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

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

**INTERNSHIP SYLLABUS**

**Pre-graduate practice / Преддипломная практика**

internship title

**Industrial**

internship type

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

**21.04.01 Oil and gas engineering**

field of studies / speciality code and title

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

**Oil and gas engineering / Технологии добычи и транспортировки нефти и газа**

higher education programme profile/specialisation title

## 1. INTERNSHIP GOAL(s)

The goal of the Internship «Pre-graduate practice / Преддипломная практика» is the implementation of scientific research necessary for the development of the final qualifying work; the formation and development of practical skills and competencies of a master, the acquisition of experience in independent professional activity; consolidation and deepening of the received theoretical knowledge in the studied disciplines; the formation of masters' skills in applying the knowledge obtained during training in independent professional activities.

The main tasks of «Pre-graduate practice / Преддипломная практика» are:

- collection of materials for writing a master's thesis;
- study of specific methods and techniques for the activities of oil and gas enterprises;
- study of modern technologies for solving various problems of production, pipeline transport and processing of hydrocarbons in real conditions;
- preparation of analytical materials, information reviews on the development of modern technologies for the production, pipeline transport and processing of hydrocarbons;
- development of the ability to conduct independent research in accordance with the developed program;
- collection of information necessary for the preparation of the practical part of the master's thesis, acquisition of skills for their processing and analysis;
- acquisition and synthesis of data confirming the conclusions and main provisions of the master's thesis, testing its most important results and proposals.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

The internship «Pre-graduate practice / Преддипломная практика» is aimed at the development of the following competences (competences in part):

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

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Competence formation indicators (within this course)</b>
GC-1	Able to search, critical make a critical analysis of problem situations based on a systematic approach, develop an action strategy.	GC-1.1. Knows the methods of critical analysis and evaluation of modern scientific achievements; methods of critical analysis; basic principles of critical analysis. GC-1.2. Can analyze the task, highlighting its basic components, decompose the task; receive new knowledge based on analysis, synthesis, etc.; carry out a critical analyze of information necessary to solve the problem; collect data on complex scientific problems related to the professional field; search for information and solutions based on actions, experiment and experience. GC-1.3. Has the ability to study the problem of professional activity using analysis; synthesis and other methods of intellectual activity; identify scientific problems and use adequate methods to solve them; the skills of value judgments in solving professional situations.
GC-6	Able to identify and implement the priorities of their own activities and ways to improve them based on self-assessment.	GC-6.1. Knows their resources and their limits (personal, situational, temporary, etc. ), for the successful completion of the assigned work; the basics of planning the long-term goals of their own activities, taking into account the conditions, means,

Competence code	Competence descriptor	Competence formation indicators (within this course)
		<p>personal opportunities, stages of career growth, the time perspective for the activity development and the requirements of the labor market.</p> <p>GC-6.2. Can realize the intended goals of the activity, taking into account the conditions, means, personal capabilities, stages of career growth, time perspective for the development of activities and the requirements of the labor market; critically assess the efficiency of using time and other resources in solving the tasks, as well as regarding the result obtained.</p> <p>GC-6.3. Has the skills to determine an effective course of action in the field of professional activity; making decisions at the level of one's own professional activity; the skills in planning their own professional activities.</p>
SPC-1	Able to use theoretical knowledge when performing technological scientific research in the field of development, transportation and processing of oil and gas	<p>SPC-1.1 Knows fundamental concepts in the field of geology of oil and gas fields, methods of forecasting, prospecting and exploration of mineral deposits; regulatory and methodological documents in the field of hydrocarbon production and development of oil and gas fields</p> <p>SPC-1.2 Can use theoretical knowledge and mining and geological information to carry out technological scientific research, as well as apply knowledge of regulatory and methodological documents to assess oil and gas fields</p> <p>SPC-1.3 Has the theoretical knowledge, methods of subsurface research in the field of oil and gas field development; skills to perform production, technological and engineering research in the field of hydrocarbon production, development of oil and gas fields</p>
SPC-2	Able to develop and implement new advanced technologies in the field of geological exploration, evaluation and estimation of hydrocarbon raw materials	<p>SPC-2.1 Knows the methodological provisions, instructions and requirements for the geological study of the subsoil and geological exploration; the reserve estimation management policy; rules for compiling documentation in the field of reserves estimation and management; technologies for conducting, processing and interpreting geological and geophysical works; exploration technologies; national and global trends in the development of advanced technologies</p> <p>SPC-2.2 Can manage the production activities of the entrusted structural unit; check the design documentation for compliance with the requirements of existing norms and rules; introduce advanced technologies in the process of prospecting and exploration of oil and gas fields; develop proposals and take prompt measures aimed at improving the quality of exploration activities.</p> <p>SPC-2.3 Has the skills for studying Russian and foreign experience in matters of assessing and managing reserves; the skills for preparing proposals for new methods and technologies in the field of geological exploration and reserve estimation; the skills for supervising the execution of case studies and research and development activities.</p>
SPC-4	Able to manage the system for monitoring the technical condition and technical diagnostics at	SPC-4.1 Knows the principles, physical foundations, technical support of technical control and diagnostic methods, modern developments in the field of strength of materials, fracture mechanics, materials technology and materials science; design features,

