Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
higher education
"Saint-Petersburg State University
veterinary medicine"

APPROVED
by the Vice-rector
for educational work and youth Policy
A. A. Sukhinin
"25" June 2025

WORK PROGRAM

for research work
(obtaining primary skills in research work)

Higher education level
Specialty 36.05.01 Veterinary
Full-time education
The start year of training is 2025

Reviewed and accepted
at the meeting of the Department GE and IO
"25" June 2025
Protocol No. 15

Head of the Department G, associate professor
candidate of veterinary Sciences
E.Y. Finageev

Saint-Petersburg
2025 г.

1. RESEARCH GOALS AND OBJECTIVESНИР

The main **goal** of research work (R & D) is to develop students ' universal, general professional and professional competencies aimed at acquiring the skills of planning and organizing a scientific experiment and the skills of performing research and production and technical works using various equipment and computer technologies. R & D allows students to apply their theoretical knowledge in conducting research, develops their creative attitude to work, and helps them navigate their chosen specialty.

Research objectives:

- learn to formulate and solve problems of diagnosis and prevention of infectious and non-infectious diseases of animals, treatment of agricultural and unproductive animals;
- learn how to apply modern information and production technologies in the planning and implementation of veterinary and veterinary-sanitary measures.

2. TYPES OF PRACTICE, METHODS AND FORMS OF ITS IMPLEMENTATION

Academic practice forms the second block of the curriculum and isedivided into general professional practice, clinical and research work (obtaining primary skills in research work).

The list of forms of research work for students can be specified and supplemented depending on the direction of scientific activity of the student, is carried out continuously - by allocating a continuous period of study time in the calendar curriculum.

Methods and forms of conducting practical training and research work for persons with disabilities are established taking into account the group of health restrictions and the possibility to complete the internship and research program in full.

3. A LIST OF PLANNED LEARNING OUTCOMES WHEN PERFORMING RESEARCH, CORRELATED WITH THE PLANNED RESULTS OF MASTERING THE EDUCATIONAL PROGRAM;

Research work as a type of educational work is aimed at developing practical skills and abilities, as well as forming the competencies of students in the process of performing certain types of work related to future professional activities. R & D is an integral part of training qualified specialists who are able to adapt and work successfully in specialized organizations.

The purpose of R & D is to deepen, supplement and consolidate theoretical and practical knowledge obtained in the study of specialized disciplines, apply practical skills acquired during the internship, as well as collect, process and systematize materials for performing research work of students based on the study of indicators and features of the activities of specialized organizations.

Research develops and strengthens research skills and contributes to the comprehensive formation of universal, general professional and professional competencies of students.

The subject of research work is chosen by the student independently and must be agreed with the supervisor of the supervising department.

The planned research results are:

- consolidation of acquired theoretical and practical knowledge;
- systematization and deepening of the competencies formed during the development of the program in the specialty "Veterinary Medicine", their application in solving specific scientific and practical problems;
- acquaintance and study of the object of scientific research;
- gain experience in working in teams when dealing with professional issues;

- development of independent work skills and mastering the methodology for analyzing the main organizational indicators of scientific work;
- collection, systematization, and processing of factual material on the topic of scientific work;
- obtaining additional information necessary for students ' research work.

These research tasks relate to the following areas of professional activity:: 13 Agriculture, meet the types of tasks of professional activity provided for in the educational standard: medical, expert-control, scientific and educational.

Implementation of the research program should form the following competencies:

A) Learning competencies

CC-1 is able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy

UK-1ID-1 To know methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis.

CC-1ID-2 To be able to acquire new knowledge based on analysis, synthesis, etc.; to collect and summarize data on current scientific problems related to the professional field; to search for information and solutions based on actions, experiments, experience, information and communication technologies.

UK-1ID-3 Master the study of the problem of professional activity using analysis, synthesis and other methods of intellectual activity, including the use of information and communication technologies; identifying problems and using adequate methods to solve them; demonstrating value judgments in solving problematic professional situations.

UK-2 is able to manage a project at all stages of its life cycle

CC-2ID-1 Know the methods of presenting and describing the results of project activities, including those based on digital technologies; methods, criteria and parameters for evaluating the results of project implementation; principles, methods and requirements for project work.

UK-2ID-2 Be able to justify the theoretical and practical significance of the results obtained; check and analyze project documentation; predict the development of processes in the project professional field; put forward innovative ideas and non-standard approaches to their solution in order to implement the project; calculate qualitative and quantitative results, deadlines for project work.

UK-2ID-3 Master project management in the field of relevant professional activities, including on the basis of digital technologies; distribution of tasks and motivation to achieve goals; management of the development of the project specification, management of the implementation of specialized project work and the process of discussing and finalizing the project; participation in the development of the project specification, development of the project implementation program in professional area; organization of professional discussion of the project, participation in the management of project documentation; design of the project implementation schedule; determination of requirements for the results of project implementation.

UK-4 is able to apply modern communication technologies, including in a foreignыхlanguage(s), for academic and professional interaction

UK-4ID-1 Know computer and information and communication technologies, information and digital infrastructure in the organization; communication in professional ethics; factors for improving communication in the organization, communication technologies in professional interaction; characteristics of communication flows; the importance of communication in professional interaction; methods for studying the communicative potential of an individual; modern information and communication technologies.

UK-4ID-2 To be able to create written texts of scientific and official-business speech styles on professional issues in Russian and foreign languages; to study the passage of information on managerial communications; to determine internal communications in the organization, including using digital technologies.

UK-4ID-3 Master the principles of forming a communication system; analyze the system of communication links in the organization by performing oral and written communications, including in a foreign language; presenting plans and results of their own and team activities using communication technologies; technology for building effective communication in the organization; transfer of professional information in information and telecommunications networks using the following methods: modern means of information and communication technologies..

B) General professional competencies

OPK-1 is able to determine the biological status and normative clinical indicators of animal organs and body systems

OPK-1ID-1 Know safety techniques and personal hygiene rules when examining animals, methods of fixing them; schemes of clinical research of an animal and the procedure for studying individual body systems, including using digital technologies; methodology for recognizing the pathological process.

OPK-1ID-2 is able to collect and analyze anamnestic data, conduct laboratory and functional studies using digital computer technologies necessary to determine the biological status of animals.

OPK-1ID-3 Possess practical skills in conducting an independent clinical examination of an animal using classical research methods and digital technologies.

OPK-2 is able to interpret and evaluate the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal body in its professional activity

OPK-2ID-1 Know ecological factors of the environment, their classification and nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relations of animals and plants, predator and prey, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body.

OPK-2ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine for the prevention of infectious and invasive diseases and treatment of animals; use environmental monitoring methods in the environmental expertise of agricultural facilities and the production of agricultural products, including: including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body.

OPK-2ID-3 Possess an idea of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying the ecological knowledge of the surrounding world, the laws of development of nature and society; the skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, in particular including using digital technologies

OPK-3 is able to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex

OPK-3ID-2 Should be able to find up-to-date, up-to-date and reliable information about veterinary legislation, including, with the use of digital technologies, rules and regulations governing veterinary activities in a particular region and/or country.

OPK-4 is able to use professional methods of problem solving using modern equipment in the development of new technologies and use modern professional methodology for conducting experimental research and interpreting their results

OPK-4ID-1 Know the technical capabilities of modern specialized equipment, methods for solving professional tasks.

OPK-4ID-2 Should be able to apply modern technologies, including digital ones, and research methods in professional activities, and interpret the results obtained.

OPK-4ID-3 Master the skills of working with specialized equipment for the implementation of tasks set during research and development of new technologies, including digital ones

OPK-5 is able to draw up special documentation, analyze the results of professional activities and submit reporting documents using specialized databases

OPK-5ID-1 is able to apply new information technologies to solve tasks in their professional activities, work with specialized information databases.

OPK-5ID-2 Master the skills of working with the operating system, with text and table processors, with database management systems, with information and search engines on the Internet.

OPK-5ID-3 To know new information technologies for solving tasks in their professional activities, to work with specialized information databases.

C) Professional competencies

PC-9 Development of recommendations for special feeding of sick animals for therapeutic purposes

PC-9ID-1 Know the types of dietary regimens, principles of feed selection using digital technologies, norms, feeding modes in animal diet therapy

PC-15 Organization of organizational and technical, zootechnical and veterinary measures aimed at the prevention of non-infectious diseases in accordance with the plan for the prevention of non-infectious animal diseases, analysis of the effectiveness of measures for the prevention of animal diseases in order to improve them

PC-15ID-1 Be able to assess the impact of animal care and feeding conditions on their health as part of implementing action plans for the prevention of animal diseases using digital technologies

PC-15ID-2 Should be able to assess the effectiveness of preventive measures and methods of their implementation, including using digital technologies

PC-15ID-3 Be able to carry out veterinary quality control and preparation of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases

PC-15ID-4 Be able to perform a diagnostic examination of animals within the framework of medical examination for timely detection of early preclinical and clinical signs of the disease

PC-15ID-5 Know the types of measures for the prevention of non-infectious animal diseases and metabolic disorders in animals and the requirements for their implementation in accordance with methodological guidelines, instructions, instructions, rules for diagnosis, prevention and treatment of animals

4. PLACE OF R & D IN THE STRUCTURE OF OBOR

Research work (obtaining primary skills of research work) is a mandatory part of the second block of the curriculum (B2.O. 02(N)). The total labor intensity of R & D is 1 credit unit - 36 hours, the R & D program is performed by full-time students in the 6th semester in accordance with the curriculum and schedule of the educational process in the specialty 36.05.01 Veterinary Medicine.

