MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

EDUCATIONAL - SCIENTIFIC PROGRAM «VETERINARY MEDICINE»

HIGHER EDUCATION LEVEL The third (PhD) level
(name of higher education level)

HIGHER EDUCATION PhD in Veterinary Medicine
(title of higher education degree)

FIELD OF STUDY 21 Veterinary Medicine
(code and domain name)

PROGRAM SUBJECT AREA 211 Veterinary Medicine
(code and speci alty name)

"APPROVED"
by Academic Council of Sumy NAU
« _____ » _____ 2019
(Minutes No.)

Rector
Academician of NAAS of Ukraine _____
V.I. Ladyka

S u m y 2019-2020

LETTER OF AGREEMENT
Educational - Scientific Program in Subject Area
211 Veterinary Medicine
Higher Education Level **- Third (Educational - Scientific)**

The project team consists of:	
The Chairman of the project team**:**	
Doctor of Veterinary Sciences, Professor, the Department of Veterinary Sanitary Expertise, Microbiology, Hygiene, Safety and Quality of Food Products	_____ **A.V. Berezovskii**
Project team members:	
Doctor of Veterinary Sciences, Professor, Head of the Therapy, Pharmacology, Clinical Diagnostics and Chemistry Department	_____**L.H. Ulko**
Doctor of Veterinary Sciences, Professor of the Epizootology and Parasitology Department	_____**H.A. Fotina**
Doctor of Veterinary Sciences, Professor, Head of the Obstetrics and Surgery Department	_____**A.Y. Kraievskii**
Doctor of Veterinary Sciences, Associate Professor of the Department of Veterinary Sanitary Expertise, Microbiology, Hygiene, Safety and Quality of Food Products	_____**L.V. Nahorna**
PhD student of the Department of Veterinary Sanitary Expertise, Microbiology, Hygiene, Safety and Quality of Food Products	_____**I.H. Zon**

I. INTRODUCTION

The program is developed by the working group consisting of :

Berezovskii Andrii Volodymyrovych – the Chairman of the project team, Doctor of Veterinary Sciences, Professor, the Department of Veterinary Sanitary Expertise, Microbiology, Hygiene, Safety and Quality of Food Products;

Ulko Larysa Hryhorivna – Doctor of Veterinary Sciences, Professor, Head of the Therapy, Pharmacology, Clinical Diagnostics and Chemistry Department;

Fotina Hanna Anatoliivna – Doctor of Veterinary Sciences, Professor of the Epizootology and Parasitology Department;

Kraievskii Apollinarii Yosopovych – Doctor of Veterinary Sciences, Professor, Head of the Obstetrics and Surgery Department;

Nahorna Ludmyla Volodymyrivna – Doctor of Veterinary Sciences, Associate Professor of the Department of Veterinary Sanitary Expertise, Microbiology, Hygiene, Safety and Quality of Food Products**;**

Zon Illia Hryhorovych – PhD student of the Department of Veterinary Sanitary Expertise, Microbiology, Hygiene, Safety and Quality of Food Products

Profile of educational - scientific program

Program subject area 211 «Veterinary Medicine»

II. General information	
Full name of higher education institution	Sumy National Agrarian University
Level of higher education	Third (educational scientific) level
Educational qualification	PhD in Veterinary Medicine (Philosophy Doctor degree)
Field ıuf Study	21 Veterinary Medicine
Subject Area	211 Veterinary Medicine
The official name of the educational program	Educational and professional program «Veterinary Medicine»
Educational qualification	PhD in Veterinary Medicine
Professional Qualification	In case of mastering the educational program, it is possible to obtain a corresponding professional qualification of the ninth level of the NQF of Ukraine under a separate procedure.
Qualification in diploma	Stage of higher education – Doctor of Philosophy Program subject area – 211 «Veterinary Medicine» Educational program «Veterinary Medicine»
Type of diploma and scope of educational program	Single 57 ECTS credits , program length - 4 academic years
Limitation as for educational forms	No
Accreditation availability	Non-accredited
Type of diploma and scope of educational program	Doctor of Philosophy Diploma (PhD), the first scientific stage , 4 academic years, 57 ECTS credits
Cycle / level	QF for EHEA – third cecle; NQF of Ukraine – 9 level EQF-LLL - 8 level
Prerequisites	Availability of higher education of the second (master's) level, (educational qualification level of the specialist) in the field of study: 211 "Veterinary medicine", 212 "Veterinary hygiene, sanitation and expertise". Demand Requirements are determined by the "The rules of admission to PhD educational program"
Language of instruction	State Language (Ukrainian)
Length of the educational program	till 2023 (started in 2016).
The link for the educational – professional program	https://science.snau.edu. ua/aspirantura/
2 - The purpose of educational -scientific programs	
Training of highly qualified specialists, able to solve complex problems in the field of veterinary medicine during professional and / or research and innovation activity, to carry out scientific and	

