

Документ подписан простой электронной подписью
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**Federal State Autonomous Educational Institution of Higher Education
Peoples' Friendship University of Russia named after Patrice Lumumba
RUDN University**

Agrarian and Technological Institute

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

COURSE SYLLABUS

Physiology and Ethology of Animals

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 «**Physiology and ethology of animals**» is the formation of fundamental and professional knowledge about the physiological processes and functions in the body of mammals and birds, about their qualitative originality in the body of productive farm animals, domestic, laboratory and exotic animals, which are necessary for a veterinarian to scientifically substantiate activities related to the creation of optimal conditions for keeping, feeding and exploiting animals, preventing diseases, assessing health, the nature and degree of disorders in the activity of organs and the body, determining the ways and means of influencing the body in order to correct the activity of organs.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) «**Physiology and ethology of animals**» intends to train and guide students to achieve the development of following competences (competences in part):

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

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|--|---|
| GPC-1 | Ability to determine the biological status and normative clinical indicators of organs and systems of the animal organism. | GPC-1.1. Knows the structure and functions of the main body systems of animals taking into account species-specific features; |

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.

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* | Subsequent courses/modules* |
|------------------------|--|----------------------------------|---|
| GPC-1 | Ability to determine the biological status and normative clinical indicators of organs and systems of the animal organism. | Anatomy of Animals | Educational Practice Clinical Industrial Practice Clinical Internship Industrial Research Practice |

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course is «Physiology and ethology of animals» credits (288 academic hours).

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 | | | | |
|--|--|-----------------------|----------------------------|------------|------------|---|---|
| | | | 3 | 4 | - | - | |
| Contact academic hours | | 170 | 85 | 85 | - | - | |
| including: | | | | | | | |
| Lectures (LC) | | 68 | 34 | 34 | - | - | |
| Lab work (LW) | | 102 | 51 | 51 | - | - | |
| Seminars (workshops/tutorials) (S) | | - | - | - | - | - | |
| Self-studies | | 73 | 68 | 5 | - | - | |
| Evaluation and assessment (exam/ passing/failing grade) | | 45 | 27 | 18 | - | - | |
| Course workload | | academic hours | 288 | 180 | 108 | - | - |
| | | credits | 8 | 5 | 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. Excitable tissues. | | Topic 1.1 Introduction to Physiology. | Lectures, Lab work |
| | | Topic 1.2 Physiology of excitable tissues. | Lectures, Lab work |
| | | Topic 1.3 Physiology of nerve fibers and muscles. | Lectures, Lab work |
| Module 2. Nervous System. | | Topic 2.1 Physiology of the Central Nervous System. | Lectures, Lab work |
| | | Topic 2.2 Physiology of the spinal cord. | Lectures, Lab work |
| | | Topic 2.3 Brain Physiology. | Lectures, Lab work |
| | | Topic 2.4 Physiology of Higher Nervous Activity. | Lectures, Lab work |
| | | Topic 2.5 Autonomic nervous system. | Lectures, Lab work |
| Module 3. The blood system. | | Topic 3.1 Physiology of blood: functions, properties. | Lectures, Lab work |
| | | Topic 3.2 Corpuscular elements of blood. | Lectures, Lab work |
| | | Topic 3.3 Leukocyte formula. | Lectures, Lab work |
| | | Topic 3.4 Blood physiology: hemoglobin, plasma, lymph. | Lectures, Lab work |
| | | Topic 3.5 Blood physiology: hemostasis. | Lectures, Lab work |
| | | Topic 3.6 Blood groups, blood transfusion. | Lectures, Lab work |
| | | Topic 3.7 Physiology of the immune system. | Lectures, Lab work |
| Module 4. Endocrine glands. | | Topic 4.1 Physiology of the endocrine glands. | Lectures, Lab work |
| Module 5. Physiological adaptation of animals. | | Topic 5.1 Physiology of animal adaptation. | Lectures, Lab work |

