Federal State Autonomous Educational Institution of Higher Education "Peoples' Friendship University of Russia"

Agrarian and Technological Institute

Recommended by ISSC

AGREED
ISSC Chairman

_____ (Yu.A. Vatnikov)

No. _____

"___" _____ 20 ___

APPROVED
Chairman
Of the Academic Council of Agrarian
Institute of Technology
_____ (E.A. Dovletyarova)
Scientific Council meeting minutes
agrarian-technological institute
No. _____

"___" _____ 20 ___

TRAINING PRACTICE PROGRAM

Name of training practice Pharmacology, clinical diagnostics, pathological anatomy.

Recommended for the direction of training / specialty
36.05.01 Veterinary Medicine

Graduate qualification Veterinarian.

Moscow
2021

1. Aims of educational practice

The purpose of the training practice in Pharmacology is to consolidate theoretical knowledge, practical skills and abilities obtained during the study of the course "Pharmacology".

The goal of clinical practice training is to consolidate theoretical knowledge and acquire the skills of clinical and laboratory studies of animals in order to recognize the disease and make an accurate diagnosis.

The purpose of educational practice in pathological anatomy is to gain experience in assessing pathological changes in the organs of involuntarily killed and dead animals in order to establish a diagnosis and conclude about the causes of mortality.

2. Objectives of educational practice:

- Successful and timely consolidation of the knowledge gained by students while listening to theoretical courses;
- Obtaining and consolidating skills for the correct choice of a drug for a certain pathology, the ability to write it out in a prescription and correctly calculate the dose per animal.
- Acquaintance with the modern production of veterinary drugs (visit to the plant for the production of veterinary drugs).
- Studying the assortment of veterinary pharmacies and evaluating it in terms of qualitative, quantitative and price composition.
- Determination of contamination with poisonous plants of a possible place of grazing and hay preparation.
- Mastering the rules of personal hygiene and safety when working with animals, as well as the approach to animals during research;
- Mastering in practice the methods of fixing and taming animals;
- Carrying out preliminary acquaintance with sick animals and collecting anamnesis;
- Conducting a clinical study of animals and poultry of different species using general research methods;
- Mastering the technique of studying the functional state of the cardiovascular, respiratory systems, digestive organs, liver, spleen, excretory system, nervous system, sensory organs, motor sphere;
- Mastering the methods of blood sampling from animals and the study of biological objects by laboratory methods;
- Mastering in practice the methods of X-ray examination of animals;
- Mastering the methodically correct autopsy and the implementation of pathomorphological diagnostics;
- Strengthening the skills of keeping records and drawing up conclusions based on the results of the autopsy;
- Mastering in practice the methods of collection, fixation and sending of pathological material for laboratory research;
- Mastering the basic methods of pathological techniques and diagnostics of animal diseases;
- Strengthening the skills of conducting independent work, as well as working with literary and special sources, with understanding the materials received, and summarizing the results in the form of preparing reports, and their protection.

3. Place of educational practice in the structure of EP HE:

Practice in Pharmacology and Toxicology, Clinical Diagnostics, Pathological Anatomy belongs to Block 2 "Educational Practice", is based on mastering the disciplines Pharmacology, Clinical Diagnostics and Pathological Anatomy and is the final stage for their study.

To undergo practical training in Pharmacology, clinical diagnostics, pathological anatomy, the student must:

Know:

- classification of drugs, their pharmacokinetics, pharmacodynamics, peculiarities of their use in various physiological conditions in animals, the basics of formulation and pharmacy;
- classification of poisonous plants and their toxins, their pharmacokinetics, pharmacodynamics, particular effects on the body, methods of their neutralization;
- general patterns of diagnosis in mammals and birds;
- species-specific features of the manifestation of clinical symptoms in various species of animals under various pathological conditions;
- clinical characteristics of body systems, taking into account species and age characteristics;
- modern methods of laboratory analysis;
- pathological technique;
- pathogenesis and pathomorphology of typical pathological processes and features of their manifestation in various animal species;
- pathomorphology of the main infectious and invasive diseases;
- pathomorphology of the main diseases of organs and systems of animals;
- features of the topographic and clinical anatomy of animals.

