

Документ подписан
Информация о владельце:
ФИО: Ястребов Олег Александрович
Должность: Ректор
Дата подписания: 21.02.2023 10:05:46
Уникальный программный идентификатор:
ca953a0120d891083f939673078ef1a989dae18a

Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
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. PURPOSE OF THE PRACTICE

The purpose of «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 THE LEARNING OUTCOMES OF THE INTERSHIP

«Pre-graduate practice / Преддипломная практика» is aimed at developing the following competencies (parts of competencies) of students:

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

Code	Competence	Competence achievement indicators (within this discipline)
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,

Code	Competence	Competence achievement indicators (within this discipline)
		<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 the facilities and plants	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, manufacturing technology, operation and repair of the control

Code	Competence	Competence achievement indicators (within this discipline)
	of the oil and gas complex	<p>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 types of work in the development of oil and gas	<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, transportation and processing of oil and gas; ISO-9001 quality</p>

Code	Competence	Competence achievement indicators (within this discipline)
	fields, transportation and processing of oil and gas	<p>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>

Code	Competence	Competence achievement indicators (within this discipline)
		<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, pre-fabricated 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 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>

Code	Competence	Competence achievement indicators (within this discipline)
		<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. PLACE OF PRACTICE IN THE STRUCTURE OF THE HEP HE

The practice «Pre-graduate practice / Преддипломная практика» refers to the compulsory (disciplines) part of module of block 2 of the curriculum.

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 «Pre-graduate practice / Преддипломная практика».

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

Code	Name of competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
GC-1	Able to search, make a critical analysis of problem situations based on a systematic	Current development of the production of unconventional hydrocarbon resources in the world / Современное развитие добычи нетрадиционных ресурсов углеводородов в мире	SFC

Code	Name of competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
	approach, develop strategy.	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	
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 subsoil 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	Applications of Geoinformation Systems / Практикум применения геоинформационных систем 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 in the field of geological exploration, evaluation and estimation of hydrocarbon raw materials	Resource estimation, computation and recalculation of hydrocarbon reserves / Оценка ресурсов, подсчет и пересчет запасов углеводородов Research work (obtaining primary skills in research work) / Научно-исследовательская работа (получение первичных навыков научно-исследовательской работы)	SFC

Code	Name of competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
		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	<p>Machinery and equipment for field development and transportation of hydrocarbons / Машины и оборудование для разработки месторождений и транспорта углеводородов</p> <p>Methods of oil production intensification / Методы интенсификации добычи нефти</p> <p>Fundamentals of construction and operation of pipeline transport / Основы строительства и эксплуатации трубопроводного транспорта</p> <p>Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа и управление качеством производимой продукции</p> <p>Innovative technologies for the transportation and storage of hydrocarbons / Инновационные технологии транспортировки и хранения углеводородов</p> <p>Diagnostics of oil and petroleum products main pipeline facilities / Диагностирование объектов магистральных трубопроводов нефти и нефтепродуктов</p> <p>Technological practice (training) / Технологическая практика (учебная)</p> <p>Technological practice (production) / Технологическая практика (производственная)</p>	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	<p>Modern aspects of geological and geophysical research in the oil and gas industry / Современные аспекты геолого-промысловых и геофизических исследований в нефтегазовом деле</p> <p>Modern stream in oil and gas processing in Russia / Современные направления нефтегазопереработки в России</p> <p>Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа и управление качеством производимой продукции</p> <p>Technologies for developing prospective hydrocarbon reserves / Технологии разработки перспективных запасов углеводородов</p> <p>Innovative technologies for the development of hydrocarbon deposits /</p>	SFC

Code	Name of competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
		<p>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	<p>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>	<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 разработки месторождений углеводородов Improving the efficiency of the production process and operation of equipment for the extraction of hydrocarbons / Повышение эффективности процесса добычи и</p>	SFC

