

**Federal State Autonomous Educational Institution for Higher Education  
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA  
NAMED AFTER PATRICE LUMUMBA  
(RUDN University)**

**Academy of Engineering**

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(name of the educational division - developer of the HEP HE)

**INTERNSHIP SYLLABUS**

**Introductory Practical Training**

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(internship title)

**Educational**

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(internship type)

**Recommended by the Didactic Council for the Education Field of:**

**05.04.01 Geology**

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(code and name of the Higher Education Field)

**The student's internship is implemented within the Higher Education Programme of Higher Education (HEP HE):**

**Mining Geology**

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(name (profile/specialization) of the Higher Education Program)

## 1. INTERNSHIP AIM

The goal of the Internship «Introductory Practical Training» is the consolidation of theoretical knowledge gained in the learning process, the acquisition of practical skills and the formation of professional competencies in the field of geology, geophysics and hydrogeology of ore deposits.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

The internship «Introductory Practical Training» is aimed at the formation of the following competencies (parts of competencies) of students:

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

Code	Competence	Competence achievement indicators (within this practice)
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 Controls the amount of time spent on specific activities
		GC-6.2. develops time management tools and methods for accomplishing specific tasks, projects, and goals
		GC-6.3 Analyze one's resources and their limits (personal, situational, time, etc.) to successfully complete the assigned task
PC-2	Capable of justifying the need, choosing the best methodology, planning, implementing, interpreting results, and supervising geophysical work at various stages of mineral site development	PC-2.2 Know how to select the best methodology, design, implement, interpret the results of geophysical works
		PC-2.3 Know how to justify and select optimal methodology, manage geophysical work at different stages of subsoil area development
PC-4	Capable of designing, assisting with, and supervising a geologic study of a subsoil area at various stages of development	PC-4.2 Be able to apply methodological solutions in the design and implementation of the geological study of a subsoil area at various stages of its development
		PC-4.3 Be able to apply the acquired knowledge and skills in the design, support and management of the geological study of a subsoil area at various stages of its development

## 3. INTERNSHIP IN HIGHER EDUCATION PROGRAMME STRUCTURE

«Introductory Practical Training» is a compulsory part.

As part of the HEP HE, students also master disciplines and/or other practices that contribute to the achievement of the planned learning outcomes of the practice "Introductory Practical Training".

*Table 3.1. The list of the HEP HE's components that contribute to the achievement of the planned learning outcomes of the practice*

<b>Code</b>	<b>Name of competence</b>	<b>Previous disciplines/modules, practices*</b>	<b>Subsequent disciplines/modules, practices*</b>
GC-6	Able to identify and implement the priorities of their own activities and ways to improve it based on self-assessment	Geological and Geophysical Basics of Mineral Prospecting and Exploration Mining Geology Modelling of Mineral Deposits	Final State Examination
PC-2	Capable of justifying the need, choosing the best methodology, planning, implementing, interpreting results, and supervising geophysical work at various stages of mineral site development	Regional Geology. Geology of Central and Southern Africa Geological and Geophysical Basics of Mineral Prospecting and Exploration Mining Geology Modelling of Mineral Deposits	Hydrogeology Mining Hydrogeology Research Work (Mining Geology). Part 1 Research Work (Geological and Geophysical Survey). Part 1 Research Work (Mining Geology). Part 2 Research Work (Geological and Geophysical Survey). Part 2 Pre-Graduate Practice Final State Examination
PC-4	Capable of designing, assisting with, and supervising a geologic study of a subsoil area at various stages of development	Regional Geology. Geology of Central and Southern Africa Geological and Geophysical Basics of Mineral Prospecting and Exploration Mining Geology Modelling of Mineral Deposits	Hydrogeology Mining Hydrogeology Research Work (Mining Geology). Part 1 Research Work (Geological and Geophysical Survey). Part 1 Research Work (Mining Geology). Part 2 Research Work (Geological and Geophysical Survey). Part 2 Pre-Graduate Practice Final State Examination

\* - to be filled in accordance with the matrix of competencies and Sustainable Educational Plan HEP HE

#### 4. SCOPE OF PRACTICE

Course workload “Introductory Practical Training” is 6 credit units (216 academic hours).

