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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:

GENERAL AGRONOMY

higher education programme profile/specialisation title

1. INTERNSHIP GOAL(s)

"Undergraduate practice/Pre-diploma practice" is part of the Master's program "General Agronomy" 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-4.1 Demonstrates integrative skills necessary for writing, translating and editing various academic texts (abstracts, essays, reviews, articles, etc.); GC-4.3 Demonstrates integrative skills necessary for effective participation in academic and professional discussions;
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;

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-7	Able to search for necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the received information to solve problems, evaluate information, its reliability, build logical conclusions based on incoming information and data	GC-7.1 Evaluates information, its reliability, builds logical conclusions based on incoming information and data; GC-7.2 Has practical experience in searching, perceiving, storing, analyzing, transmitting information and data using digital means, algorithms and application programs in order to solve assigned tasks;
GPC-1	Able to solve problems of development of the field of professional activity and/or organization based on the analysis of scientific and production achievements	GPC-1.1 Demonstrates knowledge of the main methods of analysis of scientific and production achievements in agronomy; GPC-1.2 Uses methods for solving problems of agronomy development based on search and analysis of modern scientific and production achievements; GPC-1.3 Applies available technologies, including information and communication technologies, to solve professional tasks in agronomy;
GPC-3	Able to use modern methods of solving problems when developing new technologies in professional activities	GPC-3.1 Analyzes methods and ways of solving problems related to the development of new technologies in agronomy; GPC-3.2 Uses information resources, achievements of science and practice when developing new technologies in agronomy;
GPC-4	Able to conduct scientific research, analyze results and prepare reporting documents	GPC-4.1 Analyzes methods and ways of solving research problems; GPC-4.2 Uses information resources, scientific, experimental and instrumental base for conducting research in agronomy; GPC-4.3 Formulates the results obtained during the solution of research problems;
GPC-7	Able to master the tools for working with large arrays of structured and unstructured information, use modern digital methods of processing, analysis, interpretation and visualization of data in order to solve assigned tasks of professional and research activities in the field of agronomy	GPC-7.1 Masters the tools for working with large arrays of structured and unstructured information; GPC-7.2 Uses modern digital methods of processing, analysis, interpretation and visualization of data in order to solve assigned tasks;

Competence code	Competence descriptor	Competence formation indicators (within this course)
PC-1	Able to organize and conduct experiments (field trials) to assess the effectiveness of innovative technologies (technology elements), varieties and hybrids under production conditions	PC-1.1 Develops a research program to study the effectiveness of innovative technologies (technology elements), varieties and hybrids, develops methodologies for conducting experiments, masters new research methods;
PC-4	Able to create models of crop cultivation technologies, plant protection systems, and varieties	PC-4.1 Creates models of crop cultivation technologies, plant protection systems, varieties;

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 (modules) 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	Information Technology; Scientific research work; Plant Protection; Pests and Diseases; Information Databases; Soil Fertility Management;	
GC-2	Able to manage a project at all stages of its life cycle	Scientific research work; Russian as a Foreign Language; Russian Language for Foreign Students;	
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	Technological Training; Mechanization of Crop Production; Soil Fertility Management; Management**; Marketing**;	
GC-6	Able to determine and implement priorities of own activity and ways of its improvement	Information Technology; Technological Training; Pests and Diseases; Soil Fertility Management;	

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
	based on self-assessment	Scientific research work; Postharvest Management; Crop Production; Management**; Marketing**;	
GC-7	Able to search for necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the received information to solve problems, evaluate information, its reliability, build logical conclusions based on incoming information and data	Technological Training;	
GPC-1	Able to solve problems of development of the field of professional activity and/or organization based on the analysis of scientific and production achievements	Crop Production; Scientific research work; Postharvest Management; Soil Fertility Management; Technological Training; Pests and Diseases; Information Technology;	
GPC-3	Able to use modern methods of solving problems when developing new technologies in professional activities	Technological Training; Soil Fertility Management; Information Technology;	
GPC-4	Able to conduct scientific research, analyze results and prepare reporting documents	Scientific research work; Breeding and Seed Production;	
GPC-7	Able to master the tools for working with large arrays of structured and unstructured information, use	Information Technology; Scientific research work; Technological Training; Plant Protection; Pests and Diseases;	

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
	modern digital methods of processing, analysis, interpretation and visualization of data in order to solve assigned tasks of professional and research activities in the field of agronomy		
PC-1	Able to organize and conduct experiments (field trials) to assess the effectiveness of innovative technologies (technology elements), varieties and hybrids under production conditions	Scientific research work; Technological Training; Information Technology; Crop Production; Mechanization of Crop Production; Pests and Diseases; Breeding and Seed Production; Plant Protection; Soil Fertility Management;	
PC-4	Able to create models of crop cultivation technologies, plant protection systems, and varieties	Scientific research work; Crop Production; Breeding and Seed Production; Plant Protection;	

* 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

Modules	Contents (topics, types of practical activities)	Workload, academic hours
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 "Znaniium": <https://znaniium.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 for the internship "Undergraduate practice/Pre-diploma practice" (initial briefing).
2. General structure and operating principles of technological production equipment used by students during the internship; technological maps and regulations, etc. (if necessary).
3. Guidelines for students on filling out the internship diary and writing the internship report "Undergraduate practice/Pre-diploma practice".

*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

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**HEAD OF
HIGHER EDUCATION PROGRAMME:**

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