis | 17 | | | | | 510.0 | | | | | | | | | | 17.0 |
| **Total of theoretical course** | | | | | | 64 | 13 | 0 | 0 | 0 | 3360 | 585 | 210 | 135 | 240 | 375 | 960 | | | | |
| AC | **Additional courses** | | | | | 48 | | | | | 1440.0 | | | | | | | | | | |
| PP | Teaching practice | | | | | 2 | | 2 | | 2 | 60 | | | | | | | | | | |
| RP | Research practice | | | | | 22 | | 2, 3, 4 | | 4 | 660 | | | | | | | | | | |
| MSSRW | Master student's research work, including implementation of master's thesis | | | | | 24 | | | | 2, 3, 4 | 720 | | | | | | | | | | |
| FA | **Final attestation** | | | | | 8 | | | | | 240.0 | | | | | | | | | | |
| | Registration and protection of master's dissertation | | | | | 8 | | | | 4 | 240 | | | | | | | | | | |
| | Total | | | | | 120 | | | | | 3600 | 585 | 210 | 135 | 240 | 375 | 960 | | | | |

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Chief of postgraduate study department — Жургенов Жакенбай Сарсенбаевич
Dean of faculty — Абдрахманов Сарсенбай Кадырович
Head of department — Адильбеков Жанат Шабанбаевич
Chair of methodic committee of faculty
Representative of employers – position, Surname, given name, patronymic

**Appendix 3. Matrix of achievability of the generated learning outcomes in the educational program using academic disciplines**

| № | Name of the discipline | Brief description of the discipline (30-50 words) | Number of credits | Generated learning outcomes (codes) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | LO1 | LO 2 | LO 3 | LO 4 | LO 5 | LO 6 | LO 7 | LO 8 | LO 9 | LO 10 | LO 11 |
| Cycle of basic disciplines<br>University component | | | | | | | | | | | | | | |
| | History and philosophy of science | Forms the skills of a methodological and dialectical approach to scientific research, generalizes philosophical knowledge for a reasonable choice of methods of scientific research, analyzes the criteria for scientific character and effectiveness of research work. | 5 | | | | | | | | | | | |
| | Foreign language (professional) | Forms foreign language communicative competence as a significant component of professional competence and the culture of scientific writing among students, which allows them to integrate into international scientific activities, allows them to freely operate the scientific and conceptual apparatus in their specialty, expand the scientific and information base, acquire broad scientific knowledge, identify promising areas of professional and scientific activities. | 5 | | | | | | | | | | | |
| | Pedagogics of | Forms an understanding of common problems, methodological and theoretical foundations of Higher | 3 | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | higher school | School pedagogy, professional thinking, elements of modern technologies of analysis, planning and organization of training and education. Reveals the current problems of higher education, trends in its development, content and technology of education. | | | | | | | | | | | | | |
| | Psychology of management | Studies the laws, basic concepts, various concepts of management psychology, socio-psychological characteristics of a person and a team in management activities, professional interpersonal problems. | 5 | | | | | | | | | | | | |
| | Patenting and intellectual property protection | Summarizes knowledge in the field of intellectual property and copyright protection, conducting patent and information research and drafting national and international applications for inventions. | 5 | | | | | | | | | | | | |
| | Target in Veterinary and Sanitary Expertise TradPro | He studies the features of technology, sanitation and reliable methods of quality control of national traditional agricultural products. Forms the skills of modern innovative TradPro quality and safety management technologies, including risk analysis and control of critical control points in production. | 5 | | | | | | | | | | | | |
| Cycle of major disciplines<br>University component | | | | | | | | | | | | | | | |
| | Theory and Methods experiment | Develops the skills of organizing and conducting a scientific experiment, studies the problems of monitoring and methodological approach to | 5 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | substantiating the choice of research methods. Integrates theoretical and practical knowledge in the formulation of scientific experience, with the justification of the results of research work and interpret them. | | | | | | | | | | | | | |
| Component of choice | | | | | | | | | | | | | | | |
| | Modern methods of food research | Studies modern methods for the determination of protein, lipid, carbohydrate, mineral, vitamin, as well as biologically active compounds that make up food products. Forms work skills using instrumental, optical, spectral, luminescent, refractometric, polarimetric, chromatographic, rheological methods for determining the quality and safety of food products. | 5 | | | | | | | | | | | | |
| | Veterinary and sanitary measures for infectious animal diseases | Studies the epidemiological situation of zooanthroponotic diseases in the world and the Republic of Kazakhstan, considers the organization of preventive measures and protection of the population in the event of zooanthropozoonosis. Forms a high level of theoretical and practical skills of working with the population in the event of zooanthropozoonosis, taking into account social and professional responsibility. | 5 | | | | | | | | | | | | |
| | | Studies the issues of preserving the health of animals, the influence of various factors on their well-being. | 5 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Disease prevention and animal welfare | Demonstrates the main aspects of preventive work in livestock farms and in settlements. Defines the rules for the establishment of quarantine and restrictive measures in the event of infectious diseases. | | | | | | | | | | | | |
| | Production technology and control of veterinary drugs | He studies the basics of the technology of production of veterinary drugs, legislation relating to the control of veterinary drugs, the strategy and principles of animal vaccination. Demonstrates the main aspects of registration, approbation and control over the circulation of veterinary drugs. | 6 | | | | | | | | | | | |
| | Codex Alimentarius in food examination | Develops skills of working with international standards adopted by the International Commission Codex Alimentarius FAO/WHO. Acquisition of knowledge about the Codex Alimentarius codes of international standards, the quality and safety of food products, food additives, pesticide residues, veterinary medicinal products, contaminants, sampling rules, analysis methods, control and certification during import and export. | 5 | | | | | | | | | | | |
| | Biostatistics | Biostatistics is the basis for formation of students' skills in the correct presentation of data and analysis the results of own research using methods of descriptive and | 5 | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | analytical statistics, as well as the use of statistical terminology; critical evaluation the results of veterinary and biological research publications; identification of errors in the use of statistical tests; independent work with computer statistical programs to solve the problems of planning, conducting and processing the results of own veterinary and biological research. | | | | | | | | | | | | |
| | Epizootological monitoring and prediction of infectious animal | Studies methods of epizootological monitoring and forecasting of the occurrence of infectious diseases of animals. Develops skills in analyzing and assessing the risk of the occurrence and spread of infectious diseases of animals, using information and communication technology | 5 | | | | | | | | | | | |
| | Animal welfare and ergonomics | Forms the basis of humane attitude to animals among students based on the methods of studying and assessing their well-being. He introduces scientific concepts on the application of knowledge in the field of ergo-nomic skills and rules for keeping animals, solving problems on the device, principles of operation and regulation of effective operation of equipment for the preservation of animal health and obtaining quality products. | 5 | | | | | | | | | | | |
| | Fundamentals of Herd Health | Forms knowledge in the field of herd health management, ensuring the | 5 | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Management | preservation of biosafety and hygiene of productive animals. Defines the skills and abilities of the organization of feeding, maintenance and carrying out veterinary and sanitary measures in livestock farms. | | | | | | | | | | | | |
| | Modern problems of veterinary | Studies the state of veterinary medicine in the Republic of Kazakhstan and abroad, aspects of state veterinary control over product safety, features of food production and livestock production in modern conditions of export relations, modern methods of diagnosis, prevention and treatment of infectious and non-infectious diseases of animals, birds, fish and wild animals. | 5 | | | | | | | | | | | |

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