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

PLANT PROTECTION

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:

GENERAL AGRONOMY

higher education programme profile/specialisation title

2024

1. THE GOAL OF MASTERING THE DISCIPLINE

The discipline "Plant Protection" is included in the master's program "General Agronomy" in the direction 35.04.04 "Agronomy" and is studied in the 3rd semester of the 2nd year. The discipline is implemented by the Agrobiotechnology Department. The discipline consists of 7 sections and 9 topics and is aimed at studying pests and diseases in agriculture, protective measures against them

The purpose of mastering the discipline is to build a modern system of protective measures against a complex of pests and diseases and the technology for its implementation.

2. REQUIREMENTS TO THE RESULTS OF MASTERING THE DISCIPLINE

Mastering the discipline “Plant Protection” is aimed at developing the following competencies (parts of competencies) in students:

Table 2.1. List of competencies developed in students while mastering the discipline (results of mastering the discipline)

Cipher	**Competence**	**Indicators of Competence Achievement** (within the framework of this discipline)
UK-7	Able to search for the necessary sources of information and data, to perceive, analyze, remember and transmit information using digital means, as well as with the help of algorithms when working with data obtained from various sources in order to effectively use the information obtained to solve problems, to evaluate the information, its reliability, build logical conclusions based on incoming data information and data	UK-7.1 Conducts an assessment of information, its reliability, builds logical conclusions based on incoming information and data; UK-7.2 Has practical experience in searching, perception, storage, analysis, transmission of information and data using digital means, algorithms and application programs the purpose of solving the assigned tasks;
OPK-7	Able to master tools for working with large arrays structured and unstructured information, use modern digital methods of processing, analysis, interpretation and visualization of data for decision making purposes the set tasks of professional and scientific research activities in the field of agronomy	OPK-7.1 Has a command of tools for working with large arrays of structured and unstructured information; OPK-7.2 Uses modern digital methods processing, analysis, interpretation and visualization of data in order to solve the assigned tasks;
PC-1	Capable of organizing experiments (field trials) to assess efficiency of innovative technologies (elements technologies), varieties and hybrids	PC-1.1 Draws up a research program to study the effectiveness of innovative technologies (elements of technology), varieties and hybrids, develops methods for conducting experiments, masters new methods research;

Cipher	Competence	Indicators of Competence Achievement (within the framework of this discipline)
	in production conditions	
PC-2	Able to develop and implement environmentally friendly techniques and technologies for the production of high-quality plant products taking into account properties of agricultural landscapes and economic efficiency	PC-2.2 Organizes quality control and safety of plant products;
PC-3	Able to determine directions improvement and increase in the efficiency of cultivation technologies plant products based on scientific achievements and best practices domestic and foreign manufacturers	PC-3.2 Carries out operational regulation of the course of production of plant products;
PC-4	Capable of creating models of cultivation technologies agricultural crops, plant protection systems, varieties	PC-4.1 Creates models of cultivation technologies agricultural crops, plant protection systems, varieties;

3. PLACE OF DISCIPLINE IN THE STRUCTURE OF EDUCATIONAL EDUCATION

The discipline “Plant Protection” is a mandatory part of block 1 “Disciplines (modules)” of the higher education educational program.

As part of the higher education program, students also master other disciplines and/or practices that contribute to the achievement of the planned results of mastering the discipline "Plant Protection".

Table 3.1. List of components of the educational program of higher education that contribute to the achievement of the planned results of mastering the discipline

Cipher	Name of competence	Preceding courses/modules, practices*	Subsequent disciplines/modules, practices*
UK-7	Able to search for the necessary sources of information and data, to perceive, analyze, remember and transmit information using digital means, as well as using algorithms when working with data obtained from various sources for the purpose of effective use of the information obtained to solve problems, conduct an assessment of the information, its reliability, build logical	Research work; Information Technology; Pests and Diseases; Soil Fertility Management;	Research work; Undergraduate practice / Pre-graduate practice; Soil Fertility Management;

