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**Federal State Autonomous Educational Institution of Higher Education
Peoples' Friendship University of Russia named after Patrice Lumumba
RUDN University**

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

INTERNSHIP SYLLABUS

UNDERGRADUATE PRACTICE

internship title

INDUSTRIAL

internship type

Recommended by the Didactic Council for the Education Field of:

35.04.04 AGRONOMY

field of studies / speciality code and title

The student's internship is implemented within the professional education programme of higher education:

INTEGRATED PLANT PROTECTION

higher education programme profile/specialisation title

1. INTERNSHIP GOAL(s)

"Undergraduate practice/Pre-diploma practice" is part of the Master's program "Integrated Plant Protection" under the field of study 35.04.04 "Agronomy" and is conducted in the 4th semester of the 2nd year. The internship is delivered by the Agrobiotechnology Department.

The goal of the "Pre-diploma practice" is: conducting preparatory work for the defense of the Master's thesis.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The "Pre-diploma practice" is aimed at developing the following competencies (parts of competencies) in students:

Table 2.1. List of competences that students acquire during the internship

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-1.1 Performs search for necessary information, its critical analysis and generalizes the results of the analysis to solve the assigned task; 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-2	Able to manage a project at all stages of its life cycle	GC-2.1 Develops a project concept within the defined problem, formulating the goal, objectives, relevance, significance (scientific, practical, methodological, etc., depending on the project type), expected results and possible areas of their application; GC-2.2 Forms a schedule for the implementation of the project as a whole and a plan for monitoring its execution, organizes and coordinates the work of project participants; GC-2.3 Proposes possible ways (algorithms) for implementing the project results into practice (or implements it);
GC-4	Able to apply modern communicative technologies in the state language of the Russian Federation and foreign language(s) for academic and professional interaction	GC-4.2 Presents the results of academic and professional activities at various scientific events, including international ones; GC-4.3 Demonstrates integrative skills necessary for effective participation in academic and professional discussions;
GPC-4	Able to conduct scientific research, analyze results and prepare reporting documents	GPC-4.3 Formulates the results obtained during the solution of research problems;
PC-1	Able to collect, process, analyze and systematize	PC-1.1 Performs critical analysis of the information received;

Competence code	Competence descriptor	Competence formation indicators (within this course)
	scientific and technical information, domestic and foreign experience in the field of agronomy	PC-1.2 Conducts information search on improving technologies for growing and protecting crops, including using the Internet;
PC-5	Able to prepare scientific and technical reports, reviews and scientific publications based on the results of conducted research	PC-5.2 Uses methods of mathematical statistics when processing data and preparing a report; PC-5.3 Able to properly organize obtained research results in articles, textbooks and monographs;

3. INTERNSHIP IN HIGHER EDUCATION PROGRAMME STRUCTURE

"Undergraduate practice/Pre-diploma practice" belongs to the core component of Block 1 "Disciplines (modules)" of the higher education programme curriculum.

Within the higher education programme, students also master other disciplines and/or internships that contribute to the achievement of the expected learning outcomes as results of the internship.

Table 3.1. The list of the higher education programme components that contribute to the achievement of the expected learning outcomes as the internship results.

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
GC-1	Able to carry out critical analysis of problem situations based on a systematic approach, develop an action strategy	Russian as a Foreign Language; Russian Language for Foreign Students; Fundamentals of Scientific Communication**;	
GC-2	Able to manage a project at all stages of its life cycle	Scientific research work; Scientific and Research Practice; Plant Protection in Organic Farming**; Biotechnology in Plant Protection; Organization of Integrated Plant Protection Systems;	
GC-4	Able to apply modern communicative technologies in the state language of the Russian Federation and foreign language(s) for academic and professional interaction	Manuscript Design**; Organization of Integrated Plant Protection Systems; Information Technology; Pest Risk Analysis**; Forecast of Development of Agricultural Pests and Diseases**; Scientific research work; Scientific and Research Practice; Instrumental methods of research; History and	

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
		methodology of scientific Agronomy; Plant immunity; Biotechnology in Plant Protection;	
GPC-4	Able to conduct scientific research, analyze results and prepare reporting documents	Scientific research work; Scientific and Research Practice; Instrumental methods of research; Mathematical Modeling and Design; Plant Quarantine; Biotechnology in Plant Protection; Bacterial Diseases; Virology; Biological Method of Plant Protection; Organization of Integrated Plant Protection Systems; Plant immunity;	
PC-1	Able to collect, process, analyze and systematize scientific and technical information, domestic and foreign experience in the field of agronomy	Scientific research work; Scientific and Research Practice; Information Technology; Pest Risk Analysis**; Forecast of Development of Agricultural Pests and Diseases**; Plant Quarantine; Biotechnology in Plant Protection; Organization of Integrated Plant Protection Systems; Plant immunity; History and methodology of scientific Agronomy;	
PC-5	Able to prepare scientific and technical reports, reviews and scientific publications based on the results of conducted research	Molecular Methods of Diagnostics**; History and methodology of scientific Agronomy; Scientific research work; Scientific and Research Practice; Mathematical Modeling and Design; Fundamentals of Scientific Communication**; Manuscript Design**;	

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

** – elective disciplines/practices

4. INTERNSHIP WORKLOAD

The total workload of the "Pre-diploma practice" is 6 credit units (216 academic hours).