Competence code	Competence descriptor	Competence formation indicators (within this course)
	the facilities and plants of the oil and gas complex	<p>manufacturing technology, operation and repair of the control object, types and types of defects, probable zones of their formation, taking into account the loads acting on the object and other factors, principles, physical foundations, technical support for the types and methods of technical control and diagnostics; principles of construction, functional diagrams and rules for operating equipment for a given method of control, rules for selecting and checking the quality of used consumable flaw detection materials; control systems used to check objects (products) of a certain type; metrological support; standards, calculation methods and other applicable regulatory documents and rules for assessing the technical condition; harmful environmental factors of this control method and ways to prevent their impact on the environment and humans; principles of planning and organization of work of technical control and diagnostic units, current state and prospects for the development of technical control and diagnostic methods; rules for electrical safety and fire safety, rules for the construction and safe operation of facilities</p> <p>SPC-4.2 Can to determine the methods, equipment, technologies and techniques to be used for specific types of objects; perform control operations, evaluate and identify the results of control and testing, issue conclusions on the results of technical control and diagnostics; organize, conduct and manage calculations and experimental work to assess the technical condition</p> <p>SPC-4.3 Has the skills to perform verification calculations, taking into account the identified defects; assessment of the mutual influence of various defects on the technical condition of the control object; determining the need for additional research in order to clarify the determining parameters of the technical condition; development of measures to reduce operational risks based on risk analysis, minimization of operational risks</p>
SPC-5	Able to draw up technical documentation for the implementation of the technological process (work schedules, instructions, plans, estimates, requests for materials, equipment, etc.), make an economic assessment of oil and gas fields in accordance with approved forms	<p>SPC-5.1 Knows the requirements and GOSTs for the preparation of technical documentation, basic methods of geological and industrial assessment of oil and gas fields; methods of geological - industrial and geological-economic assessment (GEO) of new geological exploration projects, taking into account all the uncertainties and risks of their implementation</p> <p>SPC-5.2 Can draw up and draw up technical documentation for the implementation of technological processes in the field of oil and gas field development, transportation and processing of oil and oil products; apply new methods of geological and industrial evaluation of oil and gas fields; determine the geological resources and the probability of finding a deposit, its production potential; carry out planning and evaluation of infrastructure solutions; determination of costs for the discovery and development of a field</p> <p>SPC-5.3 Has the methodology for preparing primary reporting, including work schedules, instructions, plans, estimates, applications for materials, equipment according to approved forms</p>
SPC- 7	Able to organize, manage, and carry out quality control of the main	<p>SPC-7.1 Knows: The main types of applied systems for assessing the quality of geological types of work in the development of oil and gas fields,</p>