pedagogical activity.	
3 - Characteristics of educational - scientific program	
Description of subject area	Scientific research, educational and professional activity in the field of veterinary medicine, specialty "Veterinary medicine".
Object of study	Methodology of scientific research work; national and world literature on the studied subject; regularity establishment and substantiation of the structure and development of the animal organism peculiarities according to norms and pathology; diagnosis and prevention of diseases and treatment of animals; the relationship between natural and anthropogenic objects and processes in livestock and veterinary medicine; educational and community activities; development of scientific and methodological guidelines, scientific and practical recommendations for effectiveness improvement of different directions of the specialty "Veterinary medicine".
Targets of educational - scientific program	Formation of professional, research and educational competences necessary for innovative professional, scientific and research activity and implementation of modern technologies in veterinary medicine.
The main focus of the educational – scientific program and specialization	Educational-scientific program is formed as the optimal combination of academic and professional requirements, which allows PhD students to formulate their ability to substantiate problems in the field of "Veterinary medicine", to plan and conduct research using modern research methodology, critically analyze research projects, to cooperate with other researchers including working in an interdisciplinary team, to transfer professional knowledge. **General:** study of consistent patterns and development of scientific and practical principles, methods and approaches, which include: protection animal's life and health from the risks caused by the penetration, implanting or spread of harmful organisms, diseases and organisms that are carriers of diseases; human and animal life and health protection from the risks originated from additives, contaminants, toxins or pathogens contained in food or fodder; person's life or health protection from the risks caused by animal-borne diseases or products of animal origin; possession of research methodology to determine the physiological form of different animal species; conduction of clinical and laboratory studies for the vital and post-mortem diagnosis of infectious and non-infectious animal diseases; monitoring, prediction and prevention of the emergence and spread of infectious and non-infectious animal diseases, including anthropozoanoses, protection the population against them; conduction of animal veterinary upkeeping using classical, modern and innovative techniques; planning of financial activity, supervision of veterinary records management, accounting, reporting. **Special:** development of conceptual, theoretical and methodological principles for: studying the morphology and structure of infectious and invasive pathogens; study of the etiology and pathogenesis of infectious, invasive and non-infectious animal diseases; study of epizootology of infectious diseases, patterns of infectious process development, development of measures for control, prevention and extirpation of infectious and invasive diseases; study of epizootic process modeling methods under the conditions of particularly dangerous transboundary animal diseases; development of methods and means of diagnostics, treatment and prevention of infectious, invasive and non-infectious animal diseases;

	study of the organization and economic effectiveness of anti-epizootic and therapeutic measures, development of theoretical and practical principles of management, marketing in veterinary medicine; development of informative methods for early diagnosis of infectious, invasive and non-infectiuos animal diseases; development of scientifically based methods and means of monitoring, prediction, situation assessment, modeling of epizootic situation and software development of epizootic well-being for the production of environmental friendly livestock products.
Theoretical content of subject area	In-depth and complex study of the basic and applied sciences of the specialty "Veterinary Medicine" in accordance with chosen specialist field.
Features of the program	***Educational program component.*** The program provides for 57 ECTS credits, 42 ECTS credits are for all compulsory subjects (Philosophy of Science, Research in Veterinary Medicine, Modern Information Technologies in Scientific Activity, Theory of Prifessional Communication, Methodology of Scientific Research Conduction Modelling and Planning of Scientific Experiment, Management of Scientific Projects, Registration of Intellectual Property Rights , Organization and Methods of Training Session Delivering , Methods and Organization of Thesis Preparation, Foreign Language of Professional Direction, Preparation Methods of Scientific Work in Foreign Language, Teaching Practice); and 15 credits provide for scycle of special (professional) subjects (at student's choice). ***Scientic program component.*** The scientific component of the educational and scientific program involves carrying out one's own scientific researches under the guidance of one or two scientific supervisors with appropriate registration of the obtained results in the form of the thesis work. This component of the program is not measured by ECTS credits, but is designed separately as an individual Phd student research plan. The peculiarity of the scientific component of the educational program of training of Doctors of Philosophy in the specialty 211 "Veterinary medicine" is that certain components of their own scientific research can be performed by PhD students during the study of professional training subjects.
Methods, techniques and technologies	Mastering the methodology of scientific research and technology of experiment, proper to solve scientific problems in the specialty "Veterinary medicine".
4. Employment and further education	
Employment	Graduates have ample opportunity for career development depending on their personal interests, including: scientific, teaching, expert, managerial, administrative activities in the field of veterinary medicine in the specialty "Veterinary hygiene, sanitation and expertise". The level of training allows to develop a professional career based on strategic thinking and in-depth knowledge in the field of veterinary medicine in accordance with the current amendments of the National Classification of Ukraine: Occupational classification (OC 003:2010) and International Standard Classification of Occupations 2008 (ISCO-08) graduate may occupy positions: teacher of higher educational institutions (2310.2), head of laboratory (research, production preparation) (1237.2), scientific associate consultant (2223. 1), junior