Cipher	Name of competence	Preceding courses/modules, practices*	Subsequent disciplines/modules, practices*
	conclusions on based on incoming information and data		
OPK-7	Able to master tools for working with large arrays structured and unstructured information, use modern digital processing methods, analysis, interpretation and visualization of data in order to solve the set tasks of professional and researchactivities in the field agronomy	Research work; Technological Training; Information Technology; Pests and Diseases;	Research work; Undergraduate practice / Pre-graduation practice;
PC-1	Able to organize experiments (field trials) assessing the effectiveness of innovations technologies (elements of technology), varieties and hybrids under production conditions	Information Technology; Crop Production; Mechanization of Crop Production; Pests and Diseases; Soil Fertility Management; Research work; Technological Training;	Research work; Undergraduate practice / Pre-graduate practice; Crop Production; Breeding and Seed Production; Soil Fertility Management;
PC-2	Able to develop and implement environmentally friendly production techniques and technologies high quality products crop production taking into account the properties of agricultural landscapes and economic efficiency	Technological Training; Research work; Crop Production; Pests and Diseases;	Crop Production; Breeding and Seed Production; Research work;
PC-3	Able to determine directions improvement and enhancement efficiency technologies for growing products plant growing based on scientific achievements, best practices of domestic and foreign manufacturers	Research work; Technological Training; Crop Production;	Research work; Crop Production; Postharvest Management; Breeding and Seed Production;
PC-4	Capable of creating models of cultivation technologies agriculturalcrops, plant protection systems, varieties	Crop Production; Research work;	Crop Production; Breeding and Seed Production; Research work; Undergraduate practice / Pre-graduation practice;

* - filled in in accordance with the competency matrix and the SUP OP VO

** - elective disciplines/practices

4. SCOPE OF THE DISCIPLINE AND TYPES OF STUDY WORK

The total workload of the “Plant Protection” discipline is 5 credits.

Table 4.1. Types of educational work by periods of mastering the educational program of higher education for full-time education.

Type of academic work	**TOTAL,**ac.h.		**Semester(s)**
			3
Contact work, academic hours	*85*		*85*
Lectures (LC)	34		34
Laboratory work (LW)	0		0
Practical/seminar classes (SZ)	51		51
Independent work of students, academic hours	*77*		*77*
Control (exam/test with assessment), academic hours	*18*		*18*
General complexity of the discipline	**ac.h.**	***180***	*180*
	credit. ed.	***5***	*5*

5. CONTENT OF THE DISCIPLINE

Table 5.1. Contents of the discipline (module) by types of academic work

Section number	Name of the discipline section	Section (Topic) Contents		Type of academic work*
Section 1	Phytopathogeniccomplex on various agricultural crops	1.1	Damage to agricultural crops by a complex of pests and diseases; symptoms of complex damage; sources of primary and secondary infection	LK, SZ
Section 2	Basic methods of plant protection	2.1	Advantages and disadvantages of individual plant protection methods; combination of different protection methods; preventive and extermination events	LK, SZ
Section 3	Agrotechnical method of plant protection	3.1	Advantages and disadvantages of agrotechnical method of protection; the role of crop rotation and soil cultivation in the regulation of phytosanitary conditions crops and plantings	LK, SZ
Section 4	Physical and mechanical methods of plant protection	4.1	Advantages and disadvantages of physical and mechanical methods of protection; the use of various physical factors for disinfection of seed and planting material	LK, SZ
Section 5	Quarantine	5.1	Quarantine as a method of plant protection; quarantine measures, quarantine diseases, pests and weeds; external and internal quarantine measures	LK, SZ
Section 6	Biological method of plant protection	6.1	Advantages and disadvantages of the biological method of protection; the use of natural enemies of phytophages, parasitic and predatory vertebrates, antagonist fungi, hyperparasites	LK, SZ
Section 7	Chemical method of plant protection	7.1	Advantages and disadvantages of chemical protection methods; main groups of chemicals drugs;	LK, SZ
		7.2	Purpose, nature of action, dosage forms, methods of preparation and application working solutions, compatibility of drugs from different groups;	LK, SZ
		7.3	Safety measures when dealing with chemical plant protection products	LK, SZ

* - filled in only for FULL-TIME education: LK – lectures; LR – laboratory work; PZ – practical/seminar classes.