Competence code	Competence descriptor	Competence formation indicators (within this course)
	types of work in the development of oil and gas fields, transportation and processing of oil and gas	<p>transportation and processing of oil and gas; ISO-9001 quality system, GKZ regulations and classification of oil and gas reserves</p> <p>Requirements of regulatory legal acts of the Russian Federation, local regulations, administrative documents and technical documentation in the field of hydrocarbon production</p> <p>Technological processes of hydrocarbon production</p> <p>Purpose, device and principle of operation of equipment for the extraction of hydrocarbon raw materials</p> <p>Physical and chemical properties of hydrocarbon raw materials, chemical reagents, the procedure and rules for their disposal</p> <p>Technological modes, well operation parameters</p> <p>Standards for technological losses of hydrocarbon raw materials during production in accordance with the accepted scheme and development technology</p> <p>The influence of various processes occurring in the reservoir on the productivity factor of a production well</p> <p>The procedure for measuring the productivity factor of a production well</p> <p>Methods for calculating the productivity factor and skin effect according to well surveys with recording the pressure recovery curve</p> <p>Purpose, device and principle of operation of equipment for mechanized production of hydrocarbon raw materials</p> <p>Standards, specifications, guidelines for the development and execution of technical documentation</p> <p>Types of emergencies during well operation, their causes and methods of prevention and elimination</p> <p>Structure, interaction of means of an automated process control system, telemechanics, automatic control systems for hydrocarbon production equipment, ways to control them</p> <p>Requirements for labor protection, industrial, fire and environmental safety</p> <p>SPC-7.2 Can:</p> <p>Organize and conduct quality control of work in the development of oil and gas fields, transportation and processing of oil and gas at different stages of the study of specific objects</p> <p>Evaluate the residual life of hydrocarbon production equipment</p> <p>Analyze inflow characteristics in a vertical, horizontal or multi-lateral well</p> <p>Predict the change in the inflow characteristics from the reservoir to the well, taking into account the reservoir operation mode</p> <p>Develop operating instructions for hydrocarbon production equipment</p> <p>Control the operation of equipment for artificial lift of hydrocarbons</p> <p>Identify wells operating with deviations from the planned regime</p> <p>Conduct emergency drills with subordinate personnel according to the action plan for localization and elimination of accidents and incidents at hydrocarbon production facilities</p> <p>SPC-7.3 Has:</p>

Competence code	Competence descriptor	Competence formation indicators (within this course)
		<p>The methodology for assessing the quality of all types of work in the development of oil and gas fields, transportation and processing of oil and gas at different stages of the study of specific objects</p> <p>Skills for organizing and monitoring the implementation of plans and tasks for the extraction of hydrocarbons</p> <p>Skills for operational management of production and monitoring compliance with hydrocarbon production technology</p> <p>Skills for monitoring compliance with the specified operating mode of well equipment, piping, oil and gas field pipelines, prefabricated pipelines, gas pipelines, pipelines, inhibitor pipelines in accordance with the requirements of the technological regulations of the installation, operating instructions and passports of equipment manufacturers</p> <p>Skills to analyze the dynamics of hydrocarbon production. Organization of providing jobs with up-to-date technological documentation</p> <p>Skills in organizing monitoring and control of the operation of the field and wells</p> <p>Skills of control and management of work on the preparation and maintenance of technical documentation of the unit</p> <p>Skills of control and management in the direction of compliance with the requirements of labor protection, industrial, fire and environmental safety in the unit</p> <p>Skills to control and manage the preparation of reports on the production of hydrocarbons</p>
SPC-8	Able to manage work on the diagnostic examination of main oil pipelines (MN) and main oil product pipelines (MNPP) facilities	<p>SPC-8.1 Knows:</p> <p>Methods for organizing work on in-line diagnostic inspection of MN and MNPP using in-line inspection devices</p> <p>Organizational and administrative documents, regulatory and methodological materials in the field of quality control of work on diagnosing objects of MN and MNPP</p> <p>List of scientific and technical documentation, the use of which is associated with the performance of work on the diagnosis of MN and MNPP objects</p> <p>The procedure for the formation of long-term development plans in the field of diagnostic work at the facilities of MN and MNPP</p> <p>The procedure for the development of design, executive and operational documentation for the direction of activity</p> <p>Rules for working with specialized software systems</p> <p>Requirements for labor protection, industrial, fire and environmental safety</p> <p>SPC-8.2 Can:</p> <p>Determine the scope and procedure for performing work on diagnosing objects of MN and MNPP</p> <p>Assess the compliance of work performance with the requirements of the technological process for diagnosing objects of MN and MNPP</p> <p>Determine the composition and sequence of preparatory work for non-destructive quality control of structural elements of objects</p>