	research assosiate (2223. 1). director (head) of a small industrial enterprise (firm) (1312), director (chief) of an organization (research, design, project) (1210.1), director (head) of a professional educational institution (vocational school etc.) (1210. 1), director (head, other chief) of the enterprise (1210.1), director (rector, chief) of a higher educational institution (technical college , college, institute, academy, university, etc.) (1210. 1), director of advanced training courses (1210.1), director of scientific-research Institute (1210.1), director of the advanced training center (1229. 4), department supervisor (scientific-research, design, project, etc.) (1237.2), college department supervisor (1229.4), veterinary medicine hospital administrator (1237.1), doctor of veterinary medicine (2223. 2), chief (deputy) of the main bureau of the state oblast (city, district) consumer service (1229.3), general inspector of state control (1229.1), general state auditor (1229. 1), junior researcher assosiate (veterinary medicine) (2223.1) research office (veterinary medicine) (2223.1), lecturer of higher educational institution (2310. 2), head of laboratory (1229. 4), Associate Professor (2310.1), Professor (2310.1), Place of employment: Ministry of Economic Development, Trade and Agriculture, Main departments of the State Consumer Service of the oblast (city, district), higher education institutions of natural science, research institutes (stations, laboratories), regional and district departments of veterinary medicine, colleges.
Further training	Training for development and self-improvement in scientific and professional spheres of activity, as well as other related branches of scientific knowledge: training at the 10th (scientific) level of the NQF of Ukraine in the field of veterinary medicine; educational programs, research grants and scholarships (including overseas) that contain additional educational components. Various forms of lifelong learning (both in Ukraine and abroad) for further training and improvement of managerial, administrative, scientific, research, teaching and other activities.
5. Training and assessment	
Teaching and learning approaches	Teaching and learning approaches: - active learning (interactive teaching methods that provide a student-centered approach and development of systemic, creative and strategic thinking; joint learning in multidisciplinary groups; - learning by teaching (teaching practice); - education through research (including participation in the realization of budgetary and contractual research works, participation in research projects); - personalized learning: individual consultations with scientific supervisors, selective professional subjects.
Assessment	***Educational program component.*** The grading system of the obtained training results of in subjects of the educational and scientific program consists of current and final control. *Current control* of knowledge is carried out orally (questionnaire on the results of the learnt material). *Final control* of knowledge in the form of exam / credit is carried out in writing. Preparation and publication by the applicant of scient ific

	articles in the issues which are included in professional publications and / or publications included in the international scientific base have an impact on positive assessment within the subjects providing vocational training. The number of articles and their subject matter are agreed with the scientific advisor. ***Scientic program component.*** Scientific activity assessment of PhD students (applicants) is carried out on the basis of quantitative and qualitative indicators characterizing the preparation of scientific papers, participation and scientific conference tracks, seminars, preparation of individual parts of the thesis in accordance with the approved applicant's individual plan of scientific work, reviewing scientific works. Reports of PhD students (applicants) are carried out according to the results of the implementation of the individual plan, which cover and subsequently hear at the meetings of the departments passing results of research, with subsequent annual approval at the meeting of the department and the Academic Council of the Faculty of Veterinary Medicine with a recommendation to continue (or termination) thesis work.
Form of Phd student's (applicant's) progress control	***Educational program component.*** Summative control is conducted as: exam – based on the studying result educational program compulsory subjects of general scientific training cycle (philosophy of science, researh in veterinary medicine), cycle of research training (registration of intellectual property rights, organization and methodology of training sessions, organization of preparation of scientific publications, management of scientific projects), cycle of language training (foreign language of professional direction, methods of scientific papers preparation in foreign language), and examinations on the results of professional subject study (methods organization and preparation and writing of theis work / management of laboratory activity); credit – based on the studying result of all other disciplines provided by the syllabus. ***Scientic program component.*** The scientific component of the educational scientific program (ESP) involves the subjects of general training cycles, special (professional), research training, language special (vocational) and practical training (compulsory and selective) and teaching practice, together with the educational part of the program and scientific research with the participation of the supervisor, preparation and public defense of the thesis work in the specialized scientific council ensures obtaining the educational level "Doctor of Philosophy" in specialty 211 "Veterinary Medicine"
	6. Program competencies
Integral competence	Ability to have a methodology for scientific research in the field of veterinary medicine in the subject area 211 "Veterinary medicine", to identify and solve scientific and practical problems with the use and deep rethinking of existing knowledge and creation of new holistic

