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

Agrarian and Technological Institute
educational division (faculty/institute/academy) as higher education programme developer

INTERNSHIP SYLLABUS

Undergraduate practice
internship title

Industrial practice
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. RESEARCH PRACTICE GOAL(s)

The goal of the «Undergraduate practice» is to prepare the student for independent research work, the result of which is writing and successful defense of the final qualifying work, securing existing and acquiring new knowledge and skills that form the competences provided of RUDN University.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The «Undergraduate practice» is aimed at the formation of the following competencies among students:

Table 2.1 – List of competencies formed by students during the internship (learning outcomes based on the results of practice)

Code and descriptor of generic competence	Code and competence level indicator
GC-1 Able to search, critical analysis of problem situations based on a systematic approach, develop an action strategy	GC-1.1. Performs the search for the necessary information, its critical analysis and summarizes the results of the analysis to solve the problem; 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 activity and on the relationship between the participants in this activity.
GC-2 Able to manage a project at all stages of its life cycle	GC-2.1. Develops the concept of the project within the framework of the identified problem, formulating the goal, objectives, relevance, significance (scientific, practical, methodological and other depending on the type of project), 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 implementation, organizes and coordinates the work of project participants; GC-1.3. Suggests possible ways (algorithms) for putting the results of the project into practice (or implements it).
GC-3 Able to organize and manage the work of the team, developing a team strategy to achieve the goal	GC-3.1 Develops a cooperation strategy and, on its basis, organizes the work of the team to achieve the goal; GC-3.2 Plans team work, distributes tasks and delegates authority to team members, organizes discussion of different ideas and opinions
GC-4 Able to use modern communication technologies in the state language of the Russian Federation and foreign language(s) for academic and professional interaction	GC-4.1 Demonstrates the integrative skills required for writing, translating and editing various academic texts (abstracts, essays, reviews, articles, etc.); GC-4.2 Presents the results of academic and professional activities at various scientific events, including international ones; GC-4.3 Demonstrates the integrative skills necessary to participate effectively in academic and professional discussions
GC-5 Able to analyze and take into account the diversity of cultures in the process of intercultural interaction	GC-5.1 Demonstrates understanding of the characteristics of different cultures and nations;

Code and descriptor of generic competence	Code and competence level indicator
	GC-5.2 Builds social interaction, taking into account the common and special of different cultures and religions.
GC-6 Able to identify and implement the priorities of their own activities and ways to improve it based on self-assessment	GC-6.1 Evaluates his resources and their limits (personal, situational, temporary), uses them optimally for the successful completion of the assigned task; GC-6.2 Plans a professional trajectory, taking into account the characteristics of both professional and other types of activity and the requirements of the labor market.
GC-7 Able to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data received from various sources in order to effectively use the information received 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 tools, algorithms and application programs in order to solve the tasks.
GPC-1 Able to solve the problems of developing the field of professional activity and (or) organization based on the analysis of the achievements of science and production	GPC-1.1 Demonstrates knowledge of the main methods for analyzing the achievements of science and production in agronomy; GPC-1.2 Uses methods for solving problems of the development of agronomy based on the search and analysis of modern achievements in science and production; GPC-1.3 Uses available technologies, including information and communication, to solve the problems of professional activities in agronomy.
GPC-2 Able to transfer professional knowledge, taking into account pedagogical method	GPC-2.1 Knows modern educational technologies of vocational 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 products.
GPC-3 Able to use modern methods of solving problems in the development of new technologies in professional activities	GPC-3.1 Analyzes methods and methods for solving problems of developing new technologies in agronomy; GPC-3.2 Uses information resources, achievements of science and practice in the development of new technologies in agronomy.
GPC-4 Capable of conducting scientific research, analyzing results and preparing reports	GPC-4.1 Analyzes methods and methods for solving research problems; GPC-4.2 Uses information resources, scientific, experimental and instrumental base for research in agronomy; GPC-4.3 Formulates the results obtained in the course of solving research problems.
GPC-5 Able to carry out a feasibility study of projects in professional activities	GPC-5.1 Owns methods of economic analysis and accounting for project indicators in agronomy; GPC-5.2 Analyzes the main production and economic indicators of the project in agronomy;