| | | |
|--------------------------------------|---|--------------------|
| Module 6. Physiology of lactation. | Topic 6.1 Physiology of lactation of animals. | Lectures, Lab work |
| Module 7. The cardiovascular system. | Topic 7.1 Physiology of the heart: functions and properties of the heart muscle. | Lectures, Lab work |
| | Topic 7.2 Physiology of the heart: conduction system, biphasic rhythm, cardiac impulse, tones. | Lectures, Lab work |
| | Topic 7.3 Physiology of blood circulation: fundamentals of hemodynamics. | Lectures, Lab work |
| | Topic 7.4 Physiology of blood circulation: pulse, blood pressure, electrocardiography. | Lectures, Lab work |
| Module 8. Digestive system. | Topic 8.1 Physiology of digestion in the oral cavity. | Lectures, Lab work |
| | Topic 8.2 Physiology of digestion in the stomach. | Lectures, Lab work |
| | Topic 8.3 Physiology of digestion in the intestine. | Lectures, Lab work |
| | Topic 8.4 Peculiarities of digestion in ruminants. | Lectures, Lab work |
| Module 9. Respiratory system. | Topic 9.1 Respiratory physiology: inhalation-exhalation mechanism, vital capacity of the lungs. | Lectures, Lab work |
| | Topic 9.2 Respiratory physiology: gas exchange, regulation. | Lectures, Lab work |
| Module 10. Metabolism and energy. | Topic 10.1 Metabolism, protein, fat, carbohydrate, water and mineral metabolism. | Lectures, Lab work |
| | Topic 10.2 Energy exchange. | Lectures, Lab work |
| Module 11. The reproductive system. | Topic 11.1 Physiology of reproduction. | Lectures, Lab work |
| Module 12. Excretory system. | Topic 12.1 Physiology of excretion. | Lectures, Lab work |
| Module 13. Analyzer systems. | Topic 13.1 Physiology of visual, auditory, skin, gustatory and olfactory analyzers. | Lectures, Lab work |
| Module 14. Ethology. | Topic 14.1 Studying the characteristics of animal behavior. | Lectures, 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) |
|-----------------------------|--|---|
| Lecture | A lecture hall for lecture-type classes, equipped with a set of specialised furniture; board (screen) and technical means of multimedia presentations. | <ul style="list-style-type: none"> - Virtual Physiology. - HS hemometers (Sali). - Goryaev counting chamber. - Electrochemograph. - Biological microscopes. - Erythrocyte sedimentation rate measuring devices: Panchenkov capillaries. - Registration capsule (set). - Blood-forme element |

| Type of academic activities | Classroom equipment | Specialised educational / laboratory equipment, software, and materials for course study (if necessary) |
|-----------------------------|--|--|
| | | <i>counter.</i> - Korotkoff tonometer for measuring blood pressure. - Phonendoscope. - Mixers (melangers) for counting leukocytes, erythrocytes. - Device for determining Rh factor, blood groups |
| Lab work | A classroom for laboratory work, individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and machinery. | - Virtual Physiology. - HS hemometers (Sali). - Goryaev counting chamber. - Electrochemograph. -Biological microscopes. - Erythrocyte sedimentation rate measuring devices: Panchenkov capillaries. - Registration capsule (set). -Blood-forme element counter. - Korotkoff tonometer for measuring blood pressure. - Phonendoscope. - Mixers (melangers) for counting leukocytes, erythrocytes. - Device for determining Rh factor, blood groups |
| Self-studies | A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment. | |

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

1. Sotnikova E.D. Physiology and ethology of animals: physiology of digestion: teaching aid / E.D. Sotnikova, E.V. Kulikov. - Electronic text data. - Moscow : RUDN, 2021. - 44 p.
<https://lib.rudn.ru/MegaPro/Download/MObject/9208>
2. Physiology of digestion and metabolism [Electronic resource] : Textbook / I.N. Medvedev; Ed. by I.N. Medvedev. - SPb. : Lan' Publisher, 2016. - 144 p.
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465094&idb=0

3. Sotnikova E.D. Physiology and ethology of animals: physiology of blood and immune system. Theoretical and practical course = Physiology of Blood and Immune System. Theoretical and practical Course / E.D. Sotnikova, E.V. Kulikov, V.M. Byakhova. - Book in English; electronic text data. - Moscow : RUDN, 2020. - 66 p <https://lib.rudn.ru/MegaPro/Download/MObject/9111>
4. Fomina L.L. Physiology and ethology of animals: Workshop for students of specialty 36.05.01 Veterinary Medicine 2017.-102p. <https://e.lanbook.com/book/130900>

Additional readings:

1. Medvedev I.N. Physiological regulation of an organism [Electronic resource] : textbook / I.N. Medvedev, S.Y. Zavalishina, N.V. Kutafina. - SPb. : Lan Publishing House, 2016. - 392 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465061&idb=0
2. Physiology of muscular and nervous systems [Electronic resource] : Textbook / I.N. Medvedev [et al]; Ed. by I.N. Medvedev. - SPb. : Lan' Publisher, 2015. - 176 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465099&idb=0
3. Ivanov A.A., Ksenofontova A.A., Voinova O.A. Practicum on ethology with the bases of zoopsychology. - 1st ed. - SPb.: Lan', 2013. - 368 p.
4. Bolotiuk V.A., Bolotiuk L.A. Comparative physiology of animals. - SPb: Lan', 2010. - 416 p.
5. Golikov A.N., et al; Physiology of farm animals.- 3rd edition, - M.: Agropromizdat, 2009. - 432 c.

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 «**Physiology and ethology of animals**»
2. The laboratory workshop (if any).on the course «**Physiology and ethology of animals**»
3. The guidelines for writing a course paper / project (if any) on the course.

* 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.

DEVELOPER:

Associate Professor, Department of Veterinary
Medicine

Department position

Signed

Sotnikova E.D.

Name and surname.

HEAD OF EDUCATIONAL DEPARTMENT:

Department of Veterinary Medicine

Department position

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HEAD OF

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Director of the Department of Veterinary Medicine

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