5. RESEARCH SCOPE

5.1. Scope of research for full-time education

Type of practice	**Semester**	**TOTAL:**
	6	
Research work (obtaining primary skills of research work), h./ZE	36/1	36/1
Classroom work, h.	18	18
Independent work, h., v. h. of them:	54	54
PP, h	. 40	40
Type of intermediate certification	Credit	
TOTAL, h./ZE:	36/1	36/1

6. RESEARCH CONTENT

Students ' development of the research program is carried out in several stages: preparatory, experimental and final.

#	Stages (sections) Practice stages (sections)	Content of the practice	stage (section) Competencies being formed	Labor intensity (hours/ day)	Types of academic work, including independent work of students and labor intensity (in hours)				Semester/course	Form of current control and prom.Attestations
					Classroom work, hour., of	which Independent work, hour., of which:	PP	Control		

1	preparatory	Planning of research work, including familiarization with the topic of research work in this area, and the choice of research topic	A) Educational competencies UK-1 Is able to carry out a critical analysis of problem situations based on a systematic approach, develop a strategy for the actions of CC-1ID-1 To know the methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis. CC-1ID-2 To be able to acquire new knowledge based on analysis, synthesis, etc.; to collect and summarize data on current scientific problems related to the professional field; to search for information and solutions based on actions, experiments, experience, information and communication technologies. UK-1ID-3 Master the study of the problem of professional activity using analysis, synthesis and other methods of intellectual activity, including the use of information and communication technologies; identifying problems and using adequate methods to solve them; demonstrating value judgments in solving problematic professional situations. UK-2 is able to manage a project at all stages of its life cycle UK-2ID-1 Knows the methods of presenting and describing the results of project activities, including on the basis of digital technologies; methods, criteria and parameters for evaluating the results of project implementation; principles, methods and requirements for project work. UK-2ID-2 Be able to justify the theoretical and practical significance of the results obtained; check and analyze project documentation; predict the development of processes in the project professional field; put forward innovative ideas and non-standard approaches to their solution in order to implement the project; calculate qualitative and	18/0. 5	1	16.9	10	0.075	4	Current

			quantitative results, deadlines for project work. UK-2ID-3 Possess project management in the field of relevant professional activities, including on the basis of digital technologies; assignment allocation and motivation to achieve goals; managing the development of the project specification, managing the implementation of specialized project work and the process of discussing and finalizing the project; participating in the development of the project specification, developing a project implementation program in the professional field; organizing the implementation of professional discussion of the project, participation in maintaining project documentation; designing a project implementation schedule; defining requirements for project implementation results. UK-4 is able to apply modern communication technologies, including in a foreignыхlanguage(s), for academic and professional interaction UK-4ID-1 Know computer and information and communication technologies, information and digital infrastructure in the organization; communication in professional ethics; factors for improving communication in the organization, communication technologies in professional interaction; characteristics of communication flows; the importance of communication in professional interaction; methods for studying the communicative potential of an individual; modern means of information and communication technologies. UK-4ID-2 To be able to create written texts of scientific and official-business speech styles on professional issues in Russian and foreign languages; to study the passage of information on managerial communications; to							

			determine internal communications in the organization, including using digital technologies. UK-4ID-3 Master the principles of forming a communication system; analyze the system of communication links in the organization by performing oral and written communications, including in a foreign language; presenting plans and results of their own and team activities using communication technologies; technology for building effective communication in the organization; transfer of professional information in information and telecommunications networks using the following methods: modern means of information and communication technologies.. B) General professional competencies OPK-1 is able to determine the biological status and regulatory clinical indicators of animal organs and body systems OPK-1ID-1 Knows safety techniques and personal hygiene rules when examining animals, how to fix them; schemes for clinical research of an animal and the procedure for studying individual body systems, including using digital technologies; methodology recognition of a pathological process. OPK-1ID-2 is able to collect and analyze anamnestic data, conduct laboratory and functional studies using digital computer technologies necessary to determine the biological status of animals. OPK-1ID-3 Possess practical skills in conducting an independent clinical examination of an animal using classical research methods and digital technologies. OPK-2 Able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal body							

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. 2	production	. Conducting research work; analyzing the results of experimental data	A) Educational competencies UK-1 is able to carry out critical analysis of problem situations based on a systematic approach, develop a strategy for actions UK-1ID-1 Know the methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis. CC-1ID-2 To be able to acquire new knowledge based on analysis, synthesis, etc.; to collect and summarize data on current scientific problems related to the professional field; to search for information and solutions based on actions, experiments, experience, information and communication technologies. UK-1ID-3 Master the study of the problem of professional activity using analysis, synthesis and other methods of intellectual activity, including the use of information and communication technologies; identifying problems and using adequate methods to solve them; demonstrating value judgments in solving problematic professional situations. UK-2 is able to manage a project at all stages of its life cycle UK-2ID-1 Knows the methods of presenting and describing the results of project activities, including on the basis of digital technologies; methods, criteria and parameters for evaluating the results of project implementation; principles, methods and requirements for project work. UK-2ID-2 Be able to justify the theoretical and practical significance of the results obtained; check and analyze project documentation; predict the development of processes in the project professional field; put forward innovative ideas and non-standard approaches to their solution in order to implement the project; calculate qualitative and	36/1	2	33.85	20	0.15	4	Current

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3	final	Preparation of a report on research work according to the chosen topic	A) Academic competencies of CC-1 is able to carry out a critical analysis of problem situations based on a systematic approach, develop a strategy for actions of CC-1ID-1 Know the methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis. CC-1ID-2 To be able to acquire new knowledge based on analysis, synthesis, etc.; to collect and summarize data on current scientific problems related to the professional field; to search for information and solutions based on actions, experiments, experience, information and communication technologies. UK-1ID-3 Master the study of the problem of professional activity using analysis, synthesis and other methods of intellectual activity, including the use of information and communication technologies; identifying problems and using adequate methods to solve them; demonstrating value judgments in solving problematic professional situations. UK-2 is able to manage a project at all stages of its life cycle UK-2ID-1 Knows the methods of presenting and describing the results of project activities, including on the basis of digital technologies; methods, criteria and parameters for evaluating the results of project implementation; principles, methods and requirements for project work. UK-2ID-2 Be able to justify the theoretical and practical significance of the results obtained; check and analyze project documentation; predict the development of processes in the project professional field; put forward innovative ideas and non-standard approaches to their solution in order to implement the project; calculate qualitative and	18/0. 5	1	16.9	10	0.075	4	Protection of the research report in the nondiff formнеди фф. Offsets

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			and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relations of animals and plants, predator, etc. victims, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body. OPK-2ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine for the prevention of infectious and invasive diseases and treatment of animals; use environmental monitoring methods in the environmental expertise of agricultural facilities and the production of agricultural products, including: including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body. OPK-2ID-3 Possess an idea of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying the ecological knowledge of the surrounding world, the laws of development of nature and society; the skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, in particular using digital technologies , OPK-3 is able to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex OPK-3ID-2 is able to find up-to-date, up-to-date and reliable information about veterinary legislation, including, with the use							

			of digital technologies, the rules and regulations governing veterinary activities, including: or another region and/or country. OPK-4 is able to use in professional activity methods of problem solving using modern equipment in the development of new technologies and use modern professional methodology for conducting experimental research and interpreting their results OPK-4ID-1 Know the technical capabilities of modern specialized equipment, methods for solving problems of professional activity. OPK-4ID-2 Should be able to apply modern technologies, including digital ones, and research methods in professional activities, and interpret the results obtained. OPK-4ID-3 Possess the skills of working with specialized equipment for the implementation of tasks set during research and development of new technologies, including digital OPK-5 is able to draw up special documentation, analyze the results of professional activities and submit reporting documents using specialized databases OPK-5ID-1 Is able to apply new information technologies to solve the following tasks: perform tasks set in their professional activities, work with specialized information databases. OPK-5ID-2 Master the skills of working with the operating system, with text and table processors, with database management systems, with information and search engines on the Internet. OPK-5ID-3 To know new information technologies for solving tasks in their professional activities, to work with specialized information databases.							