	one, to hypothesize and generate new educational and professional activities, to diagnose, treat and prevent pathologies of infectious and non-infectious etiology.
General Competencies (GC)	1. Ability to learn, master modern knowledge, self-improve and form a systematic scientific view of the world. 2. Ability to critical analysis and evaluation of modern scientific achievements, synthesis of holistic knowledge, comple x problem solving. 3. Ability to abstract creative thinking, finding, receiving, systematization of information from various sources with the use of modern information technologies in scientific activity. 4. Ability to plan and carry out comprehensive research at the modern level using the latest information and communication technologies and adhering to the parameters of safe activity based on a holistic systematic scientific view of the world with knowledge in the field of history and philosophy of science. 5. Ability to generate new ideas and make informed decisions to achieve the goals. 6. Ability to develop and manage research projects, to initiate study organizations in the field of research and innovation, to evaluate the needs of research funding, to carry out the registration of intellectual property rights. 7. Ability to participate in the work of national and international research teams to solve scientific and scientific-educational tasks. 8. Ability to take initiative and responsibility, to motivate people and move toward the common goal. 9. Ability to perform activities retainig the natural and cultural heritage, to work effectively in a team, to communicate with specialists and experts of different levels in other fields of knowledge. 10. Ability to adhere to the rules of scientific ethics, copyright and related intellectual property rights. 11. Ability to prepare scientifict texts, to present, discuss the results of their scientific work in state and foreign languages sufficient for full understanding, to demonstrate a culture of scientific verbal and written language. 12. Ability to plan and conduct training sessions using a competency based approach (learning outcomes based approach).
Professional Competencies of the specialty (PC)	1. Ability to determine the complex of necessary clinical, instrumental and laboratory methods and techniques for the study of health conditions in different species and classes of animals according to the norms and pathologies in age and comparative aspects, different biological substrates etc., with reliable results in accordance with the goal. 2. Ability to understand the purpose and use of the necessary professional equipment, tools, chemical agents, etc., required for certain animal health studies, various biological substrates in compliance with safety rules. 3. Ability to establish the change mechanisms of body homeostasis, to differentiate etiological factors, to establish their mutual influence on pathogenesis of animal diseases and to predict possible changes of homeostasis in the body.

	4. Ability to formulate a scientific problem, to develop working hypotheses, to determine relevance, purpose, tasks that need to be accomplished pursuing the goal, to evaluate the resources needed and time to implement, which implies a deep rethinking of existing and creation of new holistic knowledge and / or professional internship in the specialty "Veterinary medicine". 5. Ability to analyze, systematize and summarize the results of scientific research, to compare them with the results of other domestic and foreign scientists in the chosen area of the specialty "Veterinary Medicine", to make informed and reliable conclusions, to create databases and use Internet resources. 6. Ability to find out possible ways of obtained results usage for the further development of science, improvment the quality of the educational process and / or economic efficiency of production. 7. Ability to understand complex problems in the field of veterinary medicine, to make scientific generalizations about current issues of the of veterinary well-being form at the current stage of the agro-industrial complex development from the standpoint of environmental protection and compliance with industry requirements of life safety. 8. Ability to carry out educational and pedagogical activities within the field 211 "Veterinary medicine", using traditional and innovative methods, techniques, tools , etc. 9. Ability to speak professional foreign language, to get, process and reproduce information in a foreign language within general and professional topics. 10. Ability to conduct scientific debate, to identify and solve scientific problems and problems within the chosen specialty 211 "Veterinary Medicine" in compliance with the norms of scientific ethics and academic honesty. 11. Ability to perform professional analysis of various information sources, author's methods, specific educational, scientific and professional materials in the specialty 211 "Veterinary medicine". 12. Ability to put into action scientific-based results of thesis research in the specialty 211 "Veterinary medicine". 13. Ability to form the structure of scientific work, including thesis, to carry out its rubrication and content filling. 14. The ability to show the results of scientific research in domestic and foreign scientific publications in veterinary medicine. 15. Ability to participate in scientific discussions, critical dialogues at the national and international levels, to defend own scientific position.
Program training outcomes	
1. To have a good command of the state language, to be able to present the results of scientific research in a foreign language. 2. To have up-to-date methodological tools for conducting research in the field of "Veterinary medicine" in the specialty "Veterinary medicine", guided by the principles of academic integrity and scientific ethics. 3. To generate your own ideas, make well-reasoned decisions, understand and determine the purpose of your own scientific research. 4. To possess statistical processing methods of the obtained results of scientific resea rches with use of modern information technologies.	

5. To know the principles of organization, forms of educational process realization under modern conditions, its scientific, educational, methodical and normative providing, working out scientific and informational sources during preparation for lectures, application of active teaching methods. 6. Understand the peculiarities of structure and be able to prepare scientific works (monographs, scientific articles, etc.), based on the principles of academic integrity. 7. To display scientific researches in scientific articles published both in professional domestic issues and in issues that are included in international scientometric bases. 8. To be able to analyze, evaluate and synthesize new scientific schedules and ideas as for veterinary medicine. 9.To be able to make well-reasoned decisions, to develop and self-improve, to be responsible for the reliability and novelty of the scientific research and decision-making, to be able to motivate colleagues to move towards a common goal. 10. To formulate a scientific problem in view of the value orientations of modern society and the state of its scientific development, working out hypotheses of the investigated problem, which should increase insight of scientific research in the specialty "Veterinary medicine". 11. To analyze modern scientific works, identifying debatable and poorly known points of veterinary medicine. 12. To conduct professional interpretation of the obtained research results, using modern software. 13. To set out the results of the research at national and international scientific conferences, seminars including the foreign language conferences in scientific, innovative and teaching activity. 14. To be able to work in a team, including interdisciplinary, to have skills of interpersonal interaction. 15. To use modern information and communication technologies during communication, information exchange, collection, analysis, processing, interpretation of different sources. 16. To have a thorough knowledge of the subject area and understanding of the profession, to know the fundamental works of leading national and foreign veterinary scientists in the chosen field of research. 17. To initiate, organize, and conduct overall veterinary research leading to new knowledge. 18. To formulate a scientific problem in view of the modern society value orientations and the state of its scientific development and working hypotheses of the investigated problem, which should increase insight of scientific research in veterinary medicine. 19. To understand the ways in which the results of veterinary medicine research can be implemented into production, training and science. 20. To organize practical and laboratory research on veterinary medicine in accordance with the requirements of safety and health protection 21. To present research results in the form of the thesis, to defend the results of a thesis research.