Be able to:

- prescribe conservative treatment, taking into account the species, age, sex and physiological state of the animal;
- correctly calculate the concentration and requirements for antimicrobial and antiparasitic agents;
- prescribe a drug in a prescription;
- to make dosage forms, to inject them to an animal;
- to evaluate the effect of a medicinal substance on an animal's body;
- to determine the contamination of a possible place of grazing by poisonous plants;
- choose the right antidote and drug therapy for phytotoxicosis;
- handle clinical instruments;
- conduct research on the animal;
- handle biological material and live animals in accordance with the rules of "safety measures";
- to navigate in the location of organs, the boundaries of the regions according to the skeletal landmarks of the body of various species and ages of domestic animals;
- carry out a comparative analysis of the observed structural changes, formulate conclusions and justifications for them;
- methodically correct autopsy and pathomorphological diagnostics;
- record the results and draw up a conclusion on the causes of death of animals;
- correctly take, fix and send pathological material for laboratory research;
- to apply the basic methods of pathohistological techniques and diagnostics of animal diseases;
- to carry out complex differential pathomorphological diagnostics of animal diseases during autopsy of corpses, as well as during histopathological studies.

Obtain:

- pharmacotoxicological methods;
- methods of clinical diagnostics;
- technique of pathological autopsy of corpses of animals of various types;
- the technique of making pathological and pathohistological preparations (museum macroscopic and microscopic exhibits).

Practicing in Pharmacology, Clinical Diagnostics, Pathological Anatomy is a precursor for disciplines such as Animal Physiology and Ethology; Pathological physiology; Veterinary

Microbiology and Mycology; Virology and Biotechnology; Veterinary Pharmacology; Internal non-communicable diseases; Obstetrics, Gynecology and Andrology;

Parasitology and invasive diseases; Epizootology and infectious diseases; Pathological anatomy and forensic veterinary examination; Veterinary genetics; Breeding with the basics of private animal husbandry; Zoopsychology; Private ethology,

as well as for practical training and preparation of the final qualifying work.

4. Forms of educational practice

1. Laboratory;
2. Museum;
3. Excursion;
4. Field.

5. Place and time of the educational practice

The main bases for conducting educational practice in Animal Anatomy, Animal Hygiene, Animal Breeding are:

- Anatomical Museum of the RUDN University, anatomical museum;
- Educational laboratories of RUDN University;
- Moscow State Academy of Veterinary Medicine and Biotechnology named after K. I. Skryabin: section hall, anatomical museum and vivarium;
- RSAU-Moscow Agricultural Academy named after K.A. Timiryazev. Anatomical Museum;
- CJSC "Sovkhoz named after Lenin", KSK "Matador",
- LLC KSK "Kaskad";
- Farm Kommunarka;
- Sovkhoz im. Lenin "Leninsky district
- All-Russian Scientific Research Institute of Animal Husbandry named after Academician L.K. Ernst (Department of Biotechnology in Animal Husbandry).

Training practice in Pharmacology, clinical diagnosis, pathological anatomy is carried out at the end of the 3rd year, 6th semester after the examination session in accordance with the working curriculum and the schedule of the educational process.

6. Competencies of the student, formed as a result of passing educational practice.

As a result of passing this educational practice, the student must acquire the following practical skills, abilities, universal and professional competencies:

GPC-1 The ability to determine the biological status and normative clinical indicators of organs and systems of the animal body.

PC-1 Ability to collect anamnesis of life and disease of animals to identify the causes of diseases and their nature

PC-2 The ability to conduct a general clinical study of animals in order to establish a preliminary diagnosis and determine a further research program, as well as in accordance with the plan of antiepizootic measures, a plan for the prevention of non-communicable animal diseases

PC-3 Ability to develop animal research programs using special (instrumental) and laboratory methods

PC-4 Ability to conduct clinical studies of animals using special (instrumental) and laboratory methods to clarify the diagnosis

PC-5 Ability to make a diagnosis based on the analysis of anamnesis data, general, special (instrumental) and laboratory research methods

PC-7 Ability to select the necessary drugs of chemical and biological nature for the treatment of animals, taking into account their combined pharmacological effect on the body

PC-19 Ability to perform postmortem diagnostic examination of animals in order to establish pathological processes, diseases, causes of death

PC-26 The ability to collect and analyze scientific information, develop plans, programs and methods for conducting scientific research, conduct scientific research and experiments.

7. The structure and content of educational practice.

The total workload of the training practice is 3 credit points 108 hours.

№	Sections (stages) of practice	Types of educational work in practice, including independent work of students				Monitoring forms
1.	Pharmacology and toxicology	Laboratory practice (25 hours, including SSW 3 hours)	Excursion practice (10 hours, including SSW 2 hours)	Field practice (10 hours, including 3 hours SSW)		Defense of the report, presentation of the practice diary.
2.	Clinical diagnostics	Laboratory practice (25 hours, including SSW 3 hours)	Excursion practice (20 hours, including 5 hours SSW)			Defense of the report, presentation of the practice diary.
3.	Pathological anatomy	Laboratory practice (10 hours, including SSW 3 hours)	Museum practice (8 hours, including 5 hours SSW)			Defense of the report, presentation of the practice diary.

