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

Space technologies at the service of the agro-industrial complex
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

2024

1. GOALS AND OBJECTIVES OF THE COURSE

The aim of mastering the course "**Space technologies at the service of the agro-industrial complex**" is to provide the student with a deeper knowledge of various devices used in outer space that can be used for the benefit of agricultural production.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The implementation of the course "**Space technologies at the service of the agro-industrial complex**" 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-2	Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal organism	GPC-2.2 Can establish the presence and validity of cause-effect relationships between the impact of certain etiological factors on the animal body and the development of diseases

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "**Space technologies at the service of the agro-industrial complex**" belongs to the part formed by the participants of educational relations of the block B1of 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 "**Space technologies at the service of the agro-industrial complex**".

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-2	Is able to interpret and evaluate in professional activity the influence of natural, socio-economic, genetic and economic factors on the physiological state of the animal organism	Animal health and welfare Feeding animals with the basics of forage production	Study practice Clinical internship Industrial practice Academic research practice with the preparation of a scientific qualification project

			Preparation for and passing the state exam

4. COURSE WORKLOAD AND TRAINING ACTIVITIES

Course workload of the course "**Space technologies at the service of the agro-industrial complex**" is 3 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		64	64	-	-	-
Evaluation and assessment (exam/pass/fail grading)		10	10	-	-	-
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

Modules	**Content of the modules (topics)**	**Types of academic activities**
Module 1. The device of space and the Earth.	Topic 1.1. Space missions to explore the Solar System - challenges and opportunities.	Lab work
	Topic 1.2. Implemented and planned projects for the study of the Solar System.	Lab work
	Topic 1.3. Space missions for the exploration of the Sun - tasks, features and limitations.	Lab work
	Topic 1.4. Orbital missions for the exploration of distant space.	Lab work
Module 2. Space technology.	Topic 2.1. Technique, apparatus and various devices used in outer space.	Lab work
	Topic 2.2. Areas of activity on Earth that rely on data from spacecraft and devices.	Lab work
	Topic 2.3. Space technology used in the agro-industrial complex.	Lab work

6. COURSE EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Material and technical support of the course

Classroom for Academic Activity Type	***Equipping the classroom***	**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. Lysochenko A.A. Strategic and logistic management in the agro-industrial complex as a factor in ensuring food security in the region 2016.-176s
2. Lebedev V.V., Gansvind I.N. Design of space monitoring systems 2010.- 392s

Additional Readings:

1. Tushkanov M.P., Guryanova N.M., Vinnichek L.B .: Organization of production and entrepreneurship in the agro-industrial complex 2019.-270c

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 "**Space technologies at the service of the agro-industrial complex**".

2. Laboratory workshop on the course "**Space technologies at the service of the agro-industrial complex**".

* - 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).

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