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ФИО: Ястребов Олег Александрович  
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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

## **COURSE SYLLABUS OF THE DISCIPLINE**

**Comprehensive analysis of processing, storage and marketing of hydrocarbons /  
Комплексный анализ переработки, хранения и сбыта углеводородов**

(name of discipline/module)

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

**21.04.01 Oil and gas engineering**

(code and name of the Higher Education Field)

**The development of the discipline is carried out within the framework of the implementation of the higher education program of higher education (Higher Education Program):**

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

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

## 1. COURSE GOALS

The purpose of mastering the discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов" is to acquire skills for research and production and technological, providing modernization, implementation and operation of equipment for processing, transport and storage of oil and gas.

The main objective of the discipline is to study the main innovative technologies and a comprehensive analysis of the processing, storage and marketing of hydrocarbons, taking into account the current state and development prospects.

## 2. LEARNING OUTCOMES

Mastering the discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов" is aimed at developing the following competencies (parts of competencies) among students:

*Table 2.1. The list of competencies formed by students in the course of mastering the discipline (the results of mastering the discipline)*

Competence code	Competence	Competence indicators (within this discipline)
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-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,</p>

Competence code	Competence	Competence indicators (within this discipline)
		estimates, applications for materials, equipment according to approved forms

### 3. ACADEMIC PROGRAM STRUCTURE

The discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов" refers to the University Disciplines Module of block B1 of the Higher Education Program.

As part of the Higher Education Program students also master other disciplines and / or practices that contribute to the achievement of the planned results of mastering the discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов".

*Table 3.1 List of Higher Education Program components / disciplines that contribute to expected learning/training outcomes*

Cipher	Name of competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
SPC-1	Able to use theoretical knowledge when performing technological scientific research in the field of development, transportation and processing of oil and gas	Modern aspects of geological and geophysical research in the oil and gas industry / Современные аспекты геолого-промышленных 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	Pre-graduate practice / Преддипломная практика 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	Geoinformation Systems and Applications / Геоинформационные системы и их применение Advanced oil and gas processing equipment and product quality management / Современное оборудование для переработки нефти и газа	Research work / Научно-исследовательская работа Pre-graduate practice / Преддипломная практика SFC

Cipher	Name of competence	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
		и управление качеством производимой продукции	

\* - filled in in accordance with the matrix of competencies and the Higher Education Program.

#### 4. COURSE WORKLOAD and ACADEMIC/TRAINING/LEARNING ACTIVITIES

The total labor intensity of the discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов" is equal to 5 credits.

*Table 4.1. Types of academic activities during the period of the HE program mastering*

Type of study work	TOTAL, acc.	Semester(s)
		<b>3</b>
<i>Contact academic hours, acc .</i>	<i>54</i>	<i>54</i>
including:		
Lectures	18	18
Laboratory work		
Seminars (workshops/tutorials)	36	36
<i>Self-study (ies), academic hours</i>	<i>99</i>	<i>99</i>
<i>Evaluation and assessment (exam or pass/fail grading)</i>	<i>27</i>	<i>27</i>
<b>The course total workload</b>	acc.hrs. <b>180</b>	<b>180</b>
	credits <b>5</b>	<b>5</b>

#### 5. COURSE MODULE and CONTENTS

*Table 5.1. The content of the discipline (module) by type of educational work*

Name of the section (topic) of the discipline	Contents of the section (topic)	Type of study work
Section 1. Global trends in oil and gas processing, oil and gas chemistry	Topic 1.1. Use of associated petroleum gas and gas processing in general	Lecture, Lab work
	Topic 1.2. Trends in the development of the world petrochemical industry	
Section 2 Oil and Gas Storage	Topic 2.1. Underground natural gas storage	Lecture, Lab work
	Topic 2.2. Stabilization and processing of gas condensates	Lecture, Lab work
Section 3. Delivery and acceptance points of commercial oil and gas to the system of main pipelines	Topic 3.1. Delivery and acceptance points of commercial oil and gas to the system of main pipelines	Lecture, Lab work