7. Certification forms of applicants for higher education	
Certification forms of applicants for higher education	Certification is carried out in the form of a public presentation of the research results in the form of the PhD thesis research, providing that the PhD student completes his individual curriculum.
Qualifying paper requirements	The thesis work for PhD degree is the result of a PhD student's individual scientific work who has the status of an intellectual product on the rights of a manuscript and proposes the solution of an actual scientific task in the specialty 211 "Veterinary medicine". The volume and structure of the thesis work, the procedure for checking for plagiarism, providing comments from opponents and public defence are determined by the current requirements of the Ministry of Education and Science of Ukraine (the requirements of current legislation).
Requirements for public defense	The thesis work defence is public at a meeting of a specialized academic council. An obligatory prerequisite for admission to the thesis

	defence is to approve the results of the research and the main conclusions at scientific conferences and to publish them in professional scientific issues, including to scientometric bases, in accordance with current requirements.
8. Resources support for program implementation	
Academic staff	Scientific and teaching staff satisfiess the requirements of the current legislation of Ukraine. Teachers involved in the implementation of the educational program are employees of Sumy NAU, providing upgrade qualifications at least once every five years. 100% of scientific-pedagogical staff involved in the teaching of disciplines have scient ific degrees and academic ranks.
Technical support and educational facilities	Provision witheducational and research laboratories, including inter-faculties: PCR diagnostics within the Erasmus + KA2 project; «Electron microscopy», «Ecology», «Innovative Technologies and Safety and Quality of Animal Products», «Veterinary pharmacy», «Laboratory of Chemistry».
Information and training support	The official website https: // snau.edu.ua contains information about educational programs, educational, scientific and educational activities, structural units, admission rules, contacts. PhD students (doctoral candidates) have the opportunity to use the Fund of Scientific Libraries of Sumy higher educational institutions, National Library of Ukraine named after V.I. Vernadsky, Internet resources and author's development of scientific and pedagogical staff of SNAU. SNAU has access to the Web of Science scientometric databases.
9. Academic mobility	
National credit mobility	National individual academic mobility is implemented within teaties on establishing scientific-educational relations to meet the needs of education and science development, in particular: National Scientific Center "Institute of Experimental and Clinical Veterinary Medicine" (Kharkiv), Institute of Veterinary Medicine of the National Academy of Sciences of Ukraine (Kyiv), Dnipro State Agrarian and Economic University (Dnipro), Bilotserkiv National Agrarian University (Bila Tserkva).
International credit mobility	Based of bilateral treaties between Sumy NAU and higher education institutions of foreign partner countries, in particular, treaty on cooperation with the University of Applied Sciences Weihenstefan (Germany), the University of Natural Sciences in Wroclaw (Poland), the University of Agricultural Sciences and Veterinary Medicine. Romania), University of Teramo (Italy), University of Natural Sciences in Warsaw (Poland), University of Natural Sciences in Lublin (Poland).

