# The list of academic disciplines of the university component

8D09 - Veterinary
(Code and classification of the field of education)

8D091 - Veterinary
(Code and classification of the direction of training)

0841
(Code in the International Standard Classification of Education)

D138 - Veterinary science
(Code and classification of the educational program group)

8D09101 - Veterinary medicine
(Code and name of the educational program)

Doctor of philosophy (PhD)
(Level of preparation)

set of 2024

Semey 2024

## Developed
By the Academic Committee of the EP
Head of AK Yessengulova N.
Manager of EP Bilaylov E.

## Reviewed
at the meeting of the Commission on Academic Quality of the Faculty of Veterinary Medicine and Agricultural Management by protocol No. 3 of January 09, 2024.
at a meeting of the Academic Quality Commission
Research School of Veterinary Medicine and Agriculture.
Recommended for approval by the University Academic Council
Protocol No. 6 dated June 06, 2024

## Approved
at a meeting of the University Academic Council by protocol No. 6/1 of January 19, 2024.

at a meeting of the University Academic Council by protocol No. 11 of June 28, 2024.

## Statistics and experimental design using R

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|---|---|
| Discipline cycle | Basic disciplines |
| Course | 1 |
| Credits count | 3 |
| Knowledge control form | Examination |

### Short description of discipline

*The course provides an in-depth study of statistical methods and principles of experimental design using the R programming language. The course examines real-world research examples, starting with descriptive statistics and ending with complex experimental designs. The course will prepare students to independently perform data analysis, design experiments and interpret the results.*

### Purpose of studying of the discipline

*doctoral students tudents will master modern statistical methods of data analysis and the principles of experimental design using the R programming language, which will allow them to effectively apply this knowledge in scientific research.*

### Learning Outcomes

*ON2 To be able to justify and explain the discussions arising in the course of internship prerequisites.*
*To evaluate, compare and propose, based on the biological characteristics of animals, the application of scientific and theoretical methods in veterinary practice.*
*ON7 Introduction of a statistical sequence of veterinary and medical knowledge on a digital and technological basis into an automatic system.*

### Learning outcomes by discipline

*Knowledge of basic statistical concepts and methods.*
*The ability to use R software for statistical data analysis.*
*Skills of independent design of experiments and interpretation of their results.*
*The ability to use the results obtained in real scientific and applied research.*
*Негізгі статистикалық ұғымдар мен әдістерді білу.*

### Prerequisites

*Masters degree course*

### Postrequisites

*Doctoral student research work, including internship and doctoral dissertation II*

## Academic writing

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|---|---|
| Discipline cycle | Basic disciplines |
| Course | 1 |
| Credits count | 5 |
| Knowledge control form | Examination |

### Short description of discipline

*Forms the ability to present the results of scientific research in writing in the word a recommendation note expressing the potential team of the academic environment, expertise and industry. In this regard, the goal is to achieve reliability in order to improve the ability to independently build hypotheses of a theoretical and empirical nature. As well as the ability to work with sources of bibliographic works related to the search direction.*

### Purpose of studying of the discipline

*With the main purpose of mastering the discipline, he will teach you to creatively describe the written semantic content in the form of a letter of the results of research work in the formation of a scientific and pedagogical qualified specialist. In this regard, he masters the ability to meaningfully convey the content of recordings of any creative nature in certain scientific areas in the field of veterinary medicine. Also owns links in the description of physiological or pathological processes based on general veterinary rules.*

### Learning Outcomes

*ON3 Formulate and compare theoretical methods in determining the tasks of research work based on the requirements of veterinary science.*
*ON9 To understand and describe the processes of biological and physiological mechanisms of the animal in determining the effectiveness of treatment based on the principles of veterinary therapy.*

### Learning outcomes by discipline

*When studying the discipline, the ability to use the methodology used in the performance of tasks and tasks worthy of the goal provided by the program is mastered.*

### Prerequisites

*Masters degree course*

### Postrequisites

*Monitoring and treatment of gynecology diseases*

## Research methods

| | |
|---|---|
| Discipline cycle | Basic disciplines |
| Course | 1 |
| Credits count | 5 |
| Knowledge control form | Examination |

### Short description of discipline

*It teaches the student to observe the ethics of scientific research, forming theoretical and practical skills in accordance with the principles of experimental clinical and morphological studies for veterinary purposes. In connection with theoretical and practical positions in determining the relevance of scientific research, they will be taught to rely on the sequence of statistical verification in determining the task of solving the task. Formation of skills to increase the ability to formulate on a scientific basis.*

### Purpose of studying of the discipline

*The purpose of the discipline is to train a scientific applicant, drawing up a general plan of research work depending on its expected results with the possibility of choosing advanced models of scientific experimental research in the direction of scientific work in the development of models and opportunities in its field. She also teaches the scientific and theoretical justification of the expected research results. As well as the ability to correlate the results obtained with up-to-date information.*