#### 5. CONTENT OF PRACTICE

*Table 5.1. Content of practice \**

<b>Name of practice section</b>	<b>Contents of the section (topics, types of practical activities)</b>	<b>Workload, ac. hrs.</b>
Section 1. Organizational and preparatory	Assignment of an individual task from the supervisor	1
	Workplace safety instruction (in the laboratory and/or pro-duction site)	1
	Keeping a practice diary	2
Section 2. Main	Introduction to the work of the department/unit/ or other structural element of the enterprise dealing with the issues of mining and industrial geology	18

<b>Name of practice section</b>	<b>Contents of the section (topics, types of practical activities)</b>	<b>Workload, ac. hrs.</b>
	Performing field work at the site of study (area/area and/or deposit at any stage of exploration and development)	120
	Collecting analytical data and/or materials in accordance with the individual assignment, analyzing and processing the data obtained	54
	Ongoing supervision of the internship by the supervisor	2
Preparation of practice report		9
Preparation for defense and defense of the practice report		9
<b>TOTAL:</b>		<b>216</b>

\* - the content of practice by sections and types of practical training is FULLY reflected in the student's practice report.

## **6. MATERIAL AND TECHNICAL SUPPORT FOR PRACTICE**

In case of stationary or offsite internship in Moscow or outside Moscow, students are provided with rooms that comply with current sanitary and fire safety norms, as well as safety requirements at the enterprise, workplace and when working with certain production/laboratory equipment.

During stationary practice at the RUDN University, depending on individual assignment, any laboratories of the Department of Subsoil and Oil & Gas Engineering, the RUDN Library, that comply with current sanitary and fire safety norms as well as safety requirements at the enterprise, workplace and when working with certain production/laboratory equipment can be used.

The bases for the students' internship are:

- a geological site with ore mineralization (deposit, ore occurrence, prospective area) located in Russia or another country (for example, in Tanzania supported by Uranium One).
- organizations whose main professional activity is aimed at solving mining issues of mineral exploration and development;
- research, design and scientific-production institutions and organizations of mining profile;
- laboratories of the department/RUDN University or a partner university.

The student can come up with the initiative of the place of practice. The direction of professional activity of the organization proposed by the student for the practice should correspond to the profile of the educational program and types of professional activity, for which the graduate of the program is preparing. The place of practice must be agreed with the head of the department with the subsequent (in the case of a positive decision) the conclusion of the relevant contract with the proposed organization of the student.

## **7. PRACTICE METHOD**

The practice «Introductory Practical Training» can be carried out both in the structural divisions of RUDN University or in the organizations of Moscow (inside practice), and at bases located outside of Moscow (outside practice).

The practice on the basis of an external organization (outside 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 host organization.

The timing of the practice corresponds to the period specified in the academic schedule of the HEP HE. The timing of the internship can be adjusted upon agreement with the Department of Educational Policy and the Department for the organization of practices and student employment at RUDN University.

## **8. EDUCATIONAL AND METHODOLOGICAL AND INFORMATION SUPPORT FOR PRACTICE**

### *Main literature:*

1. Roger Marjoribanks. Geological Methods in Mineral Exploration and Mining. Springer-Verlag Berlin Heidelberg, 2010 (Second Edition). - P. 233. — URL: <https://www.geokniga.org/bookfiles/geokniga-geological-methods-mineral-exploration-and-mining.pdf>

2. Griffiths D.H., King R.F. Applied Geophysics for Geologists and Engineers. The Elements of Geophysical Prospecting. 2nd Ed. — Pergamon Press, 1988. — 236 p. — ISBN: 0-08-022071-1. — URL: <https://www.geokniga.org/bookfiles/geokniga-applied-geophysics-geologists-and-engineers.pdf>

<https://www.geologyseeker.com/2022/05/geological-methods-in-mineral.html>

3. Haldar S.K. Mineral Exploration Principles and Applications, 2nd Edition. Elsevier, 2018. — 378 p. — URL: <https://www.geologyseeker.com/2022/06/mineral-exploration-principles-and.html>

4. Deb P.K. An Introduction to Mine Hydrogeology. Springer Cham Heidelberg New York Dordrecht London, 2014. XIV, 54 p. 12 illus., 3 illus. in color. — ISBN: 978-3-319-02987-0, ISBN: 978-3-319-02988-7 (eBook), DOI 10.1007/978-3-319-02988-7 — (SpringerBriefs in Water Science and Technology). — URL: <https://sciarium.com/file/115505/>

The main literature can be expanded and recommended by the head of practice individually to each student in accordance with the individual assignment.