2. List of components of educational and professional program and their logical consistency

2.1 List of components

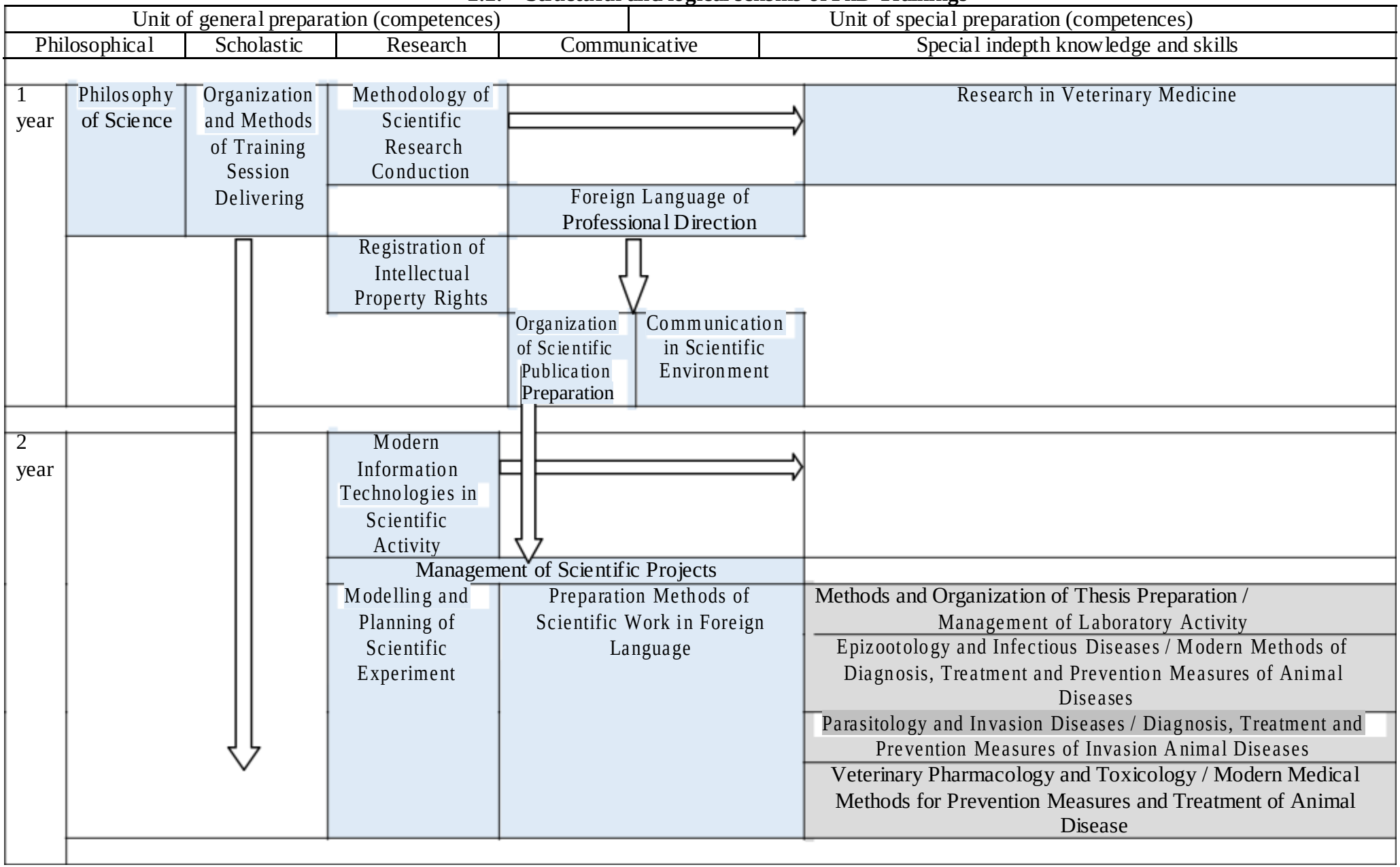
№	Components of the educational program (disciplines, course projects (works), practice, qualification work)	Amount of credits	Semester								Assessment
			1	2	3	4	5	6	7	8	
1	2	3	4	5	6	7	8	9	10	11	12
	1. **Compulsory Components**										
CC.1	Philosophy of Science	3,0	x								exam
CC.2	Modern Information Technologies in Scientific Activity	3,0			x						credit
CC.3	Communication in Scientific Environment	3,0		x							credit
CC.4	Methodology of Scientific Research Conduction	3,0		x							credit
CC.5	Research in Veterinary Medicine	3,0	x								exam
CC.6	Modelling and Planning of Scientific Experiment	3,0			x						credit
CC.7	Registration of Intellectual Property Rights	3,0		x							exam
CC.8	Organization and Methods of Training Session Delivering	3,0		x							exam
OC.9	Organization of Scientific Publication Preparation	3,0				x					exam
CC.10	Management of Scientific Projects	3,0	x								exam
CC.11	Foreign Language of Professional Direction	4,0		x							exam
CC.12	Preparation Methods of Scientific Work in Foreign Language	4,0				x					exam
CC.13	Teaching Practice	4,0						x			credit
Total		**42,0**									
2. Selective Components											
SC.1	Methods and Organization of Thesis Preparation / Management of Laboratory Activity	3,0			x						exam
SC.2.	Epizootology and Infectious Diseases / Modern Methods of Diagnosis, Treatment and Prevention Measures of Animal Diseases	4,0				x					credit
SC.3	Parasitology and Invasion Diseases / Diagnosis, Treatment and Prevention Measures of Invasion Animal Diseases	4,0				x					credit
SC.4	Veterinary Pharmacology and Toxicology / Modern Medical Methods for Prevention Measures and Treatment of Animal Disease	4,0				x					credit
Total at PhD student's choice		**15,0**									

Total according to selective components	**15,0**	
Total according to cycles of standard and variative part	**57,0**	

2.2. Structural and logical scheme of the educational and scientific program

Higher education applicants are eligible to choose academic subjects within the relevant educational and scientific program and work curriculum not less than 25% of the total ECTS credits provided for a given higher education level

