

Документ подписан простой электронной подписью
Информация о владельце:
ФИО: Ястребов Олег Александрович
Должность: Ректор
Дата подписания: 26.05.2026 15:53:07
Уникальный программный ключ:
ca953a0120d891083f939673078ef1a989dae18a

**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

HISTORY AND METHODOLOGY OF SCIENTIFIC AGRONOMY

course title

Recommended by the Didactic Council for the Education Field of:

35.04.04 AGRONOMY

field of studies / speciality code and title

**The course instruction is implemented within the professional education programme
of higher education:**

INTEGRATED PLANT PROTECTION

higher education programme profile/specialisation title

1. COURSE GOAL(s)

The discipline "History and Methodology of Scientific Agronomy" is part of the Master's program "Integrated Plant Protection" under the field of study 35.04.04 "Agronomy" and is studied in the 1st semester of the 1st year. The discipline is delivered by the Agrobiotechnology Department.

The discipline consists of 4 sections and 12 topics and is aimed at studying the history of agronomy and production of plant products.

The purpose of mastering the discipline is: mastering competencies in the field of the history of agronomy as a science and methodology for obtaining scientific knowledge of the production of products from plants for human nutrition, animal feeding and raw materials for industry.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the discipline "History and Methodology of Scientific Agronomy" is aimed at developing the following competencies (parts of competencies) in students:

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-1	Able to carry out critical analysis of problem situations based on a systematic approach, develop an action strategy	GC-1.2 Uses a systematic approach to solve assigned tasks; GC-1.3 Develops a strategy for achieving the set goal as a sequence of steps, anticipating the result of each of them and assessing their impact on the external environment of the planned activities and on the relationship between the participants in these activities;
GC-5	Able to analyze and take into account cultural diversity in the process of intercultural interaction	GC-5.1 Demonstrates understanding of the features of different cultures and nations; GC-5.2 Builds social interaction, taking into account the common and specific features of different cultures and religions;
GC-6	Able to determine and implement priorities of own activity and ways of its improvement based on self-assessment	GC-6.1 Assesses own resources and their limits (personal, situational, temporal), optimally uses them for successful completion of the assigned task; GC-6.2 Plans professional trajectory taking into account the features of both professional and other types of activities and labor market requirements;
GPC-2	Able to transfer professional knowledge taking into account pedagogical methods	GPC-2.1 Knows modern educational technologies of professional education (vocational training); GPC-2.2 Transfers professional knowledge in the field of agronomy, explains current problems and trends in its development, modern technologies for the production of crop production;
PC-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign experience in the	PC-1.1 Performs critical analysis of the information received;

Competence code	Competence descriptor	Competence formation indicators (within this course)
	field of agronomy	
PC-5	Able to prepare scientific and technical reports, reviews and scientific publications based on the results of conducted research	PC-5.1 Develops a research program to study the effectiveness of agronomic techniques; PC-5.3 Able to properly organize obtained research results in articles, textbooks and monographs;

3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The discipline "History and Methodology of Scientific Agronomy" belongs to the mandatory part of Block 1 "Disciplines (modules)" of the higher education program.

Within the framework of the higher education program, students also master other disciplines and/or practices that contribute to achieving the planned learning outcomes of the discipline "History and Methodology of Scientific Agronomy".

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*
GC-1	Able to carry out critical analysis of problem situations based on a systematic approach, develop an action strategy		Scientific and Research Practice; History of Religions in Russia;
GC-5	Able to analyze and take into account cultural diversity in the process of intercultural interaction		Scientific research work; Scientific and Research Practice; Organization of Integrated Plant Protection Systems; Instrumental methods of research; Plant immunity; Biotechnology in Plant Protection; Undergraduate practice/Pre-diploma practice;
GC-6	Able to determine and implement priorities of own activity and ways of its improvement based on self-assessment		Scientific research work; Scientific and Research Practice;
GPC-2	Able to transfer professional knowledge taking into account pedagogical methods		
PC-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign experience		Scientific research work; Scientific and Research Practice; Undergraduate practice/Pre-diploma practice; Plant Quarantine;

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
	in the field of agronomy		Biotechnology in Plant Protection; Organization of Integrated Plant Protection Systems; Plant immunity;
PC-5	Able to prepare scientific and technical reports, reviews and scientific publications based on the results of conducted research		Mathematical Modeling and Design; Scientific research work; Scientific and Research Practice; Undergraduate practice/Pre-diploma practice;

* To be filled in according to the competence matrix of the higher education programme.

** – Elective disciplines/practices

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total labor intensity of the discipline "History and Methodology of Scientific Agronomy" is 5 credit units.

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
		1
<i>Contact academic hours</i>	<i>51</i>	<i>51</i>
including:		
Lectures (LC)	17	17
Lab work (LW)	0	0
Seminars (workshops/tutorials) (S)	34	34
<i>Self-studies</i>	<i>102</i>	<i>102</i>
<i>Evaluation and assessment (exam/passing/failing grade)</i>	<i>27</i>	<i>27</i>
Course workload	academic hours	180
	credits	5

* To be filled in regarding the higher education programme correspondence training mode.