Code	Name of competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
		работы оборудования по добыче углеводородного сырья	
SPC-8	Able to manage work on the diagnostic examination main oil pipelines (MN) and main oil product pipelines (MNPP) facilities	<p>Machinery and equipment for field development and transportation of hydrocarbons / Машины и оборудование для разработки месторождений и транспорта углеводородов</p> <p>Technological processes of pipeline transport / Технологические процессы трубопроводного транспорта</p> <p>Fundamentals of construction and operation of pipeline transport / Основы строительства и эксплуатации трубопроводного транспорта</p> <p>Diagnostics of oil and petroleum products main pipeline facilities / Диагностирование объектов магистральных трубопроводов нефти и нефтепродуктов</p>	SFC
SPC-9	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>Technological processes of pipeline transport / Технологические процессы трубопроводного транспорта</p> <p>Modern stream in oil and gas processing in Russia / Современные направления нефтегазопереработки в России</p> <p>Current development of the production of unconventional hydrocarbon resources in the world / Современное развитие добычи нетрадиционных ресурсов углеводородов в мире</p> <p>Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа и управление качеством производимой продукции</p> <p>Technologies for developing prospective hydrocarbon reserves / Технологии разработки перспективных запасов углеводородов</p> <p>Economics and management of oil and gas production / Экономика и управление нефтегазовым производством</p> <p>Project management in the oil and gas industry / Управление проектами в нефтегазовой отрасли</p> <p>Technological practice (production) / Технологическая практика (производственная)</p>	SFC

* - to be filled in accordance with the matrix of competencies and CMS HEP HE

4. SCOPE OF PRACTICE

General workload for «Pre-graduate practice / Преддипломная практика» is 6 credit units (216 academic hours).

5. CONTENT OF PRACTICE

Table 5.1. Content of practice *

Name of practice section	Contents of the section (topics, types of practical activities)	Workload, acc.hrs.
Section 1. Organizational and preparatory	Assignment of an individual task from the supervisor	4
	Workplace safety instruction (in the laboratory and/or production site)	4
Section 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
Preparation of practice report		9
Preparation for defense and defense of the practice report		9
TOTAL:		216

* - 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

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 i5 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 processes of oil and gas production No. 341	Ejector; Bench desktop, Instrumentation and shut-off and control 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. PRACTICE METHOD

The practice «Pre-graduate practice / Преддипломная практика» 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 practice 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. 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 literature:

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>

Resources of the information and telecommunications network "Internet":

1) RUDN Electronic Library System (ELS) and third-party ELS, to which university students have access on the basis of concluded agreements:

- 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
- EBS "Lan" <http://e.lanbook.com/>
- EBS "Trinity Bridge"

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/>

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

1) Rules for safe working conditions and fire safety during «Pre-graduate practice / Преддипломная практика» (initial briefing).

2) The general arrangement and principle of operation of technological production equipment used by students during their practice; flow charts and regulations, etc.

3) Guidelines for filling in a journal by students and preparing a practice report.

* - all educational and methodological materials for practice are posted in accordance with the current procedure on the page of practice in TUIS

9. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF FORMATION OF COMPETENCES ON THE RESULTS OF PRACTICE

Marking criteria (MC) and a 100-point (score) scale (PSS)* for assessing the level of competency (part of competencies) formation based on the results of practice «Pre-graduate practice / Преддипломная практика» are presented in the Appendix to this Practice Program (module).

* - MC and PSS are formed on the basis of the requirements of the relevant local normative act of the Peoples' Friendship University of Russia.

DEVELOPERS:

Associate Professor of the Department of Mineral
Developing and Oil&Gas Engineering

Position, Department



Signature

Tyukavkina O.V.

Full name

Head of Department:

Director of the Department of Mineral Develop-
ing and Oil&Gas Engineering

Name of Department



Signature

Kotelnikov A.E.

Full name

Head of Educational Programme:

Professor of the Department of Mineral Develop-
ing and Oil&Gas Engineering

Position, Department



Signature

Kapustin V.M.

Full name