2.2. Structural and logical scheme of PhD Trainings



3 year		Teaching Practice	

3. List of legislative documents the standard of higher education is based on

1. Law of Ukraine "On Higher Education" dated 01.07.2014 No 1556-VII. - http://zakon4.rada.gov.ua/laws/show/1556-18.
2. Law of Ukraine "On Higher Education" dated 05.09.2017 No 2145-VVVIII - http://search. ligazakon.ua/l_doc2.nsf/link1/T172145.html.
3. Order of the Ministry of Education and Science of Ukraine No 1151 of November 6, 2015 "On the peculiarities of introducing a list of branches of knowledge and specialties by which higher education applicants are trained."
4. Order of the Ministry of Education and Science of Ukraine No 1378H of October 13, 2017 "On Approval of Some Regulations on Enrollment to Higher Education Institutions."
5. National Classification of Ukraine: «Classification of economic activity types» OC 009: 2010 - http://www.ukrstat.gov.ua.
6. National Classification of Ukraine: «Occupational classification» OC 003: 2010 OC 003:2010 - http://www.dk003.com.
7. Cabinet of Ministers Resolution No. 266, of April 29, 2015 “On Approving the List of Subject Areas and Specialties for the PhD Students” - http://zakon4.rada.gov.ua/laws/show/266-2015-п.
8. Decree of the Cabinet of Ministers of December 30, 2015 No. 1187 “On Approving the Licensing for Educational Activities of Educational Institutions”.
9. http://zakon4.rada.gov.ua/laws/show/1187-2015-п/page.
10. Cabinet of Ministers Resolution No. 1341 of November 23, 2011 “On Approval of the National Qualifications Framework” - http://zakon4.rada.gov.ua/laws/show/1341-2011-п.
11. Cabinet of Ministers Resolution No. 266 of April 26, 2015 "The list of branches of knowledge and specialties by which higher education applicants are trained. "

Informative Sources

1. National Glossary 2014- http://ihed.org.ua/images/biblioteka/glossariy_Visha_osvita_2014_tempus-office .pdf.
2. NQF - http://zakon4.rada.gov. ua/laws/show/1341-2011-п.
3. ESG - http://ihed. org.ua/images/pdf/standards-and-guidelines_for_qa_in_the_ehea_2015.pdf.
4. Development of educational programs: guidelines - http://ihed.org.ua/images/biblioteka/rozroblennya_osv_program_2014_tempus-office.pdf.
5. Development of the Higher Education Quality Assurance System in Ukraine: Information and Analytical Review - http://ihed.org.ua/images/biblioteka/Rozvitok_sisitemi_zabesp_yakosti_VO_UA_2015.pdf.
6. ISCED 2011 - http://www.uis.unesco.org/education/documents/isced-2011-en.pdf.
7. ISCED 2013 - http://www.uis.unesco.org/Education/Documents/isced-fields-of-education-training-2013.pdf.
8. TUNING (for studying special (professional) competences and examples of standards – http://core-project.eu/documents/Tuning%20G%20Formulating%20Degree%20PR4.pdf.
9. TUNING (for studying special (professional) competences and examples of standards - http://www.unideusto.org/tuningeu/.
10. National Classifier of Ukraine : «Ocupational Classification» Oc 003: 2010 // Sotsinform Publishing House. - Kyiv: 2010.

:, National Academy of Pedagogical Sciences of Ukraine, Institute of Higher Education of the National Academy of Pedagogical Sciences of Ukraine , National Erasmus + Office in Ukraine - http://ihed.org.ua/images/biblioteka/Rozvitok_sisitemy_zabesp_As2015.pdf

Table 1.

Compliance Matrix of the required by Educational- Scientific Program (ESP) competences with the NQF descriptors

Classification of competences according to National Qualifications Framework (NQF)	Knowledge	Skills	Communication	Autonomy and responsibility
General competences				
GC 1. Ability to learn, master modern knowledge, self-improve and form a systematic scientific view of the world.	•	•		
GC 2. Ability to critical analysis and evaluation of modern scientific achievements, synthesis of holistic knowledge, complex problem solving.	•	•		
GC 3. Ability to abstract creative thinking, identification, receiving, systemization, synthesization and evaluation of information from various sources with the use of modern information technologies in scientific activity.	•		•	
GC 4. Ability to plan and carry out comprehensive research at the modern level using the latest information and communication technologies and adhering to the parameters of safe activity based on a holistic systematic scientific view of the world with knowledge in the field of history and philosophy of science.	•	•		
GC 5. Ability to generate new ideas and make informed decisions to achieve the goals.	•			•
GC 6. Ability to develop and manage research projects, to initiate study organizations in the field of research and innovation, to evaluate the needs of research funding, to carry out the registration of intellectual property rights.	•		•	•
GC 7 Ability to participate in the work of national and international research teams to solve scientific and scientific-educational tasks.	•		•	
GC Ability to take initiative and responsibility, to motivate people and move toward the common goal.			•	•