			C) Professional competencies PC-9 Development of recommendations for special feeding of sick animals for therapeutic purposes PC-9ID-1 Know the types of dietary regimes, principles of feed selection using digital technologies, norms, feeding regimes in animal diet therapy PC-15 Organization of organizational, technical, zootechnical and veterinary measures aimed at the prevention of non-infectious diseases in accordance with the plan for the prevention of non-infectious animal diseases, analysis of the effectiveness of measures for the prevention of animal diseases in order to improve them PC-15ID-1 Be able to assess the impact of conditions for keeping and feeding animals on their health as part of the implementation of action plans for the prevention of animal diseases using digital technologies PC-15ID-2 measures and methods of their implementation, including the use of digital technologies PC-15ID-3 Be able to carry out veterinary quality control and preparation of animal feed in order to ensure their veterinary and sanitary safety in the framework of the implementation of action plans for the prevention of animal diseases PC-15ID-4 Be able to perform a diagnostic examination of animals in the framework of timely detection of early preclinical and clinical signs of PC-15ID-5 disease Know the types of measures for the prevention of non-infectious animal diseases and metabolic disorders in animals and the requirements for their implementation in accordance with methodological guidelines, instructions,							

			instructions, rules for diagnosis, prevention and treatment of animals							
TOTAL:				72/2	4	67,7	40	0,3		

[1] *6 and 8 semesters for full-time and part-time education,*
4 course for correspondence education.

7. R & D REPORTING FORMS

For students, there are reporting forms-preparation of a research report. At the end of each stage, students, after submitting materials to the supervisor, report to the department meeting.

At the first, second and third stages, students review the literature sources on the selected research topic, after which the result of the research work is summed up in the form of a typewritten manuscript. The total volume of the report should not exceed 30 pages (not including appendices). The research report reflects the work done by the student and its results. The report should have a title page, content, introduction, main part, list of sources used (if the relevant organization has developed regulations, instructions, technical specifications, etc.) and an appendix.

The research report is heard at a meeting of the supervising department, and students prepare presentations in PowerPoint format. The presentation structure should include the title slide, the relevance of the chosen topic, the research goal(s) and objectives, research materials and methods, research results, conclusions, and the final slide. Preparing a research report in the form of presentations allows the student to show creative abilities, but it is not recommended to use topics for the design of high-contrast, loaded with embedded elements, animations, placing a large amount of text on slides, using borrowed photos, as well as materials that are not related to the topic of the work.

The student's presentation should be accompanied by a report in which the student comments on the graphic materials presented on the slides.

Implementation of the research program, preparation and protection of the research report can be carried out using distance learning technologies.

8. LIST OF EDUCATIONAL LITERATURE AND INTERNET RESOURCES REQUIRED FOR MASTERING THE RESEARCH PROGRAM

8.1. Basic literature

1. Obstetrics, gynecology and biotechnics of animal reproduction: textbook / A. P. Studentsov, V. S. Shipilov, V. Ya. Nikitin [et al.]. - 9th ed., reprint.and add-ons. SaintPetersburg: Lan Publ., 2019, 548 p. ISBN 978-5-8114-3271-4. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/111907 (accessed June 24, 2025).
2. Vasiliev, V. K. General surgery : a textbook / V. K. Vasiliev, A. P. Popov, ЦыбикжаповA.D. Tsybikzhapov. SaintPetersburg: Lan Publ., 2014, 272 p. ISBN 978-5-8114-1686-8. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/51936 (accessed June 24, 2025).
3. Vakhrusheva, T. I. General pathological anatomy. Course of lectures : a textbook / T. I. Vakhrusheva. Krasnoyarsk : KrasGAU Publ., 2014, 270 p. (in Russian) - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/90783 (accessed June 24, 2025).
4. Veterinary pharmacy: textbook / N. L. Andreeva, G. A. Nozdrin, A.M. Lunegov [et al.].-St.Petersburg : Lan, 2020. — 452 p. — ISBN 978-5-8114-4573-8. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/126918 (accessed June 24, 2025).
5. Internal diseases of animals: textbook / G. G. Shcherbakov, A.V. Yashin, A. P. Kurdeko [et al.]; under the general editorship of G. G. Shcherbakov [et al.].-2nd ed., ster. SaintPetersburg: Lan Publ., 2018, 716 p. ISBN 978-5-8114-1682-0. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/106895 (accessed June 24, 2025).

6. Gaponova V. N., Ponomarenko N. P., Yugatova N. Yu. Bezopasnost ' zhiznedeyatel'nosti [Life safety]. - St.Petersburg : SPbGAVM, [b. g.]. - Part 1-2017. - 59 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121290 (accessed June 24, 2025).

7. Disinsection in the system of anti-epizootic measures / O. R. Polyakova, V. A. Kuzmin, Yu. Y. Danko [et al.]. - SaintPetersburg : SPbGAVM, 2016. - 14 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121295 (accessed June 24, 2025).

8. Disinfection in the system of anti-epizootic measures / O. R. Polyakova, V. A. Kuzmin, Yu. Y. Danko [et al.]. - St.Petersburg : SPbGAVM, 2016. - 72 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121296 (accessed June 24, 2025).

9. Aliev A. A., Pomerantsev D. A., Shershneva I. I. Office work in veterinary institutions and organizations / A. A. Aliev, D. A. Pomerantsev, I. I. Shershneva [et al.]. — SaintPetersburg : SPbGAVM, 2018. - 86 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121297 (accessed June 24, 2025).

10. Deratization in the system of antiepizootic measures / O. R. Polyakova, V. A. Kuzmin, Yu. Y. Danko [et al.]. - St.Petersburg : SPbGAVM, 2016. - 17 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121298 (accessed June 24, 2025).

11. DoronichevaA. N., Firsov G. M. Animal diseases of viral etiology : a textbook / A. N. Doronicheva, G. M. Firsov. Volgograd : Volgogradsky GAU Publ., 2016, 140 p. (in Russian) - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/100789 (accessed June 24, 2025).

12. Zharov A.V. Patologicheskaya anatomiya zhivotnykh : uchebnik [Pathological anatomy of animals: textbook]. - 2nd ed., reprint.and add-ons. SaintPetersburg: Lan Publ., 2013, 608 p. ISBN 978-5-8114-1450-5. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/12985 (accessed June 24, 2025).

13. Zharov A.V. Sudebnaya vetinarnayameditsina :uchebnik [Forensic veterinary medicine: textbook].SaintPetersburg: Lan Publ., 2014, 464 p. ISBN 978-5-8114-1581-6. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/45681 (accessed June 24, 2025).

14. Korolev B. A.токсикологии :, Skosyrskikh L. N., Liberman E. L. Praktikum po toksikologii : uchebnik [Practical work on toxicology: textbook], Е.Л. Либерман. St.Petersburg: Lan Publ., 2016, 384 p. ISBN 978-5-8114-2246-3. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/87580 (accessed June 24, 2025).

15. Korolev B. A., Sidorova K. A. Phytotoxicosis of domestic animals : textbook / B. A. Korolev, K. A. Sidorova. - 2nd ed., reprint.and add-ons. SaintPetersburg: Lan Publ., 2014, 352 p. ISBN 978-5-8114-1589-2. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/41016 (accessed June 24, 2025).

16. Latypov, D. G. Autopsy and pathoanatomic diagnostics of animal diseases: a textbook / D. G. Latypov, I. N. Zalyalov. - 2nd ed., reprint.SaintPetersburg: Lan Publ., 2015, 384 p. ISBN 978-5-8114-1976-0. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/65956 (accessed June 24, 2025).

17. LatypovD. G. Helminthiasis of animals that are dangerous for humans: a textbook / D. G. Latypov. - 3rd ed., reprint.SaintPetersburg: Lan Publ., 2017, 440 p. ISBN 978-5-8114-2626-3. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/95143 (accessed June 24, 2025).

18. LatypovD. G.животных :, Timerbaeva R. R., Kirillov E. G. Parasitology and invasive diseases of ruminants : atextbook, Р.Р. Тимербаева. SaintPetersburg: Lan Publ., 2019, 476 p. ISBN 978-5-8114-3561-6. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121475 (accessed June 24, 2025).

19. LatypovD. G., Timerbaeva R. R., Kirillov E. G. Protozoal diseases of animals dangerous for humans (protozoal zoonoses) : a textbook / D. G. Latypov, R. R. Timerbaeva, E. G. Kirillov. - SaintPetersburg: Lan, 2017. - 208 p. - ISBN 978-5-8114-2631-7. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/96254 (accessed June 24, 2025).

20. LatypovD. G. Spravochnik po pathoanatomicheskoi diagnostike zaraznykh bolezov svinei : uchebnoe posobie [Handbook on pathoanatomic diagnostics of infectious diseases of pigs: Латыпова textbook]. SaintPetersburg: Lan Publ., 2019, 260 p. ISBN 978-5-8114-3231-8. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/111901 (accessed June 24, 2025).

