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

2025

1. COURSE GOALS

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)
SPC-1	Able to use theoretical knowledge when performing technological scientific research in the field of development, transportation and processing of oil and gas	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 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 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
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	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 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 SPC-5.3 Has the methodology for preparing primary reporting, including work schedules, instructions, plans, estimates, applications for materials, equipment according to approved forms

3. ACADEMIC 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 that contribute to the achievement of the expected learning outcomes as the course results

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
SPC-1	Able to use theoretical knowledge when performing technological scientific research in the field of development, transportation and processing of oil and gas	*Advanced oil and gas processing equipment and product quality management***; Geoinformation Systems and Applications;	Research Work; Pre-graduation Practical Training;
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	*Advanced oil and gas processing equipment and product quality management**; Modern aspects of geological and geophysical research in the oil and gas industry; Modern stream in oil and gas processing in Russia**; Technologies for developing prospective hydrocarbon reserves; Technological practice (educational) / Технологическая практика (учебная); Technological practice (industrial) / Технологическая практика (производственная);*	Pre-graduation Practical Training;

* - filled in in accordance with the matrix of competencies and the Higher Education Programme

4. COURSE WORKLOAD

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.	Semester(s)
		3
Contact academic hours, acc .	*54*	*54*
including:		
Lectures	18	18

Type of study work		TOTAL, acc.	Semester(s) 3
Laboratory work			
Seminars (workshops/tutorials)		36	36
Self-study (ies), academic hours		*99*	*99*
Evaluation and assessment (exam or pass/fail grading)		*27*	*27*
The course total workload	acc.hrs.	**180**	**180**
	credits	**5**	**5**

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, Seminar
	Topic 1.2. Trends in the development of the world petrochemical industry	Lecture, Seminar
Section 2 Oil and Gas Storage	Topic 2.1. Underground natural gas storage	Lecture, Seminar
	Topic 2.2. Stabilization and processing of gas condensates	Lecture, Seminar
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, Seminar

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. 2030 A set of specialized furniture; interactive panel	
Seminar	Computer class No. 2033 Set of specialized furniture; PC, telepanel	
For self-study	Classroom for conducting seminar-type classes: room. No. 2037 Set of specialized furniture; chalkboard; projector, laptop	

7. RESOURCES RECOMMENDED FOR COURSE

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 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/
- EL "Trinity Bridge"

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- EL "Yurayt" http://www.biblio-online.ru
- EL "Student Consultant" www.studentlibrary.ru
- EL "Lan" http://e.lanbook.com/
- EL "Trinity Bridge"

Learning toolkits for self- studies:

1. A course 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.

5. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL AS COURSE RESULTS

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

DEVELOPERS:

Professor of the Department of Mineral Developing and Oil&Gas Engineering	Kapustin V.M.
position, educational department	name and surname

Head of Department:

Head of the Department of Mineral Developing and Oil&Gas Engineering	Kotelnikov A.E.
position, educational department	name and surname

Head of Educational Programme:

Professor of the Department of Mineral Developing and Oil&Gas Engineering	Kapustin V.M.
position, educational department	name and surname