### Learning Outcomes

*ON1 To offer diagnostic methods and advanced technologies in the field of veterinary medicine based on scientific research achievements.*
*ON2 To be able to justify and explain the discussions arising in the course of internship prerequisites.*
*ON3 Formulate and compare theoretical methods in determining the tasks of research work based on the requirements of veterinary science.*
*ON7 Introduction of a statistical sequence of veterinary and medical knowledge on a digital and technological basis into an automatic system.*

### Learning outcomes by discipline

*The tasks of the scientific orientation of the discipline include generalization, description, analysis of research results, argumentation of the concept;*
*To give a cognitive conclusion on the display of the result obtained;*
*systematization, assimilation of acquired knowledge;*
*Systematization of trends of the emerging phenomenon;*
*distinguish between the expected moments and the direction of practical application of the acquired knowledge;*

### Prerequisites

*Masters degree course*

### Postrequisites

*Obstetrics and Gynecology diseases of cats and dogs*

## General pathology

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|---|---|
| Discipline cycle | Basic disciplines |
| Course | 1 |
| Credits count | 5 |
| Knowledge control form | Examination |

### Short description of discipline

*General pathology-teaching to study the patterns of development and completion of the disease on the basis of fundamental science. The basis of the discipline is the sciences of pathological anatomy and pathological physiology. In this regard, the teaching of the discipline studies the factors provoking the pathological process of dystrophy, necrosis, atrophy, disorders of blood and lymphatic nausea, immunopathological processes, allergies, fever, etc. In addition, independent diseases are considered from a special research point of view.*

### Purpose of studying of the discipline

*The main purpose of studying the discipline is to explain pathophysiological phenomena in conditions of impaired function of organs and systems and factors affecting the patterns of development of painful processes in the animal`s body. In this regard, the teaching of the discipline mainly studies the mechanisms of development of dystrophy, necrosis, atrophy, disorders of blood and lymphatic mirroring, immunopathological process, allergies, fever, and other pathological processes.*

### Learning Outcomes

*To evaluate, compare and propose, based on the biological characteristics of animals, the application of scientific and theoretical methods in veterinary practice.*
*ON6 To study pathological processes in particularly dangerous animal diseases.*
*ON9 To understand and describe the processes of biological and physiological mechanisms of the animal in determining the effectiveness of treatment based on the principles of veterinary therapy.*
*ON10 To make a consistent conclusion, in accordance with the classification of clinical and morpho-biochemical parameters of the animal s organism, taking into account its genotype and homostatic deviation in the etiopathogenetic process.*

### Learning outcomes by discipline

*When studying the discipline, factors provoking the pathological process are studied, such as dystrophy, necrosis, atrophy, disorders of blood and lymphatic mirroring, immunopathological process, allergy, fever, etc.*

### Prerequisites

*Masters degree course*

### Postrequisites

*Especially dangerous helminthiasis*

## Doctoral student research work, including internship and doctoral dissertation I

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|---|---|
| Discipline cycle | Profiling discipline |
| Course | 1 |
| Credits count | 15 |
| Knowledge control form | Total mark on practice |

### Short description of discipline

*The discipline is based on experimental research of scientific and search purposes, reveals a high level of knowledge and scientific hypothetical orientation. Teaches systematization and formation of skills and mastery of research methods in the field of targeted research. A doctoral student should have a high potential for independence among colleagues and the ability to recognize the specifics of creative thinking and the ability to solve current scientific problems in a modern way.*

### Purpose of studying of the discipline

*The main purpose of the discipline of the doctoral student`s research work, which includes an internship and the completion of a doctoral dissertation, is to form applicants` own thinking about the results of the research. And also be able to draw up a reasoned conclusion of the results of scientific research in relation to them.*

### Learning Outcomes
*ON3 Formulate and compare theoretical methods in determining the tasks of research work based on the requirements of veterinary science.*
*To evaluate, compare and propose, based on the biological characteristics of animals, the application of scientific and theoretical methods in veterinary practice.*
### Learning outcomes by discipline
*Depending on the purpose of the program, they are taught to determine the expected results in the implementation of a topical topic related to the field of research work.*

### Prerequisites
*Masters degree course*
### Postrequisites
*Biotechnological methods of animal reproduction*

## Doctoral student research work, including internship and doctoral dissertation II

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|---|---|
| Discipline cycle | Profiling discipline |
| Course | 1 |
| Credits count | 20 |
| Knowledge control form | Total mark on practice |

