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

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

course title

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 course instruction 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

2026

1. COURSE GOAL(s)

The goal of the course "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 course 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. REQUIREMENTS FOR LEARNING OUTCOMES

The course "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов" is designed for students to acquire following competences (competences in part):

Table 2.1. List of competences that students acquire during the course

Competence code	Competence descriptor	Competence formation indicators (within this course)
PC-1	Able to use theoretical knowledge when performing technological scientific research in the field of development, transportation and processing of oil and gas	PC-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. PC-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. PC-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.
PC-4	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	PC-4.1. 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. PC-4.2. 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. PC-4.3. Has the methodology for preparing primary reporting, including work schedules, instructions, plans, estimates, applications for materials, equipment according to approved forms

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course refers to the elective component of (B1) block of the higher educational programme curriculum.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
PC-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; Current development of the production of unconventional hydrocarbon resources in the world; Advanced oil and gas processing equipment and product quality management; Innovative technologies for the transportation and storage of hydrocarbons; Research work (obtaining primary skills in research work)	Pre-graduation Practical Training; State Exam; Graduate Qualification Work
PC-4	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; Technologies for developing prospective hydrocarbon reserves; Modern stream in oil and gas processing in Russia; Advanced oil and gas processing equipment and product quality management; Innovative technologies for the development of hydrocarbon deposits; Innovative technologies for the transportation and storage of hydrocarbons; Technological practice (educational); Technological practice (industrial)	Pre-graduation Practical Training; State Exam; Graduate Qualification Work

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

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов" is 5 credits.

Table 4.1 Types of academic activities during the period of the HE programme

mastering

Type of study work		TOTAL, acc.hrs.	Semester(s) 4
Contact academic hours, acc .		*54*	*54*
including:			
Lectures		16	16
Laboratory work			
Seminars (workshops/tutorials)		24	24
Self-study (ies), academic hours		*113*	*113*
Evaluation and assessment (exam or pass/fail grading)		*27*	*27*
The course total workload	acc.hrs.	**180**	**180**
	Credits	**5**	**5**

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title		Course topic title		Course module contents (topics)	Academic activities types
1	Global trends in oil and gas refining, petrochemistry and gas chemistry	1.1	Use of associated petroleum gas and gas refining in general	Study and analysis of the use of associated petroleum gas and gas refining in general	LC, S
		1.2	Trends in the development of global petrochemistry and gas chemistry	Review of promising trends in the development of global petrochemistry and gas chemistry	LC, S
2	Oil and gas storage	2.1	Underground natural gas storage	Study of best practices in underground gas storage	LC, S
		2.2	Stabilization and refining of gas condensates	Study of stabilization and refining processes of gas condensates	LC, S
3	Oil and gas delivery and acceptance points into the main pipeline system	3.1	Main facilities, tasks, composition of delivery and acceptance points. Main accounting schemes. Quality block. Methods of measuring oil and oil products	Description of main facilities, tasks, composition of delivery and acceptance points. Overview of main accounting schemes. Analysis of the quality block. Study of methods for measuring oil and oil products	LC, S

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Lecture	A lecture hall for lecture-type classes, equipped	

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
	with a set of specialised furniture; board (screen) and technical means of multimedia presentations.	
Seminar	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	
Self-studies	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment.	

* The premises for students' self-studies are subject to **MANDATORY** mention

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

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 sources

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System (RUDN ELS) http://lib.rudn.ru/MegaPro/Web
- EL "University Library Online" http://www.biblioclub.ru
- EL "Yurayt" http://www.biblio-online.ru
- EL "Student Consultant" www.studentlibrary.ru
- EL "Lan" http://e.lanbook.com/

2.Databases and search engines:

- electronic foundation of legal and normative-technical documentation http://docs.cntd.ru/
- Yandex search engine https:// www .yandex.ru/
- Google search engine https://www.google.ru/
- Scopus abstract database http://www.elsevierscience.ru/products/scopus/

*Training toolkit for self- studies to master the course *:*

1. The set of lectures on the course Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов.

2. Guidelines for students on the development of the course "Comprehensive analysis of processing, storage and marketing of hydrocarbons / Комплексный анализ переработки, хранения и сбыта углеводородов".

*The training toolkit and guidelines for the course are placed on the course page in the university telecommunication training and information system under the set procedure.

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