6. LOGISTIC AND TECHNICAL SUPPORT OF DISCIPLINE

Table 6.1. Material and technical support of the discipline

Audience type	Equipping the auditorium	Specialized educational/laboratoryequipment, software and materials for mastering the discipline (if necessary)
Lecture	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical equipment by means of multimedia presentations.	Specialized setfurniture; technical means: multimedia

Audience type	Equipping the auditorium	Specialized educational/laboratoryequipment, software and materials for mastering the discipline (if necessary)
		EPSON EB-965 projector, Laptop, Internet access. Software: Microsoft products (OS, office suite, including MS Office/Office 365, Teams, Skype)
Laboratory	An auditorium for laboratory work, individual consultations, ongoing monitoring and midterm assessment, equipped with a set of specialized furniture and equipment.	"A set of specializedfurniture, binocular microscope medical MIKMED-5, microscopic preparations. Technical means: interactive board
Seminar	An auditorium for conducting seminar-type classes, group and individual consultations, ongoing monitoring and interim certification, equipped with a set of specialized furniture and multimedia equipment presentations.	
For independent work	A classroom for independent work of students (can be used for conducting seminars and consultations), equipped with a set of specialized furniture and computers with access to the Electronic Information System.	

* - the audience for independent work of students MUST be indicated!

7. EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT OF THE DISCIPLINE

Main literature:

1. Integrated plant protection / T. V. Dolzhenko, L. E. Kolesnikov, A. G. Semenova [et al.]. - 3rd ed., reprinted. - St. Petersburg: Lan, 2024. - 120 p. - ISBN 978-5-507-47304-5. — Text: electronic // Lan: electronic library system. — URL: https://e.lanbook.com/book/359825

2. Shternshis, M. V. Biological protection of plants: a textbook for universities / M. V. Shternshis, I. V. Andreeva, O. G. Tomilova. - 7th ed., reprinted - St. Petersburg: Lan, 2024. — 332 p. — ISBN 978-5-507-49266-4. — Text: electronic // Lan: electronic library system. — URL: https://e.lanbook.com/book/384752

Further reading:

1. Zykin, A. V. English language for agricultural universities. Defense and

plant quarantine, entomology, phytopathology / A. V. Zykin, N. G. Kovalenko. - St. Petersburg: Lan, 2023. - 144 p. - ISBN 978-5-507-45410-5. - Text: electronic // Lan: electronic library system. — URL: https://e.lanbook.com/book/302420

2. Biological protection of plants from stress: a textbook for universities / L. Z. Karimova, V. A. Kolesar, R. I. Safin, G. K. Khuzina. - 3rd ed., reprinted - St. Petersburg : Lan, 2024. — 100 p. — ISBN 978-5-507-49137-7. — Text : electronic // Lan : electronic library system. — URL: https://e.lanbook.com/book/379346

Resources of the information and telecommunications network "Internet":

1. RUDN University EBS and third-party EBSs to which university students have access based on concluded agreements

- Electronic library system of RUDN - ELS RUDN http://lib.rudn.ru/MegaPro/Web
- Electronic library system "University library online"http://www.biblioclub.ru
- EBS Yuraithttp://www.biblio-online.ru
- Electronic Library System "Student Consultant"www.studentlibrary.ru
- Electronic library system "Troitsky Bridge"

2. Databases and search engines

- electronic fund 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 mastering the discipline/module:*

1. Lecture course on the subject “Plant Protection”.

* - all educational and methodological materials for independent work of students are posted in accordance with the current procedure on the discipline page in TUIS!

8. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF DEVELOPMENT OF COMPETENCES IN THE DISCIPLINE

Evaluation materials And point-rating system* assessments levelformation of competencies (part of competencies) based on the results of mastering the discipline "Plant Protection» presented V Appendix To real Working program of discipline.

* - OM and BRS are formed on the basis of the requirements of the relevant local regulatory act of RUDN.

DEVELOPER:

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