

Educational program annotation

38.04.02_15 Management in the oil and gas complex

Program field:	38.04.02 Management
Master's program:	38.04.02_15 Management in the oil and gas complex
Qualification:	master

1. List of structural units in the program

The master's program in the field 38.04.02 Management is implemented at the Institute of Industrial Management, Economics and Trade, graduating from the Graduate School of Business and Management.

In the implementation of the Master's program there are involved Graduate School of Business and Management, Graduate Linguistics and Translation school, as well as the Graduate School of Economy Basics and Management, who teach disciplines of the curriculum: for the Graduate School of Business and Management there are fixed profile courses for the direction and basic educational programs, for the Graduate Linguistics and Translation school - discipline "Foreign language in professional communication", teachers of the Graduate School of Economy Basics and Management teach "History and methodology of science."

2. Mission and goals of the educational program

The mission of the main educational programs included in the cluster is to train highly qualified management personnel capable of solving complex problems of the professional sphere, including through the use of information and communication technologies, the integration of engineering and economic education, as well as the development of personal growth skills.

The mission of the program corresponds to the tasks, standing in front of the domestic enterprises and is in training highly qualified specialists of higher management levels that can apply the methods of scientific work when solving management problems.

The purpose of the main educational program 38.04.02_15 "Management in the oil and gas complex " is the professional training of highly qualified specialists in the field of 38.04.02 "Management". The study of the basic disciplines of the direction 38.04.02 "Management" allows you to apply the methods of scientific work in solving management problems at the enterprises of oil and gas industry of Russia. The objectives of the program are determined by the need to train highly qualified specialists with theoretical knowledge and practical skills in the field of economics and management of oil and gas complex for the enterprises of rapidly developing oil and gas industry, as well as related enterprises of the fuel and energy complex (FEC) of the country.

The peculiarity of this educational program is its close relationship with the industry partner, PJSC Gazprom Neft, for which SPbPU is the supporting university. In addition, partnership relations have been established with major research centers such as VNIGRI and VNIGNI. Within the framework of this educational program, SPbPU not only provides target training of

managerial staff with subsequent guaranteed employment, but also conducts joint R&D, including projects in the field of Arctic deposits development, development of digital technologies in oil and gas complex based on the university supercomputer.

SPbPU is the only university in St. Petersburg and the North-Western region that started training managerial staff for the oil and gas industry more than 8 years ago. This allows, under conditions of transferring the head offices of major oil and gas companies to St. Petersburg, both training and retraining of specialists in the region with close interaction with employers and guaranteed places of industrial as well as pre-graduation practice.

1. The program prepares graduates for work in the following positions: business analyst, business development director, executive director, commercial director. The training program is aimed at the formation of skills in students that correspond to trends in the labor market - a complex of soft skills (the ability to work in a team and be aware of their role, give reasoned opinion, the ability to solve problems and think critically) and hard skills (skills in data management and analysis, building and evaluating models, the ability to use various statistical packages, basic programming skills).

2. Involvement in the training process of leading practitioners from various spheres and sectors of the economy, in order to transfer masters of practical experience in managing enterprises of various industries and forms of ownership, can significantly increase the level of attractiveness of the program for applicants, and ensure that students (students) receive relevant professional skills, which is an undoubted competitive advantage of graduates in the labor market.

3. Integration into the curriculum of disciplines as a basic module, focused on deepening knowledge in the field of management, and a profile focus, focused on solving practical cases and analytical problems on the examples of existing organizations that are implementing and using digital technologies in business management solutions in business.

4. A unique combination of profile disciplines allows to form a system of "hard", professional skills for masters to make managerial decisions on the management of oil and gas complex enterprises, to assess their socio-economic efficiency; to carry out organizational and management activities in the development of oil and gas complex enterprises; to develop organizational and economic mechanisms for industrial development of the oil resource base of the Arctic territories, including conducting risk analysis Develop industrial and transport-logistic projects of field development, including the implementation of activities for the management of intelligent fields; apply relevant digital technologies in the development of oil and gas fields; summarize and critically evaluate the results obtained by domestic and foreign researchers; identify and formulate current scientific issues; have the ability to conduct independent research in accordance with the developed program; have the ability to apply

5. The use of modern software products during training, including Microsoft Project, a software product for managing complex, multi-stage

projects; Excel software product, allowing to apply statistical methods of research during data analysis.

6. Combining both classical approaches and teaching methods (lectures and seminars), as well as new, active methods, case sessions, participate in scientific and practical conferences with a view to be able to explore and exchange experience with representatives of other universities, number, foreign, and practitioners from the real sector of the economy.

3. Requirements

Persons with higher education of any level, the presence of which is confirmed by a document of the established form, are allowed to master the MEP. Admission to training is carried out for the first year. The procedure and conditions for admission are regulated by the Admission Rules adopted by the decision of the Academic Council of SPbPU dated October 26, 2020 and approved by Order No. 1696 dated October 29, 2020.

4. Areas of professional activity and (or) areas of professional activity in which graduates who have mastered the educational program can carry out professional activities:

01 Education and science (in the areas of professional and additional professional education; scientific research).

Graduates can carry out professional activities in other areas and (or) spheres of professional activity, provided that their level of education and acquired competencies correspond to the requirements for employee qualifications.

5. Type (types) of tasks of professional activity, for the solution of which the graduate should be ready:

- organizational and managerial;
- research;
- analytical.

6. Professional standards, in accordance with which OPOP VO is developed:

At the recommendation of representatives of employers, this educational program is based on the analysis of experience

7. Structure and content of MEP

The educational program is implemented through a system of disciplinary modules and a module of state final certification.

