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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

Veterinary and Industrial Laboratories with design basics

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. GOALS AND OBJECTIVES OF THE COURSE

The aim of mastering the course "**Veterinary and Industrial Laboratories with design basics**" is to acquire theoretical knowledge and practical skills in organizing the work of veterinary and industrial laboratories.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The implementation of the course "**Veterinary and industrial laboratories with design basics**" is aimed at creating the following competencies (parts of competencies) for students:

Table 2.1. List of competencies formed by students during the development of the course (results of the development of the course)

Competence code	Competence descriptor	Indicators of competence accomplishment (within the course)
GPC-4	Is able to use in professional activity methods to solve problems using modern equipment in the development of new technologies and use modern professional methodology to conduct experimental research and interpretation of the results	GPC-4.1 Has the conceptual and methodological apparatus of the basic natural sciences at a level sufficient for full professional activity at the modern level
		GPC-4.2 Knows how to solve problems using modern equipment

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "**Veterinary and industrial laboratories with design basics**" belongs to the part formed by the participants of educational relations of the block B1 of the Educational Program of Higher Education.

As part of the Educational Program of Higher Education, students also master other courses and /or practices that contribute to achieving the planned results of mastering the course "**Veterinary and industrial laboratories with design basics**".

Table 3.1. List of Higher Education Program components courses that contribute to expected learning outcomes

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
GPC-4	Is able to use in professional activity methods to solve problems using modern equipment in the development of new technologies and use modern professional	Inorganic and analytical chemistry Organic chemistry Biological physics Physical and Colloidal Chemistry	Study practice Clinical internship Industrial practice Academic research practice with the preparation of a

	methodology to conduct experimental research and interpretation of the results	Biological chemistry Maths Immunology Laboratory diagnostics of infectious and invasive diseases	scientific qualification project Preparation for and passing the state exam
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4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the course "Veterinary and industrial laboratories with design basics" is 2 credits.

Table 4.1. Types of academic activities during the period of the HE program mastering for full-time study

Types of academic activities		HOURS	Semesters				
			9	-	-	-	
Contact academic hours		34	34	-	-	-	
including							
Lectures		-	-	-	-	-	
Lab work		34	34	-	-	-	
Seminars (workshops/tutorials)		-	-	-	-	-	
Self-study		30	30	-	-	-	
Evaluation and assessment (exam/pass/fail grading)		8	8	-	-	-	
Course workload		Academic hour	72	72	-	-	-
		Credit unit	2	2	-	-	-

5. COURSE CONTENTS

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

Modules	Content of the modules (topics)	Types of academic activities
Module 1. Planning and placement of veterinary laboratories. Equipment sheet.	Topic 1.1. Standards GOST, TU, SanPiN, NTP APK and others for laboratories of veterinary and sanitary examination. The norms of the RD APK. Recommendations for the design and operation of veterinary laboratories. SanPiN 2.2.1 2.1.1.1200-03 Sanitary protection zones and sanitary classification of enterprises, structures and other facilities.	Lab work
Module 2. Working with laboratory animals.	Topic 2.1. Sanitary and epidemiological requirements for the device, equipment and maintenance of EBC (vivariums).	Lab work