21. Treatment and prevention of diseases of hooves of cattle / V. V. Baylov, A. A. Stekolnikov, M. A. Narusbaeva [et al.]. - St.Petersburg : SPbGAVM, 2017. - 68 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121309 (accessed June 24, 2025).

22. LutfullinM. H.гельминтология : учебное пособие / M.X. Лутфуллин, Latypov D. G., Kornishina M. D. Veterinary helminthology : a textbook. - 2nd ed., ster. SaintPetersburg: Lan Publ., 2018, 304 p. ISBN 978-5-8114-1092-7. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/102228 (accessed June 24, 2025).

23. Non-infectious pathology of cattle in farms with industrial technology : a textbook / A.V. Yashin, G. G. Shcherbakov, I. I. Kalyuzhny [et al.]; under the general editorship of A.V. Yashin. SaintPetersburg: Lan Publ., 2019, 220 p. ISBN 978-5-8114-4058-0. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/125722 (accessed June 24, 2025).

24. Nikitin I. N., Nikitin A. I. Organization of state veterinary supervision : textbook / I. N. Nikitin, A. I. Nikitin. - 2nd ed., reprint.and add-ons. SaintPetersburg: Lan Publ., 2019, 460 p. ISBN 978-5-8114-3437-4. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/113922 (accessed June 24, 2025).

25. Nikitin, I. N. Organization and economics of veterinary business: textbook / I. N. Nikitin, 6th ed., reprint.and add-ons. SaintPetersburg: Lan Publ., 2014, 368 p. ISBN 978-5-8114-1609-7. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/44760 (accessed June 24, 2025).

26. Main syndromes of internal diseases of animals / S. P. Kovalev, A. P. Kurdeko, Yu. K. Kovalenok [et al.]. - St.Petersburg : SPbGAVM, 2013. - 48 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121315 (accessed June 24, 2025).

27. Petryankin F. P., Petrova O. Yu. Diseases of young animals : a textbook / F. P. Petryankin, O. Yu. Petrova. - 2nd ed., reprint.and add-ons. SaintPetersburg: Lan Publ., 2014, 352 p. ISBN 978-5-8114-1606-6. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/44761 (accessed June 24, 2025).

28. Polyantsev, N. I. Practicum on obstetrics, gynecology and biotechnics of animal reproduction : a textbook / N. I. Polyantsev.St.Petersburg: Lan Publ., 2016, 272 p. ISBN 978-5-8114-1789-6. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/71726 (accessed June 24, 2025).

29. Practicum on internal diseases of animals: textbook / G. G. Shcherbakov, A.V. Korobov, B. M. Anokhin [et al.]; edited by G. G. Shcherbakov. - 2nd ed. St.Petersburg: Lan Publ., 2004, 544 p. ISBN 5-8114-0495-6. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/202 (accessed June 24, 2025).

30. Practicum on internal diseases of animals: textbook / G. G. Shcherbakov, A.V. Yashin, A. P. Kurdeko [et al.]; under the general editorship of G. G. Shcherbakov [et al.].-2nd ed., ster. SaintPetersburg: Lan Publ., 2018, 544 p. ISBN 978-5-8114-1999-9. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/109630 (accessed June 24, 2025).

31. Practicum on private surgery : a textbook / A. A. Stekolnikov, B. S. Semenov, O. K. Sukhovolsky, E. I. Veremey; edited by A. A. Stekolnikov. SaintPetersburg: Lan Publ., 2013, 352 p. ISBN 978-5-8114-1503-8. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/38844 (accessed June 24, 2025).

32. SalimovV. A. Praktikum po patologicheskoi anatomii zhivotnykh : uchebnoe posobie [Practical work on the pathological Салимованatomy of animals: a textbook]. — 3rd ed., ispr. and add. SaintPetersburg: Lan Publ., 2018, 256 p. ISBN 978-5-8114-1418-5. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/107269 (accessed June 24, 2025).

33. Shakurov M. Sh. Osnovy obshchey veterinarnoi khirurgii : uchebnoe posobie [Fundamentals of general veterinary surgery: a textbook]. - 2nd ed., ster. St.Petersburg: Lan Publ., 2016, 252 p. ISBN 978-5-8114-1204-4. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/76290 (accessed June 24, 2025).

34. Epizootology with microbiology: textbook / A. S. Aliev, Yu. Y. Danko, I. D. Eshchenko [et al.]; edited by V. A. Kuzmin, A.V. Svyatkovsky. - 4th ed., ster. SaintPetersburg: Lan Publ., 2019, 432 p. ISBN 978-5-8114-2017-9. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/112071 (accessed June 24, 2025).

8.2. Additional literature

1. Antimicrobial and antiparasitic agents / N. L. Andreeva, A.M. Lunegov, O. S. Popova, V. A. Baryshev. SaintPetersburg: SPbGAVMPubl., 2017, 57 p. (in Russian) - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121282 (accessed June 24, 2025).

2. Bespalova N. S.Цестодология для ветеринарных врачей :, Koroleva S. N. Cestodologiya dlya veterinarnykh vrachei : uchebnoe posobie [Cestodology for veterinary doctors: a textbook]. - SaintPetersburg: Lan, 2017. - 216 p. - ISBN 978-5-8114-2662-1. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/97682 (accessed June 24, 2025).

3. Vasiliev V. K., Tsybikzhapov A.D. Veterinary ophthalmology and orthopedics : a textbook. - SaintPetersburg: Lan, 2017. - 188 p. - ISBN 978-5-8114-2490-0. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/92625 (accessed June 24, 2025).

4. Internal diseases of animals. For secondary schools: textbook / G. G. Shcherbakov, A.V. Yashin, S. P. Kovalev, S. V. Vinnikova. - 4th ed., ster. SaintPetersburg: Lan Publ., 2019, 496 p. ISBN 978-5-8114-4328-4. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/118743 (accessed June 24, 2025).

5. Internal diseases of animals. Prevention and therapy : textbook / G. G. Shcherbakov, A.V. Korobov, B. M. Anokhin [et al.]; edited by G. G. Shcherbakov. — 5th ed., ispr. and add. St.Petersburg: Lan Publ., 2009, 736 p. ISBN 978-5-8114-0012-2. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/201 (accessed June 24, 2025).

6. Zubareva I. M.болезней :, Vasilevich V. I., Donchenko A. S. Aspects of general epizootology of invasive diseases : a textbook. Novosibirsk : NGAU Publ., 2016, 275 p. (in Russian) - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/90996 (accessed June 24, 2025).

7. Karpenko L. Yu., Vasilyeva S. V., Bakhta A. A. [et al.], SaintPetersburg : SPbGAVM, 2018, 126 p. (in Russian) - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121306 (accessed June 24, 2025).

8. Complex therapy and therapeutic techniques in veterinary medicine: a textbook / A. A. Stekolnikov, G. G. Shcherbakov, A.V. Korobov [et al.]; edited by A. A. Stekolnikov. St.Petersburg: Lan Publ., 2007, 288 p. ISBN 978-5-8114-0676-0. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/382 (accessed June 24, 2025).

9. KonopeltsevI. G., Sapozhnikov A. F. Biologicheskie svoystva hormonov i ikh primenenie v vetinarii : uchebno-metodicheskoe posobie [Biological properties of hormones and their application in veterinary medicine: a training manualКонопельцев]. SaintPetersburg: Lan Publ., 2013, 192 p. ISBN 978-5-8114-1453-6. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/30197 (accessed June 24, 2025).

10. KudachevaN. A. Organization of veterinary business : a textbook / N. A. Kudacheva. - Samara : SamGAUPubl., 2019. - 131 p. - ISBN 978-5-88575-558-0. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/123535 (accessed June 24, 2025).

11. Лекарственные средства, применяемые в ветеринарном акушерстве, гинекологии, андрологии и биотехнике размножения Dyulger G. P., Khramtsov V. V., Sibileva Yu.G., Kemeshov Zh. O. Medicinal products used in veterinary obstetrics, gynecology, andrology and biotechnics of animal reproduction : a textbookДюльгер, В.В. Храмцов, Ю.Г. Сибилева, Ж.О. Кемешов. St.Petersburg: Lan Publ., 2016, 272 p. ISBN 978-5-8114-2152-7. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/75510 (accessed June 24, 2025).

12. Микобактерии и микобактериальные инфекции животных :M. I. Gulyukin, A. I. Klimenko, N. P. Ovdienko, and others, Mycobacteria and mycobacterial infections of animals : a textbookОвдиенко, St.Petersburg: Lan Publ., 2018, 304 p.ISBN 978-5-8114-2851-9. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/102214 (accessed June 24, 2025).

