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**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

Toxicology

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 "**Toxicology**" is to study the effect of toxic substances of anthropogenic and natural origin on the organism of agricultural, wild and game animals, fish and bees, on their productivity, reproductive function and sanitary quality of livestock products.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course "**Toxicology**" 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)
PC-7	Ability to choose or develop a treatment plan for a patient based on the diagnosis	PC-7.1 Is able to select medications necessary to treat animals based on the principles of evidence-based medicine, taking into account the combined pharmacological effects of all prescribed medications on the body.
		PC-7.2 Able to choose the optimal method of drug administration, calculate the dose and frequency of administration, and the duration of each drug course

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "**Toxicology**" refers to the core part of block B1 of the Educational Program of Higher Education.

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*
PC-7	Ability to choose or develop a treatment plan for a patient based on the diagnosis	Veterinary pharmacology	Dermatology Cardiology Endocrinology Nephrology 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 TRAINING ACTIVITIES

The total workload of the course "**Toxicology**" 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			
			6	-	-	-
Contact academic hours		51	51	-	-	-
including						
Lectures		17	17	-	-	-
Lab work		34	34	-	-	-
Seminars (workshops/tutorials)		-	-	-	-	-
Self-study		48	48	-	-	-
Evaluation and assessment (exam/pass/fail grading)		9	9	-	-	-
Course workload	Academic hour	108	108	-	-	-
	Credit unit	3	3	-	-	-

5. COURSE CONTENTS

Table 5.1 Content of the course (module) by type of academic work

Course module title	Course module contents (topics)	Academic activities types
Module 1. General toxicology.	Topic 1: General toxicology	Lectures, Lab work.
Module 2. Private toxicology.	Topic 2.1 Chemical toxicoses.	Lectures, Lab work.
	Topic 2.2 Feed toxicosis.	Lectures, Lab work.
	Topic 2.3 Phytotoxicoses.	Lectures, Lab work.
	Topic 2.4 Mycotoxicoses.	Lectures, Lab work.
	Topic 2.5 Toxicosis with poisons of animal origin.	Lectures, Lab work.
	Topic 2.6 Poisoning by toxic substances.	Lectures, Lab work.
	Topic 2.7 Poisoning Polychlorinated biphenyls and Polychlorinated biphenyls.	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	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	-
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 STUDY

Main readings:

1. Kharlitskaya E.V., Vatnikov Yu.A. Educational practice in pharmacology and toxicology. Educational and methodological recommendations M., "ZooVetKniga", 2013, pp.1-32.
2. Korolev B.A., Skosyrskikh L.N., Lieberman E.L. Workshop on Toxicology 2019.-384p. <https://e.lanbook.com/book/125440>
3. Izvekova T. V., Gushchin A. A., Kobeleva N. A. Fundamentals of toxicology 2022.- 152p. <https://e.lanbook.com/book/200405>

Additional Readings:

1. Zhulenko V.N., Rabinovich M.I., Talanov G.A., Veterinary toxicology. - M.: KolosS, 2012. – 384 p.
2. Korolev B. A. Practicum on toxicology [Text] : Textbook / B.A. Korolev, L.N. Skosyrskikh. - St. Petersburg : Lan, 2016. - 384 p.

3. Toxicological ecology : textbook / A.V. Miftakhutdinov. - St. Petersburg : Publishing House "Lan", 2018. - 308 p
4. Belyavsky V.N., Ushakov S.S. VETERINARY TOXICOLOGY. - Grodno: GGAU, 2010. - 24 p.
5. Gusynin I.A. Toxicology of poisonous plants – M. : Kolos, 2008. - 624 p.
6. Modern veterinary medicines / Nabiev F.G., Akhmadeev R.N., - 2nd ed., reprint ed. - St. Petersburg: Lan, 2011. - 816 p.
7. Roder J. Veterinary toxicology. - M.: Aquarium-Print, 2008. - 416 p.

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 "**Toxicology**".
2. Laboratory workshop on the course "**Toxicology**".

* 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 UPON COURSE COMPLETION

The assessment toolkit and the grading system* to evaluate the competences formation level (competences in part) upon the course study completion 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

Kharlitskaya E.V.

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