8. Educational, research and scientific-production technologies used in educational practice.

During the practice, the following educational, research and scientific-production technologies are used:

1. Use of reference and scientific literature on medicinal products.

2. Determination of toxic plants in the field. Elaboration of the rules for the preparation and packaging of samples for the laboratory. Prescribing antidote therapy.

3. Acquaintance with the modern process of production of veterinary drugs from the receipt of raw materials at the plant to the output of finished products.

4. Clinical study of animals and poultry of different species using general research methods;

5. Investigation of the functional state of the cardiovascular, respiratory systems, digestive organs, liver, spleen, excretory system, nervous system, sensory organs, motor sphere, incl. based on the results of familiarization with audio and video materials of real patient studies.

6. Research by laboratory methods of blood, urine and faeces of animals and / or reading ready-made research results with the definition of possible pathology;

7. X-ray examination of animals and / or analysis of available X-ray images for the quality of placement, focusing of the apparatus and identification of possible pathology in the studied patients.

8. Study of the autopsy technique and protocol;

9. Studying the principles of systematization and analysis of the data obtained.

9. Educational and methodological support of independent work of students in educational practice.

Control questions and tasks for conducting the current certification by sections (stages) of practice, mastered by the student independently, are given in the fund of assessment tools on TUIS.

10. Educational-methodical and informational support of educational practice.

a) main literature:

1. Circulation and quality control of medicinal products for veterinary use on the territory of the Russian Federation: teaching aid / Yu.A. Vatnikov, M.I. Shopinskaya, S.G. Drukovsky, E.V. Kulikov. - Electronic text data. - Moscow: RUDN, 2021 .-- 37 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=494768&idb=0

2. Quality control and veterinary and sanitary examination of raw materials of animal origin, feed and medicinal products for animals: textbook / I.R. Smirnova, V.P. Yaremchuk, L.P. Satyukova, M.I. Shopinskaya. - Electronic text data. - St. Petersburg: Quadro, 2020 .-- 188 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487455&idb=0

3. Veterinary pharmacology. Dictionary-reference book: a textbook for universities / A. V. Shadskaya, S. V. Kuznetsov, N. V. Sakhno, R. F. Kapustin. - St. Petersburg: Lan, 2020 .-- 136 p. https://e.lanbook.com/book/152613

4. Lavrinenkova, A. N. Course of lectures on veterinary pharmacology: a course of lectures / A. N. Lavrinenkova. - Bryansk: Bryansk GAU, 2018 .-- 104 p. https://e.lanbook.com/book/133070

5. Usha Boris Veniaminovich. Clinical diagnostics of internal non-infectious diseases of animals / B.V. Usha, I.M. Belyakov, R.P. Pushkarev. - Electronic text data. - St. Petersburg: Quadro, 2020 .-- 487 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487452&idb=0

6. Usha Boris Veniaminovich. Propedeutics of internal non-infectious animal diseases / B.V. Usha, I.M. Belyakov. - Electronic text data. - St. Petersburg: Quadro, 2020 .-- 474 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487539&idb=0

7. Ivanov A.A. Clinical laboratory diagnostics: textbook / A.A. Ivanov. - SPb. : Publishing house "Lan", 2017. - 432 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465014&idb=0

8. Internal diseases of animals. For secondary schools: a textbook for sports / G. G. Shcherbakov, A. V. Yashin, S. P. Kovalev, S. V. Vinnikova. - 6th ed., Erased. - St. Petersburg: Lan, 2021 .-- 496 p. https://e.lanbook.com/book/156408

9. Clinical diagnostics in veterinary medicine: textbook / compiled by N. A. Bashkatov. - Persianovsky: Donskoy GAU, 2020 .-- 161 p. https://e.lanbook.com/book/148538

10. Pathological physiology and pathological anatomy of animals: textbook / AV Zharov, L.N. Adamushkina, T.V. Loseva, A.P. Strelnikov; Ed. A.V. Zharova. - 4th ed., Erased. - SPb. : Publishing house "Lan", 2018. - 416 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464906&idb=0

11. Baymatov V.N. Workshop on pathological physiology + CD: textbook / V.N. Baymatov. - 2nd ed., Erased. - SPb. : Publishing house "Lan", 2017. - 352 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464947&idb=0