13. Nikitin, I. N. National and international veterinary legislation : a textbook / I. N. Nikitin, A. I. Nikitin. SaintPetersburg: Lan Publ., 2017, 376 p. ISBN 978-5-8114-2316-3. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/90062 (accessed June 24, 2025).

14. Organization of veterinary entrepreneurial activity / D. A. Orekhov, D. V. Zakhodnova, I. V. Shershneva [et al.]. - SaintPetersburg : SPbGAVM, 2016. - 79 p. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121314 (accessed June 24, 2025).

15. Pathological physiology and pathological anatomy of animals: textbook / A.V. Zharov, L. N. Adamushkina, T. V. Loseva, A. P. Strelnikov; edited by A.V. Zharov. - 5th ed., ster. St.Petersburg: Lan Publ., 2019. 416 p. ISBN 978-5-8114-4250-8. Text: Electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/117713 (accessed June 24, 2025).

16. Handbook of veterinary therapists : a textbook / G. G. Shcherbakov, N. V. Danilevskaya, S. V. Starchenkov [et al.]; edited by G. G. Shcherbakov. — 5th ed., ispr. and add. SaintPetersburg: Lan Publ., 2009, 656 p. ISBN 978-5-8114-0241-0. - Text : electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/445 (accessed June 24, 2025).

17. Эпизоотология, диагностика, профилактика микоплазмозовDanko Yu. Y., Kudryavtseva A.V., Kuzmin V. A. Epizootology, diagnostics, prevention of mycoplasmosis in goats [et al.]. — SaintPetersburg: SPbGAVM, 2015. - 30 p. - Text: electronic // Electronic library system "Lan" : [website]. - URL: https://e.lanbook.com/book/121328 (accessed June 24, 2025).

8.3. Internet resources

Students can use the following online resources for training:

1. https://meduniver.com://meduniver.com -Medical information site.
2. http://studvet.ru / Veterinary portal.
3. Veterinary medicine. rf
4. Main Veteran portal of Russia
5. Veterinary medicine

6. Encyclopedia of medicines and pharmacy products
7. Справочник Vidal Vet Reference Book

8.4. Electronic library systems

1. EBS "SPBGUVM"
2. EBS "Lan Publishing House"
3. EBS "Student's consultant"
4. ConsultantPlus LegalReference System»
5. University information system "RUSSIA"
6. Full-text database POLPRED.COM
7. Scientific Electronic Library ELIBRARY.RU
8. Russian Scientific Network
9. IQlib Electronic Library SystemIQlib
10. Database of International Science Citation Indexes Web of Science
11. ProQuest AGRICULTURAL AND ENVIRONMENTAL SCIENCE DATABASE, a full-text interdisciplinary database for agricultural and environmental sciencesProQuest AGRICULTURAL AND ENVIRONMENTAL SCIENCE DATABASE
12. Electronic books published by Prospekt Nauki Publishing House http://prospektnauki.ru/ebooks/
13. Collection " Agriculture. Veterinary Medicine"Квадроby Kvadro Publishing House http://www.iprbookshop.ru/586.html

9. LIST OF INFORMATION TECHNOLOGIES USED IN RESEARCH AND DEVELOPMENT, INCLUDING A LIST OF SOFTWARE AND INFORMATION REFERENCE SYSTEMS

9.1. Information technologies:

When performing the internship program, it is planned to use information technologies:

- ✓ interactive technologies (conducting dialogues, collective discussion of various approaches to solving a particular educational and professional task);
- ✓ interaction with students via e-mail;
- ✓ joint work in the Electronic information and Educational environment of St. Petersburg State University of Internal Affairs: https://spbguvm.ru/academy/eiosacademy/eios

9.2. Software:

List of licensed and freely distributed software, including those produced in Russia:

n /	a Name of technical and computer training tools recommended by sections and topics	License
1	MS PowerPoint	67580828
2	LibreOffice	free software
3	OS Alt Education 8	AAO. 0022. 00
4	ABIS "MARK-SQL"	02102014155
5	MSWindows 10	67580828
6	System ConsultantPlus	503 /KL
7	AndroidOS	free software

10. EDUCATIONAL WORK

As part of the implementation of the discipline, educational work is carried out to form a modern scientific worldview and a system of basic values, to form and develop spiritual and moral, civil and patriotic values, a system of aesthetic and ethical knowledge and values, attitudes of tolerant consciousness in society, to form students ' needs for work as the first vital necessity, the highest value and the main success in life, to realize the social significance of your future profession.

11. MATERIAL AND TECHNICAL BASE REQUIRED FOR RESEARCH AND DEVELOPMENT

Research work for students is carried out on the basis of state and non-state veterinary and scientific institutions, enterprises of the agro-industrial complex of Moscow.St.Petersburg and Leningrad region, in other regions of the Russian Federation, as well as in the university's structural divisions.

For an integrated approach and development of the internship program, the university has the material and technical base and resources:

Name of the discipline (module), practices in accordance with the curriculum	**Name of special rooms and rooms for independent work**	**Equipment of special rooms and rooms for independent work**
R	& D 206 Large reading room (196084, St. Petersburg, Chernihiv str., 5) Room for independent work	*Specialized furniture*: tables, chairs *Technical training facilities:* computers with Internet connection and access to electronic information and educational environment
	214 Small reading room (5 Chernigovskaya str., Saint Petersburg, 196084) Self-study room	*Specialized furniture:* tables, chairs *Technical training facilities:* computers with Internet connection and Internet access electronic information and educational environment
	324 Department of Information Technologies (5 Chernigovskaya Street, Saint Petersburg, 196084) Room for storage and preventive maintenance of educational equipment	*Specialized furniture:* tables, chairs, special equipment, materials and spare parts for preventive maintenance of technical training equipment

	Box No. 3 Carpentry workshop (196084, Saint Petersburg, Russia) St. Petersburg, Chernihiv str., 5) Room for storage and preventive maintenance of educational equipment	*Specialized furniture:* tables, chairs, special equipment, materials for preventive maintenance of specialized furniture

The working program was compiled by:

Head of the GEP and SIO Department, associate professor,
candidate of veterinary Sciences

Е.Ю. Финагеев

Appendix 1

Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
higher education
"Saint Petersburg State University
veterinary medicine"

EVALUATION FUNDS FUND

current control and intermediate certification of students during the development of OPOP HE, which implements the Federal State Educational Standard for Higher Education for research work

(obtaining primary skills in research work)

Higher education level
SPECIALTY
Specialty 36.05.01 Veterinary Medicine
Full-time forms of study

The start year of training is 2025

Saint-Petersburg
2025

1. PASSPORT OF THE R & D EVALUATION FUND

Table 1

#	Formed competencies	Controlled sections (topics) of the discipline	Evaluation tool
	CC-1 is able to carry out critical analysis of problem situations based on a systematic approach, develop a strategy for actions of CC-1ID-1 Know the methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis. CC-1ID-2 To be able to acquire new knowledge based on analysis, synthesis, etc.; to collect and summarize data on current scientific problems related to the professional field; to search for information and solutions based on actions, experiments, experience, information and communication technologies. UK-1ID-3 Master the study of the problem of professional activity using analysis, synthesis and other methods of intellectual activity, including the use of information and communication technologies; identifying problems and using adequate methods to solve them; demonstrating value judgments in solving problematic professional situations. UK-2 is able to manage a project at all stages of its life cycle UK-2ID-1 Knows the methods of presenting and describing the results of project activities, including on the basis of digital technologies; methods, criteria and parameters for evaluating the results of project implementation; principles, methods and requirements for project work. UK-2ID-2 Be able to justify the theoretical and practical significance of the results obtained; check and analyze project documentation; predict the	of animals Animal hygiene	Preparation of a research report Protection of a research
		report Clinical diagnostics	
		Veterinary pharmacology. Toxicology	
		Operative surgery with topographic anatomy	
		Veterinary Microbiology and Mycology	

	development of processes in the project professional field; put forward innovative ideas and non-standard approaches to their solution in order to implement the project; calculate qualitative and quantitative results, deadlines for project work. UK-2ID-3 Master project management in the field of relevant professional activities, including on the basis of digital technologies; distribution of tasks and motivation to achieve goals; management of the development of the project specification, management of the implementation of specialized project work and the process of discussing and finalizing the project; participation in the development of the project specification, development of the project implementation program in professional area; organization of professional discussion of the project, participation in the management of project documentation; design of the project implementation schedule; determination of requirements for the results of project implementation. UK-4 is able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction of UK-4ID-1 Know computer and information and communication technologies, information and digital infrastructure in the organization; communication in professional ethics; factors for improving communication in the organization, communication technologies in professional interaction; characteristics of communication flows; the importance of communication in professional interaction; methods		