### Short description of discipline
*The discipline is based on experimental research of scientific and search purposes, reveals a high level of knowledge and scientific hypothetical orientation. Teaches systematization and formation of skills and mastery of research methods in the field of targeted research. A doctoral student should have a high potential for independence among colleagues and the ability to recognize the specifics of creative thinking and the ability to solve current scientific problems in a modern way.*
### Purpose of studying of the discipline
*The main purpose of the doctoral student`s research work, which includes an internship and the completion of a doctoral dissertation, is to form applicants` own thinking about the results of the research. And also teaches to make a reasoned conclusion of the results of scientific research in relation to them.*
### Learning Outcomes
*ON3 Formulate and compare theoretical methods in determining the tasks of research work based on the requirements of veterinary science.*
*To evaluate, compare and propose, based on the biological characteristics of animals, the application of scientific and theoretical methods in veterinary practice.*
### Learning outcomes by discipline
*Depending on the purpose of the program, they are taught to determine the expected results in the implementation of a topical topic related to the field of research work.*

### Prerequisites
*Doctoral student research work, including internship and doctoral dissertation I*
### Postrequisites
*Doctoral student research work, including internship and doctoral dissertation III*

## Teaching practicum

| | |
|---|---|
| Discipline cycle | Basic disciplines |
| Course | 2 |
| Credits count | 10 |
| Knowledge control form | Total mark on practice |

### Short description of discipline
*Organizes activities characteristic of the educational process and the formation of pedagogical professional competence, teaches the process of improving competencies and systematization of knowledge. They will learn to justify the advantages of organizing a modern learning process and psychological justification of training in the management of educational work for the formation of a future specialist. Mastering the ability to form, adapt the general motivation and advanced model of students to modern, interactive technological features, in contrast to traditional teaching methods.*
### Purpose of studying of the discipline
*The objectives of the discipline are based on the prerequisites for independent experience, the formation of creative skills of students in combination with future pedagogical activity. In addition, the purpose and objectives of the taught subject, based on the basis of the topic, should be formulated and presented on a modern basis of the skills and positions necessary for its development.*

### Learning Outcomes
*ON1 To offer diagnostic methods and advanced technologies in the field of veterinary medicine based on scientific research achievements.*
*ON2 To be able to justify and explain the discussions arising in the course of internship prerequisites.*
### Learning outcomes by discipline
*In accordance with the main objectives of the discipline, the doctoral student gets the opportunity to methodically creatively improve his pedagogical skills in the process of mastering practical practice.*
### Prerequisites
*Doctoral student research work, including internship and doctoral dissertation I*
### Postrequisites
*Research scientific training*

## Doctoral student research work, including internship and doctoral dissertation III

| | |
|---|---|
| Discipline cycle | Profiling discipline |
| Course | 2 |
| Credits count | 20 |
| Knowledge control form | Total mark on practice |

### Short description of discipline
*The discipline is based on experimental research of scientific and search purposes, reveals a high level of knowledge and scientific hypothetical orientation. Teaches systematization and formation of skills and mastery of research methods in the field of targeted research. A doctoral student should have a high potential for independence among colleagues and the ability to recognize the specifics of creative thinking and the ability to solve current scientific problems in a modern way.*

### Purpose of studying of the discipline
*The main purpose of the discipline of the doctoral student`s research work, which includes an internship and the completion of a doctoral dissertation, is to form applicants` own thinking about the results of the research. And also be able to draw up a reasoned conclusion of the results of scientific research in relation to them.*

### Learning Outcomes
*ON2 To be able to justify and explain the discussions arising in the course of internship prerequisites.*
*ON9 To understand and describe the processes of biological and physiological mechanisms of the animal in determining the effectiveness of treatment based on the principles of veterinary therapy.*

### Learning outcomes by discipline
*Depending on the purpose of the program, they are taught to determine the expected results in the implementation of a topical topic related to the field of research work.*

### Prerequisites
*Doctoral student research work, including internship and doctoral dissertation II*

### Postrequisites
*Doctoral student research work, including internship and doctoral dissertation IV*

## Doctoral student research work, including internship and doctoral dissertation IV

| | |
|---|---|
| Discipline cycle | Profiling discipline |
| Course | 2 |
| Credits count | 30 |
| Knowledge control form | Total mark on practice |

### Short description of discipline
*The discipline is based on experimental research of scientific and search purposes, reveals a high level of knowledge and scientific hypothetical orientation. Teaches systematization and formation of skills and mastery of research methods in the field of targeted research. A doctoral student should have a high potential for independence among colleagues and the ability to recognize the specifics of creative thinking and the ability to solve current scientific problems in a modern way.*

### Purpose of studying of the discipline
*The main purpose of the discipline of the doctoral student`s research work, which includes an internship and the completion of a doctoral dissertation, is to form applicants` own thinking about the results of the research. And also be able to draw up a reasoned conclusion of the results of scientific research in relation to them.*

