

Документ подписан простой электронной подписью
Информация о владельце:
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Должность: Ректор
Дата подписания: 22.05.2024 16:42:41
Уникальный программный ключ:
ca953a0120d891083f939673078ef1a989dae18a

**Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University**

Agrarian and Technological Institute

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Biometrics in veterinary medicine

course title

Recommended by the Didactic Council for the Education Field of:

36.05.01 Veterinary

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Veterinary

higher education programme profile/specialisation title

1. COURSE GOAL(s)

The goal of the course "**Biometrics in veterinary medicine**" is to master the methodology and technique of conducting an experiment in animal husbandry and veterinary medicine, mastering the mathematical basis for planning an experiment and processing digital experimental material using computer technology. This is necessary for the veterinarian to correctly apply the methods and correctly interpret the results obtained, scientifically substantiate his actions and decisions taken for the appointment and treatment of animals.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course "**Biometrics in veterinary medicine**" is aimed at creating the following competencies (parts of competencies) for students:

Table 2.1. List of competences that students acquire through the course study

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-12	The ability to search for the right sources of information and data, to perceive, analyze, remember and transmit information using digital tools, as well as using algorithms when working with data obtained from various sources to effectively use the information to solve problems; to assess information, its reliability, to build logical conclusions on the basis of incoming information and data.	GC-12.2 Evaluates information, its reliability, builds logical conclusions on the basis of incoming information and data.
GPC-5	Is able to draw up special documentation, analyze the results of professional activity and submit reporting documents using specialized databases	GPC-5.2 Knows professional terminology and skills of completing analytical and reporting documents of professional orientation GPC-5.3 Able to use specialized software to analyze the results of professional activities and compiling reporting documentation.
GPC-7	Is able to understand the principles of modern information technologies and use them to solve problems of professional activity	GPC-7.2 Uses modern special software and specialized databases to solve professional tasks and perform job duties

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course refers to the core/variable/elective* component of (B1) block of the higher educational programme curriculum.

* - Underline whatever applicable.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course study.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
GC-12	The ability to search for the right sources of information and data, to perceive, analyze, remember and transmit information using digital tools, as well as using algorithms when working with data obtained from various sources to effectively use the information to solve problems; to assess information, its reliability, to build logical conclusions on the basis of incoming information and data.	Computer science	Study practice Preparation for and passing the state exam
GPC-5	Is able to draw up special documentation, analyze the results of professional activity and submit reporting documents using specialized databases	Latin language Organization of veterinary affairs	Clinical internship Industrial practice Academic research practice with the preparation of a scientific qualification project Preparation for and passing the state exam
GPC-7	Is able to understand the principles of modern information technologies and use them to solve problems of professional activity	Organization of veterinary affairs	Study practice Clinical internship Industrial practice Academic research practice with the preparation of a

			scientific qualification project Preparation for and passing the state exam
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4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course «**Biometrics in veterinary medicine**» is 3 credits.

*Table 4.1. Types of academic activities during the periods of higher education programme mastering (full-time training)**

Type of academic activities		Total academic hours	Semesters/training modules				
			9	-	-	-	
Contact academic hours		34	34	-	-	-	
including							
Lectures		-	-	-	-	-	
Lab work		34	34	-	-	-	
Seminars (workshops/tutorials)		-	-	-	-	-	
Self-study		64	64	-	-	-	
Evaluation and assessment (exam/pass/fail grading)		10	10	-	-	-	
Course workload		academic hours	108	108	-	-	-
		credits	3	3	-	-	-

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Module 1. Biological experiment and mathematical method	Topic 1.1. Modern statistical systems: domestic and foreign.	Lab work
Module 2. Descriptive statistics	Topic 2.1. Calculation of the main characteristics of sample populations.	Lab work
	Topic 2.2. Confidence probability.	Lab work
	Topic 2.3. Confidence limits of the general average.	Lab work

	Topic 2.4. Student's criterion.	Lab work
	Topic 2.5. Estimation of the difference between sample averages, between sample shares.	Lab work
Module 3. Mathematical analysis of experimental data	Topic 3.1. Correlation analysis.	Lab work
	Topic 3.2. Regression analysis.	Lab work
	Topic 3.3. Calculation of the data of factorial experiments by the method of analysis of variance.	Lab work
Module 4. Experiment organization methods	Topic 4.1. Experiment planning and methodology	Lab work