Competence code	Competence descriptor	Competence formation indicators (within this course)
		<p>and structures of MN and MNPP, mechano -technological equipment and metal structures of MN and MNPP tanks, technical devices, materials, products, parts, assemblies, welded joints</p> <p>Ensure the prevention and elimination of violations of the production process of diagnosing objects of MN and MNPP by NDT methods</p> <p>Determine the procedure for performing work to identify defects based on the results of additional flaw detection control of MN and MNPP objects, including internal ones, measurement and refinement of their parameters</p> <p>Analyze advanced domestic and foreign experience in the field of diagnosing MN and MNPP objects</p> <p>Use specialized software products in the field of activity</p> <p>Comply with the requirements of industrial safety and labor protection at the facilities of MN and MNPP</p> <p>SPC-8.3 Has:</p> <p>Skills in planning work on diagnosing MN and MNPP objects</p> <p>Skills in managing work on processing the results of diagnosing objects of MN and MNPP</p> <p>Skills for verification and approval of production documentation for the diagnosis and control of MN and MNPP facilities</p> <p>Skills to control the regulatory and technical support of work on diagnosing objects of MN and MNPP</p> <p>Skills to control data entry into specialized software systems, and their verification</p>
SPC-9	Able to organize the work of performers, find and make management decisions, rules for ensuring the safety of technological processes, as well as personnel when working in the field, in laboratories, in office processing	<p>SPC-9.1 Knows the safety rules and safety precautions when working in the field, in laboratories, during office processing</p> <p>SPC-9.2 Can justify and make management decisions in the field of organization and regulation of labor; conduct briefings on ensuring the safety of technological processes, as well as personnel when working in the field, in laboratories, during office processing</p> <p>SPC-9.3 Has the methodology for ensuring the safety of technological processes, as well as personnel when working in the field, in laboratories, during office processing</p>

### 3. INTERNSHIP IN HIGHER EDUCATION PROGRAMME STRUCTURE

The internship refers to the elective component of (B2) block of the higher educational 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 search, make a critical analysis of problem situations based on a systematic approach, develop a strategy.	Current development of the production of unconventional hydrocarbon resources in the world / Современное развитие добычи нетрадиционных ресурсов углеводородов в мире Economics and management of oil and gas production / Экономика и управление нефтегазовым производством Project management in the oil and gas industry / Управление проектами в нефтегазовой отрасли	SFC
GC-6	Able to identify and implement the priorities of their own activities and ways to improve them based on self-assessment.	History and methodology of subsurface use / История и методология недропользования	SFC
SPC-1	Able to use theoretical knowledge when performing technological scientific research in the field of development, transportation and processing of oil and gas	Geoinformation Systems and Applications / Геоинформационные системы и их применение Current development of the production of unconventional hydrocarbon resources in the world / Современное развитие добычи нетрадиционных ресурсов углеводородов в мире Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа и управление качеством производимой продукции Innovative technologies for the transportation and storage of hydrocarbons / Инновационные технологии транспортировки и хранения углеводородов Innovative technologies for the development of hydrocarbon deposits / Инновационные технологии разработки месторождений углеводородов Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов Research work (obtaining primary skills in research work) / Научно-исследовательская работа (получение первичных навыков научно-исследовательской работы) Research work / Научно-исследовательская работа	SFC
SPC-2	Able to develop and implement new advanced technologies	Research work (obtaining primary skills in research work) / Научно-исследовательская работа (получение	SFC



Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
	in the field of geological exploration, evaluation and estimation of hydrocarbon raw materials	первичных навыков научно-исследовательской работы) Research work / Научно-исследовательская работа	
SPC-4	Able to manage the system for monitoring the technical condition and technical diagnostics at the facilities and plants of the oil and gas complex	Machinery and equipment for field development and transportation of hydrocarbons / Машины и оборудование для разработки месторождений и транспорта углеводородов Methods of oil production intensification / Методы интенсификации добычи нефти Fundamentals of construction and operation of pipeline transport / Основы строительства и эксплуатации трубопроводного транспорта Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа и управление качеством производимой продукции Innovative technologies for the transportation and storage of hydrocarbons / Инновационные технологии транспортировки и хранения углеводородов Diagnostics of oil and petroleum products main pipeline facilities / Диагностирование объектов магистральных трубопроводов нефти и нефтепродуктов Technological practice (training) / Технологическая практика (учебная) Technological practice (production) / Технологическая практика (производственная)	SFC
SPC-5	Able to draw up technical documentation for the implementation of the technological process (work schedules, instructions, plans, estimates, requests for materials, equipment, etc.), make an economic assessment of oil and gas fields in accordance with approved forms	Modern aspects of geological and geophysical research in the oil and gas industry / Современные аспекты геолого-промысловых и геофизических исследований в нефтегазовом деле Modern stream in oil and gas processing in Russia / Современные направления нефтегазопереработки в России Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа и управление качеством производимой продукции Technologies for developing prospective hydrocarbon reserves /	SFC