5. INTERNSHIP CONTENTS

*Table 5.1. Internship contents**

Modules	Contents (topics, types of practical activities)	Workload, academic hours
Module 1. Safety briefing. Goals, objectives and program of the internship	Topic 1.1. Work at the enterprise, in the laboratory, at the bases for thesis work	48
Module 2. Work with literature and normative documents	Topic 2.1. Conducting scientific research in field conditions under the supervision of the internship curator	50
Module 3. Processing and statistical analysis of obtained data	Topic 3.1. Analysis of obtained data under the supervision of the internship curator	50
Module 4. Systematization of obtained results	Topic 4.1. Work with statistical software	50
Writing an internship report		9
Preparing for defence and defending the internship report		9
TOTAL:		216

* The contents of internship through modules and types of practical activities shall be FULLY reflected in the student's internship report.

6. INTERNSHIP EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Material and technical support for the internship complies with the requirements of the Rector of RUDN Order No. 397-r dated April 9, 2021 "On Approval and Implementation of the Regulation for Ensuring Occupational Health and Fire Safety during Internships" and RUDN Instruction IOT No. 712-21 dated May 17, 2021 "On Occupational Health and Fire Safety during Educational and Industrial (including pre-diploma and research) internships implemented at the Agrarian and Technological Institute":

- Equipped workplaces at the internship base.

7. INTERNSHIP LOCATION AND TIMELINE

The internship can be conducted at the structural divisions of RUDN University or at organizations in Moscow (stationary), as well as at bases located outside Moscow (field/travel).

The internship at an external organization (outside RUDN University) is carried out on the basis of an appropriate agreement, which specifies the deadlines, location and conditions for conducting the internship at the host organization.

The period of the internship corresponds to the period indicated in the academic calendar of the higher education programme. The deadlines for the internship may be adjusted upon agreement with the Department of Educational Policy and the Department for the Organization of Internships and Employment Support for RUDN graduates.

8. RESOURCES RECOMMENDED FOR INTERNSHIP

Main readings:

1. Sokolskaya, O.B. Landscape Architecture: Specialized Facilities. Moscow: Academy, 2008. – 224 p.
2. Theodoronsky, V.S. Landscape Architecture. A textbook for universities / V.S. Theodoronsky, I.O. Bogovaya. – Moscow: Forum Publishing, 2010. – 287 p.
3. Theodoronsky. Garden and Park Construction and Management. Moscow: Academy, 2010. – 288 p.
4. Theodoronsky V.S., Fatiyev M.M. Construction and Operation of Urban Greening Facilities // textbook. Moscow: Forum, 2011. – 237 p.
5. Vasenev V.I., Epikhina A.S. Urban ecology. RUDN University. 2017.
6. Alberti M. Advances in Urban Ecology: Integrating Humans and Ecological Processes in Urban Ecosystems. Springer; 2008.
7. R.T.T. Forman. Urban Ecology: Science of Cities. Cambridge University Press, 2014.
8. J. Niemela, J. H. Breuste, G. Guntenspergen. Urban Ecology: Patterns, Processes, and Applications. Oxford University Press; Reprint edition. 2012.

Additional readings:

1. Dolgikh, A.V., Aleksandrovskii, A.L., 2010. Soils and cultural layers in velikii Novgorod. *Eurasian Soil Science*, 43, 477–48.
2. Kaye, J.P., McCulley, R.L., Burkez, I.C., 2005. Carbon fluxes, nitrogen cycling, and soil microbial communities in adjacent urban, native and agricultural ecosystems. *Global Change Biology* 11, 575-587.
3. Lorenz, K., Lal, R., 2009. Biogeochemical C and N cycles in urban soils. *Environment International* 35, 1–8.
4. *Protection of Agricultural Production in Emergency Situations: a textbook* / V. G. Plyushchikov, E. A. Dovletyarova; Ministry of Agriculture of the Russian Federation, Federal Agency for Education, Federal State Educational Institution of Higher Professional Education Russian State Agrarian University-Moscow Timiryazev Agricultural Academy (FGOU VPO RSAU-MTAA named after K. A. Timiryazev), 2005. – 110 p.

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): <https://mega.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 "Znanium": <https://znanium.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>
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The training toolkit and guidelines for a student to do an internship, keep an internship diary and write an internship report:*

1. Safety regulations to do the internship (safety awareness briefing).
2. Machinery and principles of operation of technological production equipment used by students during their internship; process flow charts, regulations, etc. (if necessary).
3. Guidelines for keeping an internship diary and writing an internship report.

*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.

DEVELOPERS:

Director of the

Agrobiotechnology Department

position, educational department

signature

Pakina E.N.

name and surname.

HEAD OF EDUCATIONAL DEPARTMENT:

Director of the

Agrobiotechnology Department

educational department

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HEAD OF HIGHER EDUCATION PROGRAMME:

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