	Veterinary and sanitary rules for keeping and using laboratory animals.	
Module 3. Safety precautions when working in laboratories. Sample selection.	<p>Topic 3.1. SP 1.3.3118-13 Safety of work with microorganisms of I - II groups of pathogenicity (danger).</p> <p>SP 1.3.2322-08 Safety of work with microorganisms of III-IV pathogenicity groups</p> <p>SP 2.6.1.2612-10 Basic sanitary rules for ensuring radiation safety</p> <p>PND F 12.13.1-03 Methodical recommendations. Safety precautions when working in analytical laboratories general provisions.</p> <p>Safety precautions for disinfection in laboratories of veterinary and sanitary examination.</p> <p>Rules for working with samples.</p>	Lab work
Module 4. Accreditation of testing laboratories.	<p>Topic 4.1. Federal Law of 28.12.2013 N 412-FZ rev. from 03/02/2016 About accreditation in the national accreditation system.</p> <p>GOST R 51000.4-2011. National standard of the Russian Federation. General requirements for the accreditation of testing laboratories.</p> <p>GOST ISO IEC 17025-2009. Interstate standard. General requirements for the competence of testing and calibration laboratories.</p> <p>GOST 33044-2014 OECD GLP Good Laboratory Practice Principles.</p>	Lab work
Module 5. Production laboratory of veterinary and sanitary examination at the enterprise.	<p>Topic 5.1. Placement of laboratories. Laboratory structure. Veterinary and sanitary requirements for the premises and equipment of the production laboratory for veterinary and sanitary examination. Tasks and functions of the production laboratory for veterinary and sanitary examination. Responsibilities of the specialists of the production laboratory of veterinary and sanitary examination.</p>	Lab work
Module 6. State Laboratory of Veterinary and Sanitary Expertise (SLVSE) in the food market.	<p>Topic 6.1. Regulations on the state laboratory of veterinary and sanitary examination in food markets. Tasks and functions of SLVSE. SLVSE structure. Job responsibilities of employees of</p>	Lab work

	SLVSE. Basic regulations for SLVSE workers in food markets. Mobile laboratory for veterinary and sanitary examination for fairs and agricultural exhibitions.	
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6. COURSE EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Material and technical support of the course

<i>Classroom for Academic Activity Type</i>	<i>Equipping the classroom</i>	Specialized educational/laboratory equipment, software and materials for the development of the course (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. Production activity of veterinary sanitary examination laboratories at meat-processing enterprises and food markets: textbook / I.G. Seregin, T.V. Kurmakaeva, V.E. Nikitchenko [and others]. - Electronic text data. - St. Petersburg: Quadro, 2018. -- 408 p. - (Textbooks and teaching aids for higher educational institutions). - ISBN 978-5-906371-96-8: 1014.97.
<http://lib.rudn.ru/ProtectedView/Book/ViewBook/8046>

Additional Readings:

1. Usha B.V. Laboratory methods in veterinary and sanitary examination of food raw materials and finished products [Text / electronic resource]: Textbook: In 2 hours. Part 1 / BV. Usha, D.V. Nikitchenko. - Electronic text data. - M.: Publishing house of RUDN, 2013. -- 252 p. - ISBN 978-5-209-04291-4
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=402978&idb=0
2. Nikitin I.N. Organization and economics of veterinary affairs [Electronic resource]: Textbook / IN. Nikitin. - 6th ed., Rev. and add. - SPb. : Publishing house "Lan", 2014. - (Textbooks for universities. Special literature). - ISBN 978-5-8114-1609-7.
3. Nikitin IN Organization of veterinary business [Electronic resource]: Textbook / IN. Nikitin. - 4th ed., Rev. and add. - SPb. : Publishing house "Lan", 2013. - 288 p. - (Textbooks for universities. Special literature). - ISBN 978-5-8114-1228-0.
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=465224&idb=0

4. Veterinary and sanitary examination of food raw materials and finished products. Laboratory methods [Text]: Tutorial. - M.: Publishing house of RUDN, 2016.-- 225 p. - ISBN 978-5-209-07445-8

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/>
- Google search engine <https://www.google.ru/>
- Scopus abstract database <http://www.elsevierscience.ru/products/scopus/>

Educational and methodological materials for independent work of students during the development of the course/ module*:

1. A course of lectures on the course "**Veterinary and industrial laboratories with design basics**".
2. Laboratory workshop on the course "**Veterinary and industrial laboratories with design basics**".

* - The training toolkit and guidelines for the internship are placed on the internship 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 Department of Veterinary
Medicine

Position, Basic curriculum

Signature

Drukovsky S.G.

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