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
		<p>Технологии разработки перспективных запасов углеводородов            Innovative technologies for the development of hydrocarbon deposits /            Инновационные технологии разработки месторождений углеводородов            Innovative technologies for the transportation and storage of hydrocarbons /            Инновационные технологии транспортировки и хранения углеводородов            Diagnostics of oil and petroleum products main pipeline facilities /            Диагностирование объектов магистральных трубопроводов нефти и нефтепродуктов            Comprehensive analysis of processing, storage and marketing of hydrocarbons /            Комплексный анализ переработки, хранения и сбыта углеводородов            Improving the efficiency of the production process and operation of equipment for the extraction of hydrocarbons /            Повышение эффективности процесса добычи и работы оборудования по добыче углеводородного сырья            Technological practice (training) /            Технологическая практика (учебная)            Technological practice (production) /            Технологическая практика (производственная)</p>	
SPC-7	Able to organize, manage, and carry out quality control of the main types of work in the development of oil and gas fields, transportation and processing of oil and gas	<p>Modern aspects of geological and geophysical research in the oil and gas industry /            Современные аспекты геолого-промысловых и геофизических исследований в нефтегазовом деле            Machinery and equipment for field development and transportation of hydrocarbons /            Машины и оборудование для разработки месторождений и транспорта углеводородов            Resource estimation, computation and recalculation of hydrocarbon reserves /            Оценка ресурсов, подсчет и пересчет запасов углеводородов            Methods of oil production intensification /            Методы интенсификации добычи нефти            Innovative technologies for the development of hydrocarbon deposits /            Инновационные технологии</p>	SFC

Com- petence code	Competence de- scriptor	Previous courses/modules, intern- ships*	Subsequent courses/mod- ules, internships*
		<p>разработки месторождений углеводородов Improving the efficiency of the production process and operation of equipment for the extraction of hydrocarbons / Повышение эффективности процесса добычи и работы оборудования по добыче углеводородного сырья</p>	
SPC-8	<p>Able to manage work on the diagnostic examination main oil pipelines (MN) and main oil product pipelines (MNPP) facilities</p>	<p>Machinery and equipment for field development and transportation of hydrocarbons / Машины и оборудование для разработки месторождений и транспорта углеводородов Technological processes of pipeline transport / Технологические процессы трубопроводного транспорта Fundamentals of construction and operation of pipeline transport / Основы строительства и эксплуатации трубопроводного транспорта Diagnostics of oil and petroleum products main pipeline facilities / Диагностирование объектов магистральных трубопроводов нефти и нефтепродуктов</p>	SFC
SPC-9	<p>Able to organize the work of executors, find and make management decisions, rules for ensuring the safety of technological processes, as well as personnel safety when working in the field, in laboratories, in office processing</p>	<p>Technological processes of pipeline transport / Технологические процессы трубопроводного транспорта Modern stream in oil and gas processing in Russia / Современные направления нефтегазопереработки в России Current development of the production of unconventional hydrocarbon resources in the world / Современное развитие добычи нетрадиционных ресурсов углеводородов в мире Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа и управление качеством производимой продукции Technologies for developing prospective hydrocarbon reserves / Технологии разработки перспективных запасов углеводородов Economics and management of oil and gas production / Экономика и управление нефтегазовым производством</p>	SFC

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
		Project management in the oil and gas industry / Управление проектами в нефтегазовой отрасли Technological practice (production) / Технологическая практика (производственная)	

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

#### 4. INTERNSHIP WORKLOAD

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

#### 5. INTERNSHIP CONTENTS

Table 5.1. Internship contents\*

Modules	Contents (topics, types of practical activities)	Workload, academic hours
Module 1. Organizational and preparatory	Assignment of an individual task from the supervisor	4
	Workplace safety instruction (in the laboratory and/or production site)	4
Module 2. Main	Study of the practice of enterprises and organizations in accordance with the topic of the master's thesis	172
	Current control of the practice by the supervisor	12
	Keeping practice journal	6
Writing an internship report		9
Preparing for defence and defending the internship report		9
<b>TOTAL:</b>		<b>216</b>