	for studying the communicative potential of an individual; modern information and communication technologies. UK-4ID-2 To be able to create written texts of scientific and official-business speech styles on professional issues in Russian and foreign languages; to study the passage of information on managerial communications; to determine internal communications in the organization, including using digital technologies. UK-4ID-3 Master the principles of forming a communication system; analyze the system of communication links in the organization by performing oral and written communications, including in a foreign language; presenting plans and results of their own and team activities using communication technologies; technology for building effective communication in the organization; transfer of professional information in information and telecommunications networks using the following methods: modern means of information and communication technologies.. OPK-1 is able to determine the biological status and regulatory clinical indicators of animal organs and body systems OPK-1ID-1 is able to know safety techniques and personal hygiene rules when examining animals, how to fix them; schemes for clinical research of an animal and the procedure for studying individual body systems, including using digital technologies; methodology for recognizing the pathological process. OPK-1ID-2 is able to collect and analyze anamnestic data, conduct laboratory and functional		

	studies using digital computer technologies necessary to determine the biological status of animals. OPK-1ID-3 Possess practical skills in conducting an independent clinical examination of an animal using classical research methods and digital technologies. OPK-2 Able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal body OPK-2ID-1 To know environmental factors of the environment, their classification and the nature of relationships with living organisms; basic ecological concepts, terms and laws of bioecology; interspecific relations of animals and plants, predator, etc. victims, parasites and hosts; ecological features of some types of pathogenic microorganisms; mechanisms of influence of anthropogenic and economic factors on the animal body. OPK-2ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine for the prevention of infectious and invasive diseases and treatment of animals; use environmental monitoring methods in the environmental expertise of agricultural facilities and the production of agricultural products, including: including using digital technologies; assess the impact of anthropogenic and economic factors on the animal body.		

	OPK-2ID-3 Possess an idea of the origin of living organisms, the levels of organization of living matter, favorable and unfavorable factors affecting the body; the basis for studying the ecological knowledge of the surrounding world, the laws of development of nature and society; the skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, in particular using digital technologies , OPK-3 is able to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex OPK-3ID-2 is able to find up-to-date, up-to-date and reliable information about veterinary legislation, including, with the use of digital technologies, the rules and regulations governing veterinary activities, including: or another region and/or country. OPK-4 is able to use in professional activity methods of problem solving using modern equipment in the development of new technologies and use modern professional methodology for conducting experimental research and interpreting their results OPK-4ID-1 Know the technical capabilities of modern specialized equipment, methods for solving problems of professional activity. OPK-4ID-2 Should be able to apply modern technologies, including digital ones, and research methods in professional activities, and interpret the results obtained. OPK-4ID-3 Possess the skills of working with specialized equipment for the implementation of tasks set during research and development of new technologies, including digital		

	OPK-5 is able to draw up special documentation, analyze the results of professional activities and submit reporting documents using specialized databases OPK-5ID-1 Is able to apply new information technologies to solve the following tasks: perform tasks set in their professional activities, work with specialized information databases. OPK-5ID-2 Possess skills in working with the operating system, with text and table processors, with database management systems, with information and search engines on the Internet. OPK-5ID-3 To know new information technologies for solving tasks in their professional activities, to work with specialized information databases. PC-9 Development of recommendations for special feeding of sick animals for therapeutic purposes PC-9ID-1 Know the types of dietary regimes, principles of feed selection using digital technologies, norms, feeding regimes in animal diet therapy PC-15 Organization of organizational, technical, zootechnical and veterinary measures aimed at the prevention of non-infectious diseases in accordance with the plan prevention of non-infectious animal diseases, analysis of the effectiveness of measures for the prevention of animal diseases in order to improve them PC-15ID-1 Be able to assess the impact of conditions for keeping and feeding animals on their health in the framework of implementing action plans for the prevention of animal diseases using digital technologies		

	PC-15ID-2 Be able to assess the effectiveness of preventive measures implementation, including using digital technologies PC-15ID-3 Be able to carry out veterinary quality control and preparation of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-15ID-4 Be able to perform a diagnostic examination of animals in the framework of medical examinations for the timely detection of early preclinical and clinical signs of the disease PK-15ID-5 Know the types of measures for the prevention of non-infectious animal diseases and metabolic disorders in animals and the requirements for their implementation in accordance with methodological guidelines, instructions, instructions, rules for diagnosis, prevention and treatment		

Table 2

LIST OF EVALUATION TOOLS FOR RESEARCH AND DEVELOPMENT

№ n /	a Name of the valuation instrument	Brief description of the valuation instrument	Presentation of the valuation instrument in the fund
1.	Preparing a research report.	The product of a student's independent work, which is a succinct and consistent presentation in writing, obtained as a result of planning and performing a set of production and research tasks. It allows you to assess the ability of students to independently construct their knowledge in the process of solving practical problems and problems, to navigate in the information space and the level of formation of analytical, research skills, practical and creative thinking skills. It is performed individually based on the results of mastering the research program	of the Research Topic
2.	Defense of the research report	is a product of independent work of a student, which is a public speech to present the results of research on issues corresponding to the level of theoretical training.	Research topics

2. INDICATORS AND CRITERIA FOR ASSESSING COMPETENCIES AT VARIOUS STAGES OF THEIR FORMATION, DESCRIPTION OF ASSESSMENT SCALES

Planned results of competence	development Level of development				Evaluation tool
	Unsatisfactory	Satisfactory	Good	Excellent	
UK-1 is able to carry out critical analysis of problem situations based on a systematic approach, develop a strategy for actions					
UK-1ID-1 Know the methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis.	The level of knowledge is below the minimum requirements, there were gross mistakes	The minimum allowable level of knowledge, many non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, several non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and defense of the research report
of the UK-1ID-2 Be able to acquire new knowledge based on analysis, synthesis, etc.; collect and summarize data on current scientific problems related to the professional field; search for information and solutions based on actions, experiments, experience, information and communication technologies.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	, all basic skills were demonstrated. skills, solved all the main tasks with some minor shortcomings, completed all tasks in full	Writing an abstract. Preparation and defense of the R & D report
UK-1ID-3 Master the study of the problem of professional activity using analysis, synthesis and other methods of intellectual activity, including the use of information and communication technologies; identifying problems and using adequate methods to solve them; demonstrating value judgments in solving problematic professional situations.	When solving standard problems, basic skills were not demonstrated, there were gross mistakes	There is a minimum set of skills for solving standard problems with some shortcomings	Basic skills were demonstrated when solving standard problems with some shortcomings	Skills were demonstrated when solving non-standard problems without errors and shortcomings	Writing an abstract. Preparation and protection of the R
& D report UK-2 is able to manage the project at all stages of its life cycle					
UK-2ID-1 Know methods of presenting and describing the results of project activities, including on the basis of digital technologies; methods, criteria and parameters for evaluating the results of project implementation; principles, methods and requirements for project work.	The level of knowledge is below the minimum requirements, there were gross mistakes	The minimum allowable level of knowledge, many non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, several non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and protection
of the UK-2ID-2 research report Be able to justify the theoretical and practical significance of the results obtained; check and analyze project documentation; predict the development of processes in the project professional field; put forward innovative ideas and non-standard approaches to their solution in order to implement the project; calculate qualitative and quantitative results, deadlines for project work.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	, all basic skills were demonstrated. skills, solved all the main tasks with some minor shortcomings, completed all tasks in full	Writing an abstract. Preparation and defense of the R
& D report UK-2ID-3Master project management in the field of relevant professional activities, including on the basis of digital technologies; distribution of tasks and motivation to achieve goals; management of the development of the project specification, management of the implementation of specialized project work and the process of discussing and finalizing the project; participation in the development of the project specification development of the project implementation program in the professional field; organization of professional discussion of the project, participation in project documentation; design of the project implementation schedule; determination of requirements for project implementation results.	When solving standard problems, basic skills were not demonstrated, there were gross mistakes	There is a minimum set of skills for solving standard problems with some shortcomings	Basic skills were demonstrated when solving standard problems with some shortcomings	Skills were demonstrated when solving non-standard problems without errors and shortcomings	Writing an abstract. Preparation and defense of the research report
UK-4 is able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction					