### Learning Outcomes
*ON1 To offer diagnostic methods and advanced technologies in the field of veterinary medicine based on scientific research achievements.*
*ON3 Formulate and compare theoretical methods in determining the tasks of research work based on the requirements of veterinary science.*

### Learning outcomes by discipline
*Depending on the purpose of the program, they are taught to determine the expected results in the implementation of a topical topic related to the field of research work.*

### Prerequisites
*Doctoral student research work, including internship and doctoral dissertation III*

### Postrequisites
*Doctoral student research work, including internship and doctoral dissertation V*

## Research scientific training

| | |
|---|---|
| Discipline cycle | Profiling discipline |
| Course | 3 |
| Credits count | 10 |
| Knowledge control form | Total mark on practice |

### Short description of discipline
*The possibilities of achieving the expected results within the framework of the educational program and during the course of research practice are studied in accordance with the goals, objectives and deadlines for the independent research work of a doctoral student. However, the implementation of research practice is carried out within the framework of the doctoral student`s scientific work in the form of the implementation of a specific research project and in the interests of a higher educational institution. At the same time, the main attention is paid to the relevance in solving the problems facing the advanced tasks in the protected scientific work.*

### Purpose of studying of the discipline
*Has an analysis of the target areas of the main research work of a doctoral student in the study of the discipline. In this regard, the research object`s need for market requirements in relation to its industries is determined by the research practice program. In addition, it is planned to perform additional tasks for the research work of the cathedral. The preliminary terms of the agreement of the three parties*

*are discussed here in advance. During the practice, the achievements of domestic and foreign scientific work and ways to achieve it will be analyzed*

### Learning Outcomes

*ON3 Formulate and compare theoretical methods in determining the tasks of research work based on the requirements of veterinary science.*

*To evaluate, compare and propose, based on the biological characteristics of animals, the application of scientific and theoretical methods in veterinary practice.*

### Learning outcomes by discipline

*In the teaching of the discipline, they mainly master the skills of fulfilling their goals in a research search.*

### Prerequisites

*Doctoral student research work, including internship and doctoral dissertation IV*

### Postrequisites

*Doctoral student research work, including internship and doctoral dissertation VI*

## Doctoral student research work, including internship and doctoral dissertation V

| | |
|---|---|
| Discipline cycle | Profiling discipline |
| Course | 3 |
| Credits count | 20 |
| Knowledge control form | Total mark on practice |

### Short description of discipline

*The discipline is based on experimental research of scientific and search purposes, reveals a high level of knowledge and scientific hypothetical orientation. Teaches systematization and formation of skills and mastery of research methods in the field of targeted research. A doctoral student should have a high potential for independence among colleagues and the ability to recognize the specifics of creative thinking and the ability to solve current scientific problems in a modern way.*

### Purpose of studying of the discipline

*The main purpose of the doctoral student`s research work, which includes an internship and the completion of a doctoral dissertation, is to form applicants` own thinking about the results of the research. And also teaches to make a reasoned conclusion of the results of scientific research in relation to them.*

### Learning Outcomes

*ON2 To be able to justify and explain the discussions arising in the course of internship prerequisites.*

*ON4 Organize research and teaching activities in the field of veterinary medicine.*

### Learning outcomes by discipline

*Depending on the purpose of the program, they are taught to determine the expected results in the implementation of a topical topic related to the field of research work.*

### Prerequisites

*Doctoral student research work, including internship and doctoral dissertation IV*

### Postrequisites

*Doctoral student research work, including internship and doctoral dissertation VI*

## Doctoral student research work, including internship and doctoral dissertation VI

| | |
|---|---|
| Discipline cycle | Profiling discipline |
| Course | 3 |
| Credits count | 18 |
| Knowledge control form | Total mark on practice |

### Short description of discipline

*The discipline is based on experimental research of scientific and search purposes, reveals a high level of knowledge and scientific hypothetical orientation. Teaches systematization and formation of skills and mastery of research methods in the field of targeted research. A doctoral student should have a high potential for independence among colleagues and the ability to recognize the specifics of creative thinking and the ability to solve current scientific problems in a modern way.*

### Purpose of studying of the discipline

*The main purpose of the doctoral student`s research work, which includes an internship and the completion of a doctoral dissertation, is to form applicants` own thinking about the results of the research. And also teaches to make a reasoned conclusion of the results of scientific research in relation to them.*

### Learning Outcomes

*ON1 To offer diagnostic methods and advanced technologies in the field of veterinary medicine based on scientific research achievements.*

*ON3 Formulate and compare theoretical methods in determining the tasks of research work based on the requirements of veterinary science.*

### Learning outcomes by discipline

*Depending on the purpose of the program, they are taught to determine the expected results in the implementation of a topical topic related to the field of research work.*

### Prerequisites

*Doctoral student research work, including internship and doctoral dissertation V*

### Postrequisites

*Final examination*