12. Televova, NR Pathological physiology. Section Typical pathological processes: teaching aid / NR Televova, FG Astarkhanov, FN Dagirova. - Makhachkala: DagGAU named after M.M. Dzhambulatov, 2020 .-- 58 p. https://e.lanbook.com/book/159426

13. Pathological physiology and pathological anatomy of animals: a textbook for universities / A. V. Zharov, L. N. Adamushkina, T. V. Loseva, A. P. Strelnikov; edited by A. V. Zharov. - 7th ed., Erased. - St. Petersburg: Lan, 2021 .-- 416 p. https://e.lanbook.com/book/159515

14. Zharov, A. V. Pathological anatomy of animals: a textbook for universities / A. V. Zharov. - 3rd ed., Erased. - St. Petersburg: Lan, 2021 .-- 604 p. https://e.lanbook.com/book/164712

b) additional literature:

1. Veterinary pharmacology. Toxicology. Antibiotics Modern classification (register of 2017): guidelines / compiled by E.S.Tkacheva. - Vologda: VGMKhA them. N.V. Vereshchagin, 2018 .-- 36 p. https://e.lanbook.com/book/130882

2. Karmaliev, RS Veterinary pharmacology: textbook / RS Karmaliev. - Uralsk: WKATU them. Zhangir Khan, 2016 .-- 264 p. https://e.lanbook.com/book/147888

3. Prevention of infectious diseases of animals with aerosols of chemical and biological preparations: monograph / A.T. Kushnir, I.A. Bureev, Yu.O. Selyaninov [and others]. - SPb. : Publishing house "Lan", 2016. - 192 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465095&idb=0

4. Sokolov, V. D. Pharmacology: textbook / V. D. Sokolov. - 4th ed., Rev. and add. - St. Petersburg: Lan, 2013 .-- 576 p. https://e.lanbook.com/book/10255

5. Clinical diagnostics of internal diseases of animals: textbook / S.P. Kovalev, A.P. Kurdeko, E.L. Bratushkin [and others]. - 2nd ed., Erased. - SPb. : Publishing house "Lan", 2016. - 544 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465083&idb=0

6. Clinical gastroenterology of animals: textbook / II. Kalyuzhny, G.G. Shcherbakov, A.V. Yashin [and others]. - 2nd ed., Rev. - SPb. : Publishing house "Lan", 2015. - 448 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465124&idb=0

7. Seleznev S. B. Clinical morphology of the pancreas of dogs in ultrasound diagnostics / S.B. Seleznev, D.I. Esina, E.V. Kulikov

// Bulletin of the Peoples' Friendship University of Russia: Agronomy and animal husbandry. - 2014. - No. 2. - P. 39 - 50.http: //lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=431663&idb=0

8. Seregin Ivan Georgievich. Veterinary and sanitary control of animal slaughter products in case of endemic diseases / I.G. Seregin, A.M. Abdullaeva, Yu.A. Yuldashbaev. - Electronic text data. - St. Petersburg: Quadro, 2020 .-- 154 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487449&idb=0

9. Lukashik G.V. Anatomical and physiological features of pigs and pathological autopsy of their corpses: textbook / G.V. Lukashik, V.G. Sokolov, N.V. Sayenko. - SPb. : Publishing house "Lan", 2016. - 100 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465062&idb=0

10. Pathological physiology and pathological anatomy of animals: textbook / A.V. Zharov, L.N. Adamushkina, T.V. Loseva, A.P. Strelnikov; Ed. A.V. Zharova. - 2nd ed., Rev. and add. ;

Electronic text data. - SPb. : Lan, 2014 .-- 416 p. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=452266&idb=0

11. Savinkov, A. V. Pathological physiology: a tutorial / A. V. Savinkov, V. M. Meshkov. - Samara: SamGAU, 2018 .-- 188 p. https://e.lanbook.com/book/111866

12. Clinical and biochemical aspects of acid-base homeostasis and their importance in the pathology of productive animals: monograph / II Kalyuzhny, SP Ubiraev, GG Shcherbakov [and others]; edited by I. I. Kalyuzhny. - St. Petersburg: Lan, 2019 .-- 192 p. https://e.lanbook.com/book/113388

c) software and Internet resources:

- Windows 7 Enterprise
- Microsoft Office.