UK-4ID-1 Know computer and information and communication technologies, information and digital infrastructure in the organization; communication in professional ethics; improvement factors communications in the organization, communication technologies in professional interaction; characteristics of communication flows; the importance of communication in professional interaction; methods for studying the communicative potential of an individual; modern means of information and communication technologies.	The level of knowledge is below the minimum requirements, there were gross mistakes	The minimum allowable level of knowledge, many non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, several non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and protection
of the UK-4ID-2 research report Be able to create written texts of scientific and official-business speech styles on professional issues in Russian and foreign languages; research the passage of information on managerial communications; determine internal communications in the organization, including using digital technologies.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	, all basic skills were demonstrated. skills, solved all the main tasks with some minor shortcomings, completed all tasks in full	Writing an abstract. Preparation and defense of the R
& D report UK-4ID-3Master the principles of forming a communication system; analyze the system of communication links in the organization by performing oral and written communications, including in a foreign language; presenting plans and results of their own and team activities using communication technologies; technology for building effective communication in the organization; transfer of professional information to the public; information and telecommunication networks using modern means of information and communication technologies..	When solving standard problems, basic skills were not demonstrated, there were gross mistakes	There is a minimum set of skills for solving standard problems with some shortcomings	Basic skills were demonstrated when solving standard problems with some shortcomings	Skills were demonstrated when solving non-standard problems without errors and shortcomings	Writing an abstract. Preparation and protection of the R
& D report OPK-1 is able to determine the biological status and regulatory clinical indicators of animal organs and body systems					
OPK-1ID-1 Know the safety and personal hygiene rules when examining animals, how to fix them; schemes of clinical research of an animal and the procedure for studying individual body systems, including using digital technologies; methodology for recognizing the pathological process.	The level of knowledge is below the minimum requirements, there were gross mistakes	The minimum allowable level of knowledge, many non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, several non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and defense of the R & D report
OPK-1ID-2 Be able to collect and analyze anamnestic data, conduct laboratory and functional studies using digital computer technologies necessary to determine the biological status of animals.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	All basic skills were demonstrated, all basic tasks were solved with some minor shortcomings, all tasks were completed in full	Writing an abstract. Preparation and defense of the R & D report
OPK-1ID-3 Possess practical skills for independent clinical examination of an animal using classical research methods and digital technologies.	When solving standard problems, basic skills were not demonstrated, there were gross mistakes	There is a minimum set of skills for solving standard problems with some shortcomings	Basic skills were demonstrated when solving standard problems with some shortcomings	Skills were demonstrated when solving non-standard problems without errors and shortcomings	Writing an abstract. Preparation and defense of the R
& D report OPK-2 is able to interpret and evaluate in professional activities the impact of natural, socio-economic, genetic and economic factors on the physiological state of the animal body					
OPK-2ID-1 Know environmental factors of the environment, their classification and the nature of relationships with living organisms; basic environmental concepts, terms and laws of bioecology interspecific relationships of animals and plants, predator and prey, parasites and hosts; ecological features of some types of pathogenic microorganisms;	The level of knowledge is below the minimum requirements, there were gross mistakes	The minimum allowable level of knowledge, many non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, several non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and defense of the R

mechanisms of influence of anthropogenic and economic factors on the animal body.					
& D report OPK-2ID-2 Be able to use environmental factors and environmental laws in agricultural production; apply the achievements of modern microbiology and ecology of microorganisms in animal husbandry and veterinary medicine for the prevention of infectious and invasive diseases and treatment of animals; use environmental monitoring methods for environmental expertise of agricultural facilities and production of agricultural products.use of digital technologies; assess the impact of anthropogenic and economic factors on the animal body.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	, all basic skills were demonstrated. skills, solved all the main tasks with some minor shortcomings, completed all tasks in full	Writing an abstract. Preparation and protection
of the OPK-2ID-3 research report Possess an idea of the origin of living organisms, the levels of organization of living matter, the favorable and unfavorable factors affecting the body; the basis for studying the ecological knowledge of the surrounding world, the laws of nature and society; the skills of observation, comparative analysis, historical and experimental modeling of the impact of anthropogenic and economic factors on living objects, including with the use of digital technologies	In solving standard problems Basic skills were not demonstrated, there were gross errors	There is a minimum set of skills for solving standard problems with some shortcomings	Basic skills were demonstrated in solving standard problems with some shortcomings	Skills were demonstrated in solving non-standard problems without errors and shortcomings	Writing an abstract. Preparation and defense of the R
& D report OPK-3 is able to carry out and improve professional activities in accordance with regulatory legal acts in the field of agro-industrial complex					
OPK-3ID-2 is able to find up-to-date, up-to-date and reliable information about veterinary legislation, including the use of digital technologies, rules and regulations governing veterinary activities in a particular area in a different region and/or country.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	, all basic skills were demonstrated. skills, solved all the main tasks with some minor shortcomings, completed all tasks in full	Writing an abstract. Preparation and defense of the R
& D report OPK-4 is able to use in professional activities methods of solving problems using modern equipment in the development of new technologies and use modern professional methodology for conducting experimental research and interpreting their results					
OPK-4ID-1 Know the technical capabilities of modern specialized equipment, methods for solving problems of professional activity.	The level of knowledge is below the minimum requirements, there were gross mistakes	The minimum allowable level of knowledge, many non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, several non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and defense of the R & D report
OPK-4ID-2 Be able to apply modern technologies, including digital ones, and research methods in professional activities, and interpret the results obtained.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	All basic skills were demonstrated, all basic tasks were solved with some minor shortcomings, all tasks were completed in full	Writing an abstract. Preparation and defense of the R
& D report OPK-4ID-3 Possess the skills of working with specialized equipment for the implementation of tasks when conducting research and developing new technologies, including digital	ones, Basic skills were not demonstrated When solving standard tasks, there were gross errors	There is a minimum set of skills for solving standard tasks with some shortcomings	Basic skills were demonstrated when solving standard problems with some shortcomings	, skills are demonstrated in solving non-standard problems without errors and shortcomings	. Writing an abstract. Preparation and protection of the R & D report
OPK-5 is able to draw up special documentation, analyze the results of professional activities and submit reporting documents using specialized databases					
OPK-5ID-3 Know new information technologies for solving tasks in their professional activities, work with specialized information databases.	The level of knowledge is below the minimum requirements, there were gross mistakes	The minimum allowable level of knowledge, many non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, several non-rough mistakes	were made The level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and protection of the R & D report

OPK-5ID-1 Be able to apply new information technologies to solve tasks in their professional activities, work with specialized information databases.	When solving standard tasks, basic skills were not demonstrated, there were gross mistakes	, basic skills were demonstrated, standard tasks with minor errors were solved, all tasks were completed, but not in full	, all basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with shortcomings	, all basic skills were demonstrated. skills, solved all the main tasks with some minor shortcomings, completed all tasks in full	Writing an abstract. Preparation and protection of the R & D report
OPK-5ID-2 Master the skills of working with the operating system, with text and table processors, with database management systems, with information and search engines on the Internet.	When solving standard problems, basic skills were not demonstrated, there were gross mistakes	There is a minimum set of skills for solving standard problems with some shortcomings	Basic skills were demonstrated when solving standard problems with some shortcomings	Skills were demonstrated when solving non-standard problems without errors and shortcomings	Writing an abstract. Preparation and defense of the R
& D report PC-9 Development of recommendations for special feeding of sick animals for therapeutic purposes					
PC-9ID-1 Know the types of dietary regimens, principles of feed selection using digital technologies, norms, feeding modes in animal diet	therapy Level of knowledge below the minimum requirements, there were gross mistakes	Minimum permissible level of knowledge, many minor mistakes	made Level of knowledge in the amount corresponding to the training program, several minor mistakes	made Level of knowledge in the amount corresponding to the training program, no mistakes	Writing an abstract. Preparation and defense of the R
& D report PC-15 Organization of organizational, technical, zootechnical and veterinary measures aimed at the prevention of non-infectious diseases in accordance with the plan for the prevention of non-infectious animal diseases, analysis of the effectiveness of measures for the prevention of animal diseases in order to improve them					
PC-15ID-5 Know the types of measures for the prevention of non-infectious animal diseases and metabolic disorders the	The level of knowledge is below the minimum requirements, and there were some serious mistakes	Minimum acceptable level of knowledge, many minor mistakes were made	Level of knowledge in the scope corresponding to the training program, several minor mistakes were made	level of knowledge is below the minimum requirements, there were gross mistakes Minimum permissible level of knowledge, many non-rough mistakes Level of knowledge in the amount corresponding to the training program, several non-rough mistakes Level of knowledge in the amount corresponding to the training program, several non-rough mistakes were made Level of knowledge in the amount corresponding to the training program, several non-rough mistakes were made Level of knowledge in the amount corresponding to the training program, several non-rough mistakes were made Level of knowledge in the amount corresponding to the training program, several non-rough mistakes were made Level of knowledge in the amount corresponding to the	Writing an abstract without errors. Preparation and protection of the R

				training program, several non-rough mistakes were made to the extent that corresponds to the training program,	
& D report PC-15ID-1 Be able to assess the impact of conditions of keeping and feeding animals on their health status in the framework of implementing action plans for the prevention of animal diseases using digital technologies PC-15ID-2 Be able to assess the effectiveness of preventive measures and methods of their implementation, including using digital technologies PC-15ID-3 Be able to carry out veterinary quality control and preparation of animal feed in order to ensure their veterinary and sanitary safety as part of the implementation of action plans for the prevention of animal diseases PC-15ID-4 Be able to perform a diagnostic examination of animals in the framework of medical examinations for the timely detection of early preclinical and clinical signs	of the disease basic skills, major mistakes	were made Basic skills were demonstrated, typical tasks with minor errors were solved, all tasks were completed, but not in full	All basic skills were demonstrated, all basic tasks with minor errors were solved, all tasks were completed in full, but some with defects	All basic skills were demonstrated, all basic tasks were solved with some minor shortcomings, all tasks were completed in full	Writing an abstract. Preparation and protection of the research report