### *Additional literature:*

1. J. Wasowski, Daniele Giordan, Piernicola Lollino. "Engineering Geology and Geological Engineering for Sustainable Use of the Earth's Resources". Springer, 2017 - <http://dx.doi.org/10.1007/978-3-319-61648-3>

2. Paola Gattinoni, Enrico Maria Pizzarotti, Laura Scesi. "Engineering Geology for Underground Works". Springer Dordrecht, 2014 - <https://doi.org/10.1007/978-94-007-7850-4>

3. Hustrulid W., Kuchta M., Martin R. "Open pit mine planning and design". CRC Press, 2013 - <https://www.geokniga.org/books/28414>

4. Charles J. Moon, Michael K. G. Whateley, Anthony M. Evans. Introduction to Mineral Exploration, 2nd Edition. — Blackwell Publishing, 2006. — 499 p. — URL: <https://www.geologyseeker.com/2022/07/introduction-to-mineral-exploration-2nd.html>

5. Rossi M.E., Deutsch C.V. Mineral Resource Estimation. Springer, 2014. — 337 p. — ISBN: 9781402057168. — URL: <https://www.geologyseeker.com/2022/05/ore-deposit-geology-by-john-ridley.html>

6. Brassington R. Field Hydrogeology, 4th Edition. — John Wiley & Sons Ltd, 2017. — 304 p. — (The Geological Field Guide Series) — ISBN: 9781118397367. — URL: <https://sciarium.com/file/268418/>

7. Broder J. Merkel, Andrea Hasche-Berger. Uranium, Mining and Hydrogeology. Springer Berlin, Heidelberg, 2008. — 980 p. — ISBN: 3540877452. — URL: [https://avxhm.se/ebooks/3540877452\\_hydrogeology.html](https://avxhm.se/ebooks/3540877452_hydrogeology.html)

Additional literature may be expanded and/or modified and recommended by the supervisor of practice individually to each student in accordance with the individual assignment.

*Internet-(based) sources:*

1. Electronic libraries with access for RUDN students:

- RUDN Electronic Library System – RUDN ELS <http://lib.rudn.ru/MegaPro/Web>
- ELS “University Library Online” <http://www.biblioclub.ru>
- ELS Yurayt <http://www.biblio-online.ru>
- ELS “Student Consultant” [www.studentlibrary.ru](http://www.studentlibrary.ru)
- ELS “Lan” <http://e.lanbook.com/>
- ELS “Trinity Bridge” <http://www.trmost.ru>

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/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>
- Геологический портал GeoKniga <http://www.geokniga.org>
- Geological Survey of Tanzania (GST) <https://www.gst.go.tz>
- Tanzania Geological Society (TGS) <https://www.tgs.or.tz>
- <https://www.gst-datashop.com>

*Educational and methodological materials for the practice, filling out a dairy/journal and preparing a practice report \*:*

1. Rules for safe working conditions and fire safety during the practice «Introductory Practical Training» (initial briefing).

2. Guidelines for filling in a dairy/journal by students and preparing a practice report.

\* - all educational and methodological materials for independent work of students are placed in accordance with the current procedure on the page of the subject in LMS TUIS!

## **8. ASSESSMENT AND EVALUATION TOOLKIT AND GRADING CRITERIA**

Assessment and Evaluation Toolkit (AET), Grading System (GS)\* for assessing the level of competence (part of competence) for the Internship “Introductory Practical Training” are presented in the Appendix to the Internship Syllabus of the subject.

\* - AET and GS are formed on the basis of the requirements of the relevant local normative act of the RUDN University.

**DEVELOPERS:**

**Associate Professor of the  
Department of Subsoil Use and  
Oil&Gas Engineering**

Position, Department



Signature

**A. Kotelnikov**

Full name

**Associate Professor of the  
Department of Subsoil Use and  
Oil&Gas Engineering**

Position, Department



Signature

**M. Romero**

Full name

**HEAD of Department:**

**Director of the Department of  
Subsoil Use and Oil&Gas  
Engineering**

Name of Department



Signature

**A. Kotelnikov**

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**HEAD OF HEP HE:**

**Director of the Department of  
Subsoil Use and Oil&Gas  
Engineering**

Position, Department



Signature

**A. Kotelnikov**

Full name