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Module 1: The origins and stages of development of the theoretical foundations of scientific agronomy	Topic 1.1. The emergence of scientific agronomy as a result of the appeal of natural science to the problems of deterioration of the food supply of the growing urban population	
	Topic 1.2. Research programs of the second half of the 20th century. The Golden Age of agronomy. Development of research based on a balanced cognitive model	
	Topic 1.3. The specifics of research programs for	

Course module title	Course module contents (topics)	Academic activities types
	long-term and extended field experiments. From comparative to identification experiments. Practice as a criterion for the truth of knowledge. Expanding research in production conditions	
Module 2: Methods of systematic research in agronomy	Topic 2.1. Key concepts, their designation and meaning. Examples of erroneous definitions. Familiarization with logical categories and principles of correct thinking	
	Topic 2.2. Requirements for the preliminary stage of research	
	Topic 2.3. Methods of economic research in the examination of scientific programs and evaluation of research results. Modeling-based research programs	
	Topic 2.4. Holism as the philosophical basis of the systemic method. Examples of solving agronomic problems using a systematic method	
Module 3: Modern problems in agronomy and the main directions of the search for their solution. The concept of a scientific problem and the justification of its solution methods	Topic 3.1. Modern scientific problems of agriculture. A hypothetical deductive research method	
	Topic 3.2. The concept of an invention and the registration of an application for an invention. The need to strengthen scientific and technical creativity in agronomy	
	Topic 3.3. Development of computer verification methods and the increasing role of computer experiment in research of farming systems	
	Topic 3.4. New problems in agriculture. The limits of applicability of the methodology of evolutionism to modernity. Explanatory possibilities, boundaries	
	Topic 3.5. Features and requirements for scientific methods in the examination of technologies. Features of the organization and conduct of monitoring studies	
Module 4: Course work/project. Subject: Historical aspects of the development of scientific agronomy. Methodological approaches in the understanding and formation of scientific agronomy. The role of a scientist in solving emerging problems and tasks in the field of scientific agronomy	Topic 4.1. Course work/project. Subject: Historical aspects of the development of scientific agronomy. Methodological approaches in the understanding and formation of scientific agronomy. The role of a scientist in solving emerging problems and tasks in the field of scientific agronomy	

* - to be filled in only for **full**-time training: *LC* - lectures; *LW* - lab work; *S* - seminars.

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 specialized furniture; board (screen) and technical means of multimedia presentations	Set of specialized furniture; technical means: Interactive complex – Triumph Board interactive whiteboard with Optoma projector
Seminar	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialized furniture and technical means for multimedia presentations.	Set of specialized furniture; technical means: Interactive complex – Triumph Board interactive whiteboard with Optoma projector
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.	

* The premises for students' self-studies are subject to **MANDATORY** mention

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

1. Agronomy. DOI: 10.5772/intechopen.78102. Webshop link: <https://www.intechopen.com/books>. ISBN: 9781838812232, 9781838812225, 9781838812249. Publisher: IntechOpen. Publisher website: <https://www.intechopen.com/>. Publication date and place: 2020. Imprint: IntechOpen. Classification: Agronomy & crop production. Pages: 108.
2. Osipova, G.S. *The history and methodology of scientific gardening: a textbook* / G.S. Osipova, L.N. Khayrova. — St. Petersburg: SPbGAU, 2020. — 102 p. — Text: electronic // Lan: electronic library system. — URL: <https://e.lanbook.com/book/191296>

Additional readings:

1. *Introduction to professional activity: a textbook for universities* / V.A. Reimer, S.P. Knyazev, K.V. Zhuchayev, E.A. Romankova; edited by V.A. Reimer. — St. Petersburg: Lan, 2024. — 232 p. — ISBN 978-5-507-48569-7. — Text: electronic // Lan: electronic library system. — URL: <https://e.lanbook.com/book/385865>
2. *Methodology of science and modern problems in agronomy, agrochemistry and agro soil science: textbook / compiled by N.A. Ryabtseva [et al.]*. — Persianovsky: Donskoy State Agrarian University, 2021. — 183 p. — Text: electronic // Lan: electronic library system. — URL: <https://e.lanbook.com/book/216707>

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 "Znaniy": <https://znaniy.ru/>

2. Databases and search engines:

- Sage: <https://journals.sagepub.com/>
- Springer Nature Link: <https://link.springer.com/>
- Wiley Journal Database: <https://onlinelibrary.wiley.com/>
- Scientometric database Lens.org: <https://www.lens.org>

Training toolkit for self- studies to master the course *:

- Lecture course on the discipline "History and Methodology of Scientific Agronomy".

* 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.

DEVELOPERS:

Professor of the Agrobiotechnology Department

Pakina E.N.

position, department

name and surname

HEAD OF EDUCATIONAL DEPARTMENT:

Director of the Agrobiotechnology Department

Pakina E. N.

name of department

name and surname

**HEAD
OF HIGHER EDUCATION PROGRAMME:**

Director of the Agrobiotechnology Department

Pakina E. N.

position, department

name and surname