3. LIST OF CONTROL TASKS AND OTHER MATERIALS REQUIRED FOR EVALUATING KNOWLEDGE, SKILLS, AND EXPERIENCE IN RESEARCH AND DEVELOPMENT ACTIVITIES

3.1. Topics for research work[1][2]

3.1.1. In the section "Animal hygiene":

1. Influence of atmospheric factors and indoor microclimate on the health and productivity of agricultural animals. Hygienic requirements for the air environment for a certain group of animals (cows, calves, horses, etc.)
2. Measures to ensure an optimal microclimate in a particular livestock facility. Study of ventilation systems. Calculation of hourly ventilation volume and heat balance. Effective methods for improving the microclimate.
3. Hygienic requirements for the soil and its sanitary-hygienic assessment.
4. Hygienic requirements for water. Water quality assessment. Methods of cleaning and decontamination. Hygienic requirements for water supply and watering of farm animals.
5. Hygienic requirements for feed and feeding of agricultural animals. Feed quality assessment. Prevention of feed poisoning.
6. Hygiene of care for agricultural animals.
7. Study of regulatory documents used in drawing up tasks for designing livestock facilities (SNiPs, NTP, RD, etc.)
8. Study of project documentation. Zoohygienic requirements for project documentation. Veterinary expertise of standard projects of animal husbandry premises and veterinary facilities.
9. Basic properties of building materials. Study of the influence of humidity of building materials on their thermal engineering characteristics. Hygienic requirements for building materials.
10. The role of engineering equipment in providing a microclimate in livestock premises. Ventilation, heating and manure removal systems.

3.1.2. Under the section "Clinical diagnostics":

1. Clinical trial plan.
2. Preliminary information about animals (registration, medical history).
3. Anamnesis and its significance in the diagnosis of animal diseases.
4. Habitus, its definition and significance in disease recognition.
5. Examination of visible mucous membranes (physiological properties, pathological changes).
6. Study of coat and hair in mammals, plumage in birds, skin and subcutaneous tissue. Clinical significance.

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[1] Темы НИР для обучающихся определяются преподавателем по согласованию со студентом.

[2] Формы текущего контроля и промежуточной аттестации при подготовке отчетных форм по НИР - реферата и отчета по НИР предусматривают формирование следующих компетенций: УК-1; УК-2; УК-4; ОПК-3; ОПК-4; ОПК-5; ПК-6

7. Examination of superficial lymph nodes, clinical significance.
8. Thermometry. Limits of body temperature fluctuations in healthy animals. Fevers. Stages of fevers. Clinical significance. The concept of hyperthermia and homothermia.
9. Examination and palpation of the heart area. Cardiac impulse (mechanism of formation, localization). Changes in heart rate..
10. Heart percussion technique. The boundaries of cardiac dullness in different animal species are normal and changing.

3.1.3. In the section "Operative surgery with topographic anatomy":

1. Safety precautions for providing surgical care to horses. Fixing and dumping of horses, pigs, and small cattle.
2. Safety precautions for providing surgical care to cattle, dogs, and cats. Fixing and collapsing cattle, fixing dogs and cats.
3. Prevention of surgical infection (operating procedure in the operating room, preparation of hands, sterilization of instruments).
4. Preparation of the operational field. Suture and dressing material, its characteristics and sterilization. Surgical underwear, its characteristics and sterilization.
5. Principles of bone separation and joining. Types of surgical sutures (skin, muscle, etc.). Connecting bones.
6. Operations on the intestines and stomach, bowel resection. Principles of applying intestinal sutures.
7. Mastering the technique of drug administration. Castration of guinea pigs.
8. Head surgery in cattle.
9. Neck surgery.
10. Desmurgia.
11. Castration of stallions.
12. Castration of boars.
13. Surgical treatment of hernias.

3.1.4. In the section " Veterinary pharmacology. Toxicology":

1. Transformation of medicinal substances in the body.
2. Mechanism and types of action of medicinal substances.
3. Dosage of medicinal substances.
4. Effects of drugs during repeated administration.
5. Factors affecting the effect of drugs.
6. Drug interactions (synergism, antagonism).
7. Dependence of the action of medicinal substances on the dosage form.
8. Side effects of medicinal substances. Classification.
9. General characteristics of analgesics.
10. Narcotic analgesics.
11. Non-narcotic analgesics.
12. Antipsychotics and tranquilizers.
13. Sedatives.

14. Groups of purine bases and strychnine.
15. Camphor group. Cordiamine.
16. Cholinomimetic and anticholinesterase agents.
17. Anticholinergic agents.
18. Adrenomimetic agents.
19. Ganglion blockers, antihistamines, and muscle relaxants.
20. Emetics, expectorants, and ruminants.
21. Local anesthetics (cocaine, novocaine, lidocaine).
22. Local anesthetics (anaesthesin, dicaine, trimecaine).
23. Solid dosage forms.
24. Liquid dosage forms.
25. Soft and dense dosage forms.

4. METHODOLOGICAL MATERIALS DEFINING PROCEDURES FOR ASSESSING KNOWLEDGE, SKILLS AND ABILITIES AND EXPERIENCE OF ACTIVITIES THAT CHARACTERIZE THE STAGES OF COMPETENCE FORMATION

Intermediate certification based on the results of students ' research is carried out on the basis of a research report drawn up in accordance with the established requirements.

The form of intermediate certification is the defense of the report at the supervising department with the assignment of credit to the student.

Summing up the results of research involves identifying the degree of implementation of the research program by the student, the completeness and quality of the collected material, the availability of the results of the analysis, calculations, the degree of validity of conclusions and proposals in the submitted material and its design, the development of measures and ways to eliminate them.

Evaluation of research results is carried out based on the results of the defense of the research report, at a meeting of the department with the obligatory presence of the head of scientific work. The time of certification is determined in accordance with the schedule approved by the Training Department.

Students who have not submitted the report documentation, who have not submitted it in full, or who have violated the registration rules are not allowed to defend the report.

The procedure of current and intermediate monitoring of students with disabilities and persons with disabilities in research and development is carried out using funds of assessment tools adapted to the limitations of their health and perception of information, including the use of special technical means.

If necessary, persons with disabilities and persons with disabilities are given additional time to prepare a response to the test.

When carrying out the procedure for evaluating the results of training of disabled people and persons with disabilities, their own technical means can be used.

The procedure for evaluating the results of R & D training for disabled people and persons with disabilities provides for the provision of information in forms adapted to the limitations of their health and perception of information:

For people with visual impairments:	- in printed form with an enlarged font, – in the form of an electronic document.
For people with hearing impairments:	– in printed form, – in the form of an electronic document.
For persons with musculoskeletal disorders–	in printed form, please specify: – in the form of an electronic document.

When conducting the procedure for evaluating the learning outcomes of disabled people and persons with disabilities, the R & D program ensures that the following additional requirements are met, depending on the individual characteristics of students:

a) instructions on the procedure for conducting the assessment procedure are provided in an accessible form (orally, in writing);

b) an accessible form of providing tasks with assessment tools (in printed form, in printed form in an enlarged font, in the form of an electronic document, tasks are read out by the teacher);

c) an accessible form of providing answers to tasks (written on paper, a set of answers on a computer, orally).

If necessary, for students with disabilities and those with disabilities, the procedure for evaluating the results of R & D training can be carried out in several stages.

The procedure for evaluating the learning outcomes of disabled people and persons with disabilities is allowed using distance learning technologies.

Criteria for assessing the formation of competencies and crediting based on research results and providing reporting forms for interim control.

Evaluation	Criteria
credited	The presentation of materials is complete, consistent, and competent. Minor and stylistic errors are allowed. Individual research assignment completed. Applications are logically linked to the text part of the report. The report was submitted on time. The student demonstrates the consistency and depth of knowledge gained in performing research; stylistically competently, logically correctly presents answers to questions using professional terminology; gives answers to additional questions of the teacher on topics provided for in the research program; Materials are qualitatively and meaningfully designed.
The	presentation of materials is incomplete and unsystematic. There are errors and the design doesn't fully meet the requirements. There are no appendices or they are not related to the material presented. The report was not submitted in due time. The research program was not completed. The student demonstrates fragmentary knowledge within the framework of the research program; does not know the minimum necessary terminology; makes gross logical mistakes when answering questions from the teacher that he cannot correct on his own. The materials are designed with a low level of quality.