Code and descriptor of generic competence	Code and competence level indicator
	GPC-5.3 Develops proposals to improve project efficiency in agronomy.
GPC-6 Able to manage teams and organize production processes	GPC-6.1 Able to work with information systems and databases on personnel management issues; GPC-6.2 Defines the tasks of the personnel of the structural unit, based on the goals and strategy of the organization; GPC-6.3 Applies methods of managing interpersonal relationships, building teams, developing leadership and performance, identifying talents, measuring job satisfaction.
GPC-7 Able to use tools for working with large arrays of structured and unstructured information, use modern digital methods for processing, analyzing, interpreting and visualizing data in order to solve the tasks of professional and research activities in the field of agronomy	GPC-7.1 Owns tools for working with large arrays of structured and unstructured information; GPC-7.2 Uses modern digital methods for processing, analyzing, interpreting and visualizing data in order to solve the assigned tasks.
PC-1 Capable of collecting, processing, analyzing and systematizing 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 PC-1.2 Conducts information retrieval on improving technologies for growing and protecting crops, including using the Internet
PC-2 Able to develop methods for conducting experiments, master new research methods	PC-2.1 Develops methods for conducting experiments PC-2.2 Applies modern types and methods of conducting observations and records in field experiments
PC-3 Able to organize, conduct and analyze the results of experiments (field experiments)	PC-3.1 Owns modern methods of processing research results using methods of mathematical statistics PC-3.2 Organizes field experiments to assess the effectiveness of innovative technologies in production conditions
PC-4 Able to create models of crop cultivation technologies, plant protection systems, varieties	PC-4.1 Applies modern methods of mathematical statistics to build models of various crop cultivation technologies, plant protection systems, varieties PC-4.2 Is able to highlight the main and secondary components of models in order to accelerate their development PC-4.3 Carries out the creation of plant protection systems for specific production conditions PC-4.4 Has the skills to organize plant protection work adapted to the soil and climatic conditions of the region PC-4.5 Works to protect plants from harmful objects PC-4.6 Develops and improves measures to protect plants from harmful objects
PC-5 Able to prepare scientific and technical reports, reviews and scientific publications based on the results of research	PC-5.1 Draws up a research program to study the effectiveness of agricultural practices PC-5.2 Uses the methods of mathematical statistics when processing data and preparing a report PC-5.3 Knows how to correctly compose the results of research in articles, textbooks and monographs

Code and descriptor of generic competence	Code and competence level indicator
PC-6 Able to prepare conclusions on the feasibility of introducing the studied methods, varieties and hybrids of agricultural crops into production based on the analysis of experimental data	PC-6.1 Able to work with information systems and databases on the management of agricultural production PC-6.2 Is able to argue the need to use plant protection technologies for the accelerated development of agricultural enterprises
PC-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 pests of plants, weeds	PC-7.1 Recognizes quarantine objects and identifies quarantine pests and pathogens PC-7.2 Conducts an examination of crops and crop products for the presence of quarantine objects

3. INTERNSHIP IN HIGHER EDUCATION PROGRAMME STRUCTURE

The «Undergraduate practice belongs to the part formed by the participants of educational relations. Within the framework of the practice, students also master other disciplines and/or practices that contribute to achieve the planned results of mastering the «Undergraduate practice».