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Laboratory	An auditorium for laboratory work, individual consultations, routine monitoring and interim certification, equipped with a set of specialized furniture and equipment.	-
Self-studies	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to an electronic information and educational environment.	-

7. RESOURCES RECOMMENDED FOR COURSE STUDIES

Main readings:

1. Lebedko E.Y., Khokhlov A.M., Baranovsky D.I., Getmanets O.M. Biometrics in MS Excel: tutorial 2018.-172s <https://e.lanbook.com/book/126951>

Additional Readings:

1. Nikitin I.N. Veterinary entrepreneurship : textbook / I.N. Nikitin. - 4-th

- edition, revised. and additional - St. Petersburg : Lan', 2018. - 372 c. - ISBN 978-5-8114-3160-1. - Text : electronic // electronic library system "Lan". : [website]. - URL: <https://e.lanbook.com/book/108461>
2. Shalyapina I.P. Strategic planning of the agroindustrial complex enterprise activity : textbook / I.P. Shalyapina, O.Y. Antsiferova, E.A. Miagkova. - Saint Petersburg : Lan', 2017. - 140 c. - ISBN 978-5-8114-2390-3. - Text : electronic // Electronic library system "Lan". : [website]. - URL: <https://e.lanbook.com/book/91874>
 3. Nikitin I.N. National and international veterinary legislation : textbook / I.N. Nikitin, A.I. Nikitin. - Saint Petersburg : Lan', 2017. - 376 c. - ISBN 978-5-8114-2316-3. - Text : electronic // electronic-library system "Lan". : [website]. - URL: <https://e.lanbook.com/book/90062>
 4. Professional ethics and deontology of veterinary medicine : textbook / A.A. Stekolnikov, F.I. Vasilevich, A.I. Yatusevich [et al] ; edited by A.A. Stekolnikov. - Saint Petersburg : Lan', 2015. - 448 c. - ISBN 978-5-8114-1906-7. - Text : electronic // Electronic library system "Lan". : [website]. - URL: <https://e.lanbook.com/book/64340>
 5. Nikitin I.N. Organization and economics of veterinary science: a textbook / I.N. Nikitin. - 6-th edition, revised and updated - St. Petersburg: Lan', 2014. - 368 c. - ISBN 978-5-8114-1609-7. - Text : electronic // Electronic library system "Lan". : [website]. - URL: <https://e.lanbook.com/book/44760>

Internet sources

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System (RUDN ELS)
<http://lib.rudn.ru/MegaPro/Web>
- EL "University Library Online" <http://www.biblioclub.ru>
- EL "Yurayt" <http://www.biblio-online.ru>
- EL "Student Consultant" www.studentlibrary.ru
- EL "Lan" <http://e.lanbook.com/>
- EL "Trinity Bridge"

2. Databases and search engines:

- electronic foundation of legal and normative-technical documentation
<http://docs.cntd.ru/>
- Yandex search engine [https:// www .yandex.ru/](https://www.yandex.ru/)
- Google search engine <https://www.google.ru/>
- Scopus abstract database <http://www.elsevierscience.ru/products/scopus/>

*Training toolkit for self- studies to master the course *:*

1. The set of lectures on the course "**Biometrics in veterinary medicine**".
2. Laboratory workshop on the course "**Biometrics in veterinary medicine**".

* - The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL AS COURSE RESULTS

The assessment toolkit and the grading system* to evaluate the level of competences (competences in part) formation as the course results are specified in the Appendix to the course syllabus.

* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

DEVELOPER:

Associate Professor of the Department of Veterinary
Medicine

Position, Basic curriculum

Signature

Nikishov A. A.

Full name.

HEAD OF EDUCATIONAL DEPARTMENT:

Department of Veterinary Medicine

Name Basic Curriculum

Signature

Vatnikov Yu.A.

Full name.

HEAD OF

HIGHER EDUCATION PROGRAMME:

Director of the Department of Veterinary Medicine

Position, Basic curriculum

Signature

Vatnikov Yu.A.

Full name