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**Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University**

Agrarian -Technological Institute

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Plant Quarantine

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 purpose of mastering the discipline "Plant Quarantine" is the formation of ideas, theoretical knowledge, practical skills and abilities:

- to protect the plant resources of Russia and products from importation from foreign countries and the spread of quarantine and other especially dangerous pests;
- on methods of identification and diagnosis of quarantine organisms, technologies of inspection and examination of plant cargoes, survey of plantations, crops and warehouses.

The course considers:

- the main quarantine facilities (pests, diseases and weeds) that, if imported into the country, can significantly affect the yield of crops;
- biology and ecology of quarantine objects;
- methods of detection and identification of quarantine objects;
- basic provisions, concepts, requirements, methods of inspection and examination of quarantine materials;
- the procedure and features of the inspection of various objects and materials.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the discipline "Plant Quarantine" is aimed at the formation of the following competencies (part of the competencies) among students:

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
OPK-1	Able to solve the problems of development of the field of professional activity and (or) organization on the basis of analysis of the achievements of science and production	OPK-1.2. Uses methods of solving problems in the development of agronomy based on the search and analysis of modern achievements of science and production
		OPK-1.3. Applies available technologies, including information and communication technologies, to solve the problems of professional activity in agronomy
OPK-4	Able to conduct research, analyze results and prepare re- porting documents	OPK-4.2. Uses information resources, scientific, experimental and instrumental base for research in agronomy
PK-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign experience in the field of agronomy.	PC-1.1. Carries out a critical analysis of the information received.
PK-2	Able to develop methods of conducting experiments, master new research methods	PK-2.1. Develops methods for conducting experiments

Competence code	Competence descriptor	Competence formation indicators (within this course)
PK-7	Able to carry out phytosanitary control at the state border in order to protect the territory of the Russian Federation from the penetration of quarantine and other dangerous pathogens and plant pests, weeds	PK-7.1. Recognizes quarantine objects and identifies quarantine pests and pathogens
		PK-7.2. Conducts examination of crops and crop products for the presence of quarantine facilities

3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

Mastering the discipline "Plant Quarantine" is aimed at forming the following competencies (part of the competencies) among students:

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*
OPK-1	Able to solve the problems of development of the field of professional activity and (or) organization on the basis of analysis of the achievements of science and production	Biological Method of Plant Protection; Instrumental methods of research; Mathematical Modeling and Design; Bacterial Diseases; Virology; Organization of Integrated Plant Protection Systems; Information Technology; Scientific research work / Научно-исследовательская работа; Research Practice;	
OPK-4	Able to conduct research, analyze results and prepare reporting documents	Scientific research work / Научно-исследовательская работа; Research Practice; Instrumental methods of research; Mathematical Modeling and Design; Bacterial Diseases; Virology; Biological Method of Plant Protection;	

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
		Organization of Integrated Plant Protection Systems;	
PK-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign experience in the field of agronomy.	Scientific research work / Научно-исследовательская работа; Research Practice; Pest Risk Analysis; Forecast of Development of Agricultural Pests and Diseases; Organization of Integrated Plant Protection Systems; History and methodology of scientific Agronomy; Information Technology;	
PK-2	Able to develop methods of conducting experiments, master new research methods	Scientific research work / Научно-исследовательская работа; Research Practice; Molecular Methods of Diagnostics; Biological Method of Plant Protection; Organization of Integrated Plant Protection Systems; Plant Protection in Organic Farming; Instrumental methods of research;	
PK-7	Able to carry out phytosanitary control at the state border in order to protect the territory of the Russian Federation from the penetration of quarantine and other dangerous pathogens and plant pests, weeds	Nematodes; Molecular Methods of Diagnostics; Bacterial Diseases; Virology;	

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

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

Possible wording

The total labor intensity of the discipline "Plant Quarantine" is 4 credits for full-time education.

Table 4.1 – Types of educational work by periods of mastering the OP HE for full-time education

Type of academic activities		Total academic hours	Semesters/training modules			
			1	2	3	4
<i>Contact academic hours</i>		55				55
including:						
Lectures (LC)		22				22
Lab work (LW)						
Seminars (workshops/tutorials) (S)		33				33
<i>Self-studies</i>		80				80
<i>Evaluation and assessment (exam/passing/failing grade)</i>		9				9
Course workload	academic hours_	144				144
	credits	4				4

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 subject and objectives of plant quarantine	Topic 1.1. The subject and objectives of plant quarantine, its relationship with other agronomic and biological sciences. A historical overview of the development of plant quarantine. External and internal quarantine	LC; S
Module 2: Pests, pathogens and weeds, weeds of quarantine importance for the Russian Federation.	Topic 2.1. Pests of quarantine importance for the Russian Federation.	LC; S
	Topic 2.2. Pathogens of quarantine importance for the Russian Federation	LC; S
	Topic 2.3. Weeds, weeds of quarantine importance for the Russian Federation.	LC; S
Module 3: Pests, pathogens and weeds not registered in the territory of the Russian Federation	Topic 3.1. Pests not registered in the territory of the Russian Federation	LC; S
	Topic 3.2 Pathogens not registered in the territory of the Russian Federation	LC; S
	Topic 3.3 Weeds not registered in the territory of the Russian Federation	LC; S
Module 4: Methods of identification, localization and elimination of quarantine objects	Topic 4.1. Methods of detection and diagnosis of quarantine pests, pathogens and weeds	LC; S
	Topic 4.2. Methods of localization and elimination of quarantine facilities	LC; S

* - 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 hall	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a blackboard (screen) and multimedia presentation equipment.	
Seminary	An auditorium for seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification, equipped with a set of specialized furniture and multimedia presentation equipment.	
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. Plant pathology & diseases URI <https://directory.doabooks.org/handle/20.500.12854/67434> DOI 10.5772/intechopen.80762 Webshop link <https://www.intechopen.com/books> ISBN 9781789851168, 9781789851151, 9781789846980 Publisher IntechOpen Publisher website <https://www.intechopen.com/> Publication date and place 2020 Imprint IntechOpen Classification Plant reproduction & propagation Pages 24

2. Quarantine of plants: a course of lectures : a textbook / compiled by O. B. Kotelnikova. Kursk : Kursk State Agrarian University, 2022. 59 p. — Text : electronic // Lan : electronic library system. — URL: <https://e.lanbook.com/book/214751>

Additional readings:

1. Zykin, A.V. English for agricultural universities. Plant protection and 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. Integrated plant protection / T. V. Dolzhenko, L. E. Kolesnikov, A. G. Semenova [et al.]. — 3rd ed., ster. — 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>

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/>

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 *:*

The set of lectures on the course «Plant Quarantine»

* 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:

position, department	name and surname
position, department	name and surname
position, department	name and surname

HEAD OF EDUCATIONAL DEPARTMENT:

name of department	name and surname
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HEAD OF HIGHER EDUCATION PROGRAMME:

position, department	name and surname
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