GC 9. Ability to perform activities retainig the natural and cultural heritage, to work effectively in a team, to communicate with specialists and experts of different levels in other fields of knowledge.		•	•	
GC 10. Ability to adhere to the rules of scientific ethics, copyright and related intellectual property rights.	•			•
GC 11. Ability to prepare scientifict texts, to present, discuss the results of their scientific work in state and foreign languages sufficient for full understanding, to demonstrate a culture of scientific verbal and written language.	•	•	•	
GC 12. Ability to plan and conduct training sessions using a competency based approach (learning outcomes based approach).	•	•	•	
Special (professional, subject) competences				
SC 1. Ability to determine the complex of necessary clinical, instrumental and laboratory methods and techniques for the study of health condition in different species and classes of animals according to the norm and pathologies in age and comparative aspects, different substrates in compliance with the goal.	•	•		
SC 2. Ability to understand the purpose and use of the necessary professional equipment, tools, chemical agents, etc., required for certain animal health studies, various biological substrates in compliance with safety rules.	•	•		
SC 3. Ability to establish the change mechanisms of body homeostas is, to differentiate etiological factors, to establish their mutual influence on pathogenesis of animal diseases and to predict possible changes of homeostasis in the body.	•			•
SC 4. Ability to formulate a scientific problem, to develop working hypotheses, to determine relevance, purpose, tasks that need to be accomplished pursuing the goal, to evaluate the resources needed and time to implement, which implies a deep rethinking of existing and creation of new holistic knowledge and / or professional internship in the specialty "Veterinary medicine".	•			•
SC 5. Ability to analyze, systematize and summarize the results of scientific research, to compare them with the results of other domestic and foreign scientists in the chosen area of the specialty "Veterinary Medicine", to make informed and reliable conclusions, to create databases and use Internet resources.	•			•
SC 6. Ability to find out possible ways of obtained results usage for the further development of science, improvment the quality of the educational process and / or economic efficiency of production.			•	•

SC 7. Ability to understand complex problems in the field of veterinary medicine, to make scientific generalizations about current issues of the of veterinary well-being form at the current stage of the agro-industrial complex development from the standpoint of environmental protection and compliance with industry requirements of life safety.	•			•
SC 8. Ability to carry out educational and pedagogical activities within the field 211 "Veterinary medicine", using traditional and innovative methods, techniques, tools , etc.	•	•	•	
SC 9. Ability to speak professional foreign language, to get, process and reproduce information in a foreign language within general and professional topics.	•	•		•
SC 10. Ability to conduct scientific debate, to identify and solve scientific problems and problems within the chosen specialty 211 "Veterinary Medicine" in compliance with the norms of scientific ethics and academic honesty.	•		•	•
SC 11. Ability to perform professional analysis of various information sources, author's methods, specific educational, scientific and professional materials in the specialty 211 "Veterinary medicine".	•			•
SC 12. Ability to put into action scientific-based results of thesis research in the specialty 211 "Veterinary medicine".		•	•	•
SC 13. Ability to form the structure of scientific work, including thesis, to carry out its rubrication and content filling.	•			•
SC 14. The ability to show the results of scientific research in domestic and fore ign scientific publications in veterinary medicine.	•			•
SC 15. Ability to participate in scientific discussions, critical dialogues at the national and international levels, to defend own scientific position.	•		•	•

Table 2.

Compliance Matrix of the required by Educational- Scientific Program outcome and competences

Program educational outcome	Integral competences	Competences																									
		General competences												Special (professional) competences													
	IC 1	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PEO 1	+	+										+									+	+	+				+	+
PEO 2	+	+			+					+				+	+				+									
PEO 3	+		+	+		+									+	+	+	+				+		+				
PEO 4	+				+		+		+		+						+											
PEO 5	+	+		+					+				+					+										
PEO 6	+			+							+	+									+	+						
PEO 7	+	+									+	+				+			+						+			
PEO 8	+		+	+		+					+								+			+		+				
PEO 9	+	+	+	+		+			+										+				+				+	+
PEO 10	+		+	+		+					+							+			+	+		+				
PEO 11	+		+	+								+		+	+			+		+								
PEO 12	+			+	+						+	+														+	+	+
PEO 13	+		+	+			+				+	+						+				+		+				
PEO 14	+						+	+	+	+								+		+						+		
PEO 15	+	+		+	+																+	+						+
PEO 16	+	+	+	+	+													+								+	+	
PEO 17	+				+					+											+	+	+					+
PEO 18	+		+	+		+					+											+	+					+
PEO 19	+		+	+		+		+					+					+				+		+				
PEO 20	+				+					+			+	+	+	+		+		+								
PEO 21	+		+	+		+	+				+	+					+	+	+				+		+		+	+

Table 3.

Assurance matrix of program educational outcome (ESP) with adequate components

	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6	PEO 7	PEO 8	PEO 9	PEO 10	PEO 11	PEO 12	PEO 13	PEO 14	PEO 15	PEO 16	PEO 17	PEO 18	PEO 19	PEO 20	PEO 21
CC 1								+	+	+	+			+				+			
CC 2				+			+					+			+						
CC 3	+				+			+					+	+	+						
CC 4		+	+	+	+							+		+		+	+			+	+
CC 5	+	+		+						+		+		+			+				+
CC 6		+	+						+	+						+	+	+			
CC 7	+				+									+	+					+	
CC 8	+			+		+	+				+										
CC 9	+								+					+	+						+
CC 10														+	+				+		
CC 11	+						+				+		+								
CC 12	+			+		+	+				+										
CC 13					+									+	+					+	
SC14	+		+							+		+						+			+
SC15		+						+	+	+	+	+				+	+	+	+		
CC 16		+							+	+				+	+	+				+	
CC 17		+						+	+	+	+	+				+	+	+	+		