1.www.cnshb.ru,
2.www.elibrary.ru,
3.www.vet.purdue.edu,
4.www.allvet.ru,
5.www.glossary.ru,
6.www.vetmed.edu
7.https://www.ncbi.nlm.nih.gov/pubmed
8.http: //www.uchvuz.ru
9.http: //www.veterinarka.ru
10.www.allvet.ru
11.https: //www.medlit.biz

10. Material and technical support of medical practice.

- Equipped laboratory classrooms:
  - o Lecture hall.
  - o Prosectories.
  - o Sectional room for autopsy of cadaveric material.
  - o Premises for preparation and storage of fixed cadaveric material.
  - o Cold chamber for storing cadaveric material.
  - o Pathological Museum
- Equipment:
  - o Medicines for work
  - o Exhibition of veterinary drugs
  - o Teaching demo tables,
  - o Schemes,
  - o Instruments for examination, percussion, auscultation and thermometry of animals;
  - o Laboratory glassware, reagents and consumables;
  - o Instruments for conducting anatomical autopsy of animal corpses - knives, tweezers, scalpels, scissors of all kinds, hammers, saws, etc.
  - o Microscopes.
  - o Demonstration microscopes with a video camera.
  - o Stereoscopic and binocular loupes.
  - o Coated tables, screw stools.
  - o Multimedia installations.
- Preparations that ensure the educational process:
  - o Collection of museum micropreparations.

o Wet museum macro-preparations.

o Demonstration tables and diagrams on topics of lectures and practical lessons.

o Multimedia collection of macro- and micropreparations characterizing pathological processes, animal diseases.

11. Forms of intermediate certification (based on the results of practice).

Based on the results of passing educational practice, the student prepares for each section of the practice:

1. Diary. The main document reflecting the volume and quality of the student's work during practice. (TUIS)

2. Report. A bound document, drawn up and supplemented with illustrations, made according to the regulations for the preparation of a report on educational practice. (TUIS)

Interim certification is carried out in the form of:

1. Checking and evaluating the trainee's diary in accordance with the point-rating system.
2. Defense the diary through an interview.
3. Checking and evaluating the practice report in accordance with the point-rating system.
4. Defense the report by public speaking.

Description of indicators, criteria and scale for assessing competencies

GRS points	Traditional RF assessments	Evaluations ECTS
95 - 100	5	A
86 - 94		B
69 - 85	4	C
61 - 68	3	D
51 - 60		E
31 - 50	2	FX
0 - 30		F
51-100	Credit	Passed

Explanation of the grades table:
Description of ECTS grades

A	"**Excellent**" - the theoretical content of the course is fully mastered, without gaps, the necessary practical skills for working with the acquired material are formed, all the educational tasks provided for by the training program are completed, the quality of their implementation is assessed by the number of points close to the maximum.
B	"**Very good**" - the theoretical content of the course has been mastered completely, without gaps, the necessary practical skills for working with the mastered material have basically been formed, all the educational tasks provided for by the training program have been completed, the quality of most of them is assessed by the number of points close to the maximum.

C	"**Good**" - the theoretical content of the course has been mastered completely, without gaps, some practical skills of working with the acquired material are not sufficiently formed, all the educational tasks provided for by the training program have been completed, the quality of performance of none of them was not assessed by the minimum number of points, some types of tasks were completed with errors.
D	"**Satisfactory**" - the theoretical content of the course is partially mastered, but the gaps are not significant, the necessary practical skills for working with the mastered material are basically formed, most of the educational tasks provided for in the training program have been completed, some of the completed tasks may contain errors.
E	"**Satisfactory**" - the theoretical content of the course is partially mastered, some practical skills have not been formed, many of the educational tasks provided for by the training program have not been completed, or the quality of some of them is assessed by the number of points close to the minimum.
FX	"**Conditionally unsatisfactory**" - the theoretical content of the course has been mastered in part, the necessary practical skills have not been formed, most of the educational tasks provided for by the training program have not been completed, or the quality of their implementation was assessed by the number of points close to the minimum; with additional independent work on the course material, it is possible to improve the quality of the performance of educational tasks.
F	"**Certainly unsatisfactory**" - the theoretical content of the course has not been mastered, the necessary practical skills have not been formed, all completed study tasks contain gross errors, additional independent work on the course material will not lead to any significant improvement in the quality of the study tasks.

The program has been drawn up in accordance with the requirements of the ES of HE RUDN

Developers:

Professor of the Department veterinary medicine _____ (signature) Kharlitskaya E.V.

Associate Professor of the Department veterinary medicine _____ (signature) A.S. Karamyan

Associate Professor of the Department veterinary medicine _____ (signature) Kulikov E.V.

Program Manager:

Associate Professor of the Department veterinary medicine _____ (signature) Kulikov E.V.

Director of the Department of Veterinary Medicine _____ Vatnikov Yu.A.

(signature)