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 search, critical analysis of problem situations based on a systematic approach, develop an action strategy		
GC-2	Able to manage a project at all stages of its life cycle		
GC-3	Able to organize and manage the work of the team, developing a team strategy to achieve the goal		
GC-4	Able to use modern communication technologies in the state language of the Russian Federation and foreign language(s) for academic and professional interaction		
GC-5	Able to analyze and take into account the diversity of cultures in the process of intercultural interaction		
GC-6	Able to identify and implement the priorities of their own activities and ways to improve it based on self-assessment		
GC-7	Able to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data received from various sources in order to effectively use the information		

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
	received to solve problems, evaluate information, its reliability, build logical conclusions based on incoming information and data		
GPC-1	Able to solve the problems of developing the field of professional activity and (or) organization based on the analysis of the achievements of science and production		
GPC-2	Able to transfer professional knowledge, taking into account pedagogical method		
GPC-3	Able to use modern methods of solving problems in the development of new technologies in professional activities		
GPC-4	Capable of conducting scientific research, analyzing results and preparing reports		
GPC-5	Able to carry out a feasibility study of projects in professional activities		
GPC-6	Able to manage teams and organize production processes		
GPC-7	Able to use tools for working with large arrays of structured and unstructured information, use modern digital methods for processing, analyzing, interpreting and visualizing data in order to solve the tasks of professional and research activities in the field of agronomy		
PC-1	Capable of collecting, processing, analyzing and systematizing scientific and technical information, domestic and foreign experience in the field of agronomy		
PC-2	Able to develop methods for conducting experiments, master new research methods		
PC-3	Able to organize, conduct and analyze the results of experiments (field experiments)		
PC-4	Able to create models of crop cultivation technologies, plant protection systems, varieties		
PC-5	Able to prepare scientific and technical reports, reviews and scientific publications based on the results of research		
PC-6	Able to prepare conclusions on the feasibility of introducing the studied methods, varieties and hybrids of		

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
	agricultural crops into production based on the analysis of experimental data		
PC-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 pests of plants, weeds		

* - filled in in accordance with the matrix of competencies and SC EP HE

4. INTERNSHIP WORKLOAD

The total workload of the internship is 6 ECTS (216 academic hours).

5. INTERNSHIP CONTENTS

Table 5.1. Internship contents

Modules	Contents (topics, types of practical activities)	Workload, academic hours
Module 1. Preparatory stage	Analysis of literary sources, results of economic activity of the enterprise	60
	Processing and analysis of the received data	60
	Completion of the final qualifying work	60
Module 2. Practical stage	Drawing conclusions and conclusions - preliminary protection of the final qualifying work	36
	TOTAL:	**216**

6. INTERNSHIP EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

1. Classrooms equipped with multimedia projectors.

2. Computer classes at ATI, the RUDN University Information Library Center with access to the RUDN University electronic library system and the Internet.

3.Educational and scientific laboratories equipped with devices for conducting practical exercises

7. INTERNSHIP LOCATION AND TIMELINE

«Undergraduate practice» can be carried out both in the structural divisions of RUDN University or in organizations of Moscow (stationary), and at bases located outside of Moscow.

Conducting an internship on the basis of an external organization (outside the RUDN University) is carried out on the basis of an appropriate agreement, which specifies the terms, place and conditions for conducting an internship in the base organization.

The terms of the practice correspond to the period specified in the calendar training schedule of the EP HE. The terms of the practice can be adjusted upon agreement with the Department of

Educational Policy and the Department for the organization of internships and employment of students at RUDN University.

8. RESOURCES RECOMMENDED FOR INTERNSHIP

Main readings:

1. Бей-Биенко Г.Я. Общая энтомология: Учебник-Спб : «Проспект науки»,- 2008.- 486
2. Защита растений от вредителей/ Под ред. Н. Н. Третьякова, В. В. Исаичева. Санкт-Петербург. -М. - Краснодар. - 2012.- 528с.
3. Карантин растений / Под ред. А.С.Васютина М., 2002 - 536с.
4. Перечень вредителей, возбудителей болезней растений, сорняков, имеющих карантинное значение для РФ.МСХ, 2003. -6с.
5. Биология карантинных вредных организмов (сорняки, вредители и болезни) [Электронный ресурс]: курс лекций / сост. О. Б. Котельникова. -Курск: изд-во КГСХА, 2008. -160с.
6. Фитосанитарный контроль и надзор в Орловской и Курской областях/ Под общ. ред. Е. Н. Дубровина. –Орел: ООО ПФ «Оперативная полиграфия», 2008.- 461с.