#### 6. CLASSROOM EQUIPMENT and TECHNOLOGY SUPPORT REQUIREMENTS

*Table 6.1. Classroom Equipment and Technology Support Requirements*

Classroom for Academic Activity Type	Classroom equipment	Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary)
Lecture	Training room for conducting lecture-type classes: room. No. 335 A set of specialized furniture; technical means: projection screen; multimedia projector SANYO PROxtraX; system block DEPO Neos 220	
Seminar	Classroom for conducting seminar-type classes: room. No. 356 A set of specialized furniture; chalk board; monitor NEC PLASMA MONITO MODEL PX-42XM1G; system block DEPO Neos 220	
For self-study	Classroom for conducting seminar-type classes: room. No. 356 A set of specialized furniture; chalk board; monitor NEC PLASMA MONITO MODEL PX-42XM1G; system block DEPO Neos 220	

## 7. Recommended Sources for Course Studies

### *Main reading(sources):*

1. Zinovieva, L.M. Collection, transport and storage of oil in the fields: textbook / L.M. Zinoviev, L.H. Konovalova, A.B. Verisokin; Ministry of Education and Science of the Russian Federation, Federal State Autonomous Educational Institution of Higher Education "North Caucasian Federal University". - Stavropol: NCFU, 2017. - 230 p.

<http://biblioclub.ru/index.php?page=book&id=483083>

2. Sharifullin, A.V. Structures and equipment for storage, transportation and distribution of petroleum products [Electronic resource]: study guide / A.V. Sharifullin, L.R. Baibekova, S.G. Smerdov. — Electron. Dan. - Kazan: KNRTU, 2011. - 136 p.

<https://e.lanbook.com/book/73423>

### *Additional(optional) reading (sources):*

1. Reservoirs for receiving, storing and dispensing petroleum products: study guide / Yu.N. Bezborodov, V.G. Shram, E.G. Kravtsova and others; Ministry of Education and Science of the Russian Federation, Siberian Federal University. - Krasnoyarsk: Siberian Federal University, 2015. - 110 p.

<http://biblioclub.ru/index.php?page=book&id=435609>

2. Agabekov, V.E. Oil and gas: technologies and products of processing / V.E. Agabekov. - Minsk: Belarusian Science, 2011. - 460 p.

<http://biblioclub.ru/index.php?page=book&id=86694>

### *Internet-(based) sources:*

1. Electronic libraries with access for RUDN students: RUDN Electronic Library System - RUDN EBS <http://lib.rudn.ru/MegaPro/Web>  
- ELS "University Library Online" <http://www.biblioclub.ru>  
- EBS Yurayt <http://www.biblio-online.ru>

- ELS "Student Consultant" [www.studentlibrary.ru](http://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/>

### *Learning toolkits for self- studies in the RUDN LMS TUIS:*

1. A course of lectures on the discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов".
  2. Guidelines for students on mastering the discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов."
- \* - all educational and methodological materials for independent work of students are placed in accordance with the current procedure on the page of the discipline **in TUIS!**

## 8.ASSESSMENT AND EVALUATION TOOLKIT

Marking criteria (MC) and a 100-point (score) scale for evaluating the level of competencies (part of competencies) based on the results of mastering the discipline "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов" are presented in the Appendix to this Work Program of the discipline.

\* - MC and the 100-point (score) scale are formed on the basis of the requirements of the relevant local normative act of the Peoples' Friendship University of Russia.

### DEVELOPERS:

Professor of the Department of Mineral  
Developing and Oil&Gas Engineering  
\_\_\_\_\_  
Position, Department



\_\_\_\_\_  
Signature

Kapustin V.M.  
\_\_\_\_\_  
Full name

**Head of Department:**  
Director of the Department of Mineral  
Developing and Oil&Gas Engineering  
\_\_\_\_\_  
Name of Department



\_\_\_\_\_  
Signature

Kotelnukov A.E.  
\_\_\_\_\_  
Full name

**Head of Educational Programme:**  
Professor of the Department of Mineral  
Developing and Oil&Gas Engineering  
\_\_\_\_\_  
Position, Department



\_\_\_\_\_  
Signature

Kapustin V.M.  
\_\_\_\_\_  
Full name