\* 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

Bld. 5, 8, Podolskoye Highway Classroom: room No. 360	A set of specialized furniture; chalk board; technical means: projection screen; multimedia projector SANYO plc xt20; system block DEPO Neos 220
Bld. 5, 8, Podolskoye Highway Mining Machinery Laboratory No. 358	Computer with pre-installed licensed software "ARMARIS" Intel Core 15 processor; "Wellhead equipment" - mock-up bench; 32" LED TV 3D on a rack; Layout - controller "Electon-09 1" from SU "Electon 05-250 » in compact design
Bld. 5, 8, Podolskoye Highway Laboratory of rational subsoil use No. 337	A set of specialized furniture; hardware: Acer V193L monitor, RAMEC STORM W system unit, keyboard, computer mouse-4; Plotter Hewlett Packard C7770B; Creative WebCam Live Motion 1 Camera, NIKON LV100D Microscope, AdventurerProRV214 Electronic Laboratory Balance, AdventurerProRV313 Electronic Laboratory Balance, Scimitar1000FT-IR IR Fourier Spectrometer, energy

	dispersive X-Ray fluorescence analyzer "PRISMA-ECO", High pressure reactor K201-512
Bld. 5, 8, Podolskoye Highway Mining machine laboratory No. 362	A set of specialized furniture; Drilling simulator "Transas SHELF 6000 Drill"; Additional trainee seat for the drilling simulator "Transas SHELF 6000 Drill"
Bld. 5, 8, Podolskoye Highway Laboratory of hydrodynamic pro- cesses of oil and gas production No. 341	Ejector; Bench desktop, Instrumentation and shut-off and con- trol valves; Tank; Pump-ejector system bench, left view; laser diode; Column with liquid; Air compressor; Gas supply system to the column; Gas meter; pressure gauge; Photodiode; Digital oscilloscope

## 7. INTERNSHIP LOCATION AND TIMELINE

The internship can be carried out at the structural divisions of RUDN University (at Moscow-based organisations, as well as those located outside Moscow).

The internship at an external organisation (outside RUDN University) is legally arranged on the grounds of an appropriate agreement, which specifies the terms, place and conditions for an internship implementation at the organisation.

The period of the internship, as a rule, corresponds to the period indicated in the training calendar of the higher education programme. However, the period of the internship can be rescheduled upon the agreement with the Department of Educational Policy and the Department for the Organization of Internship and Employment of RUDN students.

## 8. RESOURCES RECOMMENDED FOR INTERNSHIP

### *Main readings:*

1. Gaibova, T.V. «Pre-graduate practice / Преддипломная практика»: study guide / T.V. Gaibova , V.V. Tugov , N.A. Shumilina; Ministry of Education and Science of the Russian Federation, Orenburg State University, Department of Control and Informatics in Technical Systems. - Orenburg: OGU, 2016.  
<http://biblioclub.ru/index.php?page=book&id=467196>
2. Oil and gas engineering. Full course [Electronic resource ]: Textbook / V.V. Tetelmin , V.A. Yazev. - 2nd ed. ; Electronic text data. - Dolgoprudny: Publishing House "Intellect", 2014. - 800 p.  
<http://lib.rudn.ru/ProtectedView/Book/ViewBook/6246>

### *Additional readings:*

1. Levochkina, N.A. «Pre-graduate practice / Преддипломная практика»: guidelines / N.A. Levochkin. - Moscow: Direct-Media, 2013. - 31 p.  
<http://biblioclub.ru/index.php?page=book&id=134540>
2. Collection, transport and storage of oil in the fields: workshop / Ministry of Education and Science of the Russian Federation, Federal State Autonomous Educational Institution of Higher Education "North Caucasus Federal University"; auth.-stat. L.M. Zinoviev, V.V. Verzhbitsky and others - Stavropol: NCFU, 2017. - 126 p.  
<http://biblioclub.ru/index.php?page=book&id=483759>

### *1. 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](http://www.studentlibrary.ru)
- - EL "Lan" <http://e.lanbook.com/>
- - EL "Trinity Bridge"

## 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.
  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.

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

The assessment toolkit and the grading system\* to evaluate the level of competences (competences in part) formation as the internship results are specified in the Appendix to the internship syllabus.

\* 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).

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