Additional readings:

1.Александров, И.Н. Диплодиоз кукурузы/И.Н.Александров, И.П.Дудченко //Защита и карантин растений.-2002.-№ 1.-С.24.

2.Баранчиков, Ю.Н. Комплексный мониторинг популяции сибирского шелкопряда/Ю.Н.Баранчиков,Ю.П.Кондаков, В.М.Петько//Защита и карантин растений.-2006.-№5ю-С.39.

3. Васютин, А.С. Карантин растений в Российской Федерации/А.С.Васютин,А.И.Сметник, Я.Б.Мордкович и др..- М.: Колос, 2001- 375 с

4.Вредные организмы, имеющие карантинное значение для Европы. Пер. с англ. - М.: Колос, 1996 - 912 с.

5. Васютин, А.С. Испытание почвоотборников в очагах картофельной глободеры/А.С.Васютин//Защита и карантин растений.-2003.-№8.-С.32.

6.Варшалович, А.А. Карантинные и другие виды жуков-вредителей промышленного сырья и продовольственных запасов/А.А.Варшалович.- М.: Колос,1975.- 275с.

7.Выявление капрового жука в складских помещениях /Я.Б.Мордкович, Е.А.Соколов//Защита и карантин растений.-2000.-№ 12.-С.26.

8.Дулова, Е.В.Карантинные минеры/Е.В.Дулова//Защита и карантин растений.-2005.-№5.-С.34.

9.Другова, Е.В. Особенности фитосанитарного контроля за вредителями тепличных культур/ Е.В.Другова, В.А.Нестеров// Защита и карантин растений.-2004.-№2.-С.44

10.Заполовский, С.А. Амброзия полыннолистная в Житомирской области/С.А.Заполовский,А.А.Дерега//Защита и карантин растений.-2004.-№11.-С.38.

11.Загуляев, А.К. Моли и огневки - вредители зерна и продовольствен¬ ных запасов/А.К.Загуляев.- М.-Л.: Наука, 1965.-167с.

12.Закладной ,Г.А., Ратанова В.Ф. Вредители хлебных запасов и меры борьбы с ними/ Г.А., Закладной , Ратанова В.Ф. - М.: Колос, 1973.-250с.

13. Защита растений от болезней / В.А.Шкаликов, О.О.Белошапкина, Д.Д.Букреев и др.-М.: Колос, 2001.-248с.

14. Ивапнова, Н.А. Карантинные болезни винограда // Защита и карантин растений.-2009.-№2.-С.40.

15. Ижевский, С. С. Интродукция и применение энтомофагов/С.С.Ижевский. — М.: Агропромиз¬дат, 1990. - 223 с.

16. Исаичев, В.В.. Защита растений/. В.В. Исаичев, И.В. Горбачев и др.- М.: Колос.-2002.-

17.Карантинное и фитосанитарное состояние государств - участников СНГ и государства Балтии на 01.01.2000 г. - М.: 2000. - 267 с.

18.Карачаева Е.И. Черный сосновый усач //Защита и карантин растений.-2011.-№8.-С.37.

19.Квашнина, Н.А.Мониторинг очагов бактериального ожога плодовых культур на юге России// Защита и карантин растений.-2010.-№6.-С.40.

20.Кулешова, Ю.Г. Вирус шарки слив на территории на территории РФ //Защита и карантин растений.-2010.-№10.-С.35.

21.Кулинич, О.А.Сосновая стволовая нематода // // Защита и карантин растений.- 2010.-№7.-С.36.

22.Мордкович, Я.Б. Проблемы общие, а решать их надо вместе ////Защита и карантин растений.-2010.-№4.-С.34.

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/
- Google search engine https://www.google.ru/
- Scopus abstract database http://www.elsevierscience.ru/products/scopus/

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.

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL AS INTERNSHIP RESULTS

Evaluation materials and a point-rating system* for assessing the level of competence formation (part of competencies) based on the results of mastering the «Undergraduate practice» are presented in the Appendix to this Work Program of the practiceю

* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).