The Master's program consists of the following types of modules:

General scientific module (Fundamentals), within which the development of universal, general professional, as well as mandatory professional competencies takes place. The general scientific module includes compulsory disciplines: History and methodology of science; Foreign language in professional activities; Scientific discourse.

Professional modules (Professional), within the framework of which the development of universal, general professional, as well as professional

competencies takes place, which include:

a) basic module of the direction - a set of disciplines (modules) that form knowledge, skills and abilities in the direction of training.

b) a module of a profile orientation, which determines the orientation of training.

Mobility module is an educational cycle within the framework of an educational program, which represents an additional educational trajectory for students in addition to training in the main educational direction.

The module of project activity (Project) is an independent activity of students, focused on solving a certain practically or theoretically significant problem, implemented in the framework of disciplines, practices, research work.

The module "State final certification" includes: the defense of the final qualifying work and the state exam (s) (if any).

Optional disciplines aimed at the socio-cultural development of students.

The learning outcomes by disciplines (modules) are correlated with indicators of achievement of competencies and ensure the gradual formation of the competencies of the graduate of MPEP HE.

Structure and scope of the educational program

The structure of MPEP HE	Volume MPEP HE (w .)
BLOCK 1 "Disciplines (modules)"	60
BLOCK 2 "Practice"	54
BLOCK 3 " State final certification"	6
Total	120
BLOCK 4 "Electives"	4

7.1. Competence-based curriculum and curriculum

The competence- based curriculum includes two interrelated components: competency- forming and disciplinary-modular. The competence- forming part of the curriculum connects all the mandatory competencies of the graduate with the sequence of studying all academic disciplines, practices, etc. The disciplinary-modular part of the curriculum reflects the logical sequence of mastering the elements of MEP that ensure the formation of competencies.

The curriculum defines a list, labor intensity (in credit units and academic hours), sequence and semester distribution of disciplines (modules), practices, forms of intermediate certification of students, state final certification, the volume of contact work of students with a teacher (by type of training) is highlighted and independent work of students.

The educational calendar indicates the periods of the types of educational activities and the periods of vacations.

7.2. Work programs of disciplines (modules), practice programs

The working program of discipline (module) is developed according to the SIES, the curriculum, the matrix of competencies, which reflects the competence of all levels, indicators to them, as well as descriptors, provide

them achievement.

7.3. Practice programs

Practices are a mandatory section of MEP and are a type of training sessions directly focused on the professional and practical training of students. Practices consolidate the knowledge and skills acquired by students as a result of mastering theoretical courses in special disciplines, develop practical skills and contribute to the integrated formation of general cultural and professional competencies of students.

In the MEP "Management in the oil and gas complex" the following types and types of practices are established:

educational practice:

- practice to acquire primary professional skills.

production practice:

- practice to acquire professional skills and professional experience;
- research work;
- undergraduate practice.

7.4. Funds of assessment tools for the current and intermediate certification of students in the discipline (module), practice

The fund of assessment tools for conducting the current and intermediate certification of students in the discipline (module), practice is included in the work program of the discipline (module) and the practice program, respectively, and is drawn up in the form of attachments to the programs.

7.5. Organization of research work of students

Research work carried out Master om under the guidance of the scientific supervisor. The topics of research works correspond to the focus of the main educational program and are determined in accordance with the topic of the master 's final qualification work. The purpose of the research work is to integrate the educational process with the development of the professional sphere of activity in the areas of training masters to ensure the formation of students' research competencies necessary in conducting research and solving professional problems. The documents regulating the organization of students' research work are developed and executed in accordance with the University's Educational Policy, EMS in the direction 38.04.0 2 Management and the requirements of professional standards.

Master's research work includes:

1. Dispersed research work.
2. Concentrated research work.

Documents regulating the organization of research work of students, designed and executed in accordance with the work programs of disciplines "dispersed RW", " concentrated RW" and methodical recommendation pits and on registration of scientific and research work of students reporting.

7.6. Fund of assessment tools for state final certification

The fund of assessment means for the state final certification is developed for the implementation and protection of the final qualifying work. In the course of state final certification, the degree of compliance of the formed competencies of graduates with the requirements of this

educational standard and the implemented educational program is assessed.

The fund of assessment means includes: the program of state final certification, including requirements for final qualifying works and the procedure for their implementation, criteria for assessing the results of defense of final qualifying works.

8. Places of practice and employment

Students can have practical training at Gazprom Neft, Gazprom Neft-Sakhalin, VNIGRI, Gazprom Transgaz Saint Petersburg, and Kineft. There are a number of long-term agreements on internships between SPbPU and PJSC Gazprom Neft, JSC VNIGRI, and OOO Kineft.

St. Petersburg Peter the Great Polytechnic University has the status of a supporting university of Gazprom Neft PJSC.

Since 2015, by order of PJSC Gazprom Neft, the University has been providing targeted training under the "Procurement Management in the Oil and Gas Industry" program.

Applications for graduates are received from the city and regional enterprises from PJSC Gazprom Neft, JSC VNIGRI and many others.

9. Material and technical base for educational and scientific activities

To implement the training of masters in the direction 38.04.02 Management, IIMET has:

- auditoriums for lectures, practical classes;
- research laboratories;
- classrooms for independent work of students.

For the implementation of the basic educational program "Management in the oil and gas complex" for the preparation of masters in IIMET there are laboratories equipped with the necessary equipment:

Research Laboratory "Digital Technologies in Business and Education". The research laboratory was created in order to widely attract the teaching staff, graduate students, undergraduates and students. The use of the Laboratory is a necessary element of the implementation of the research and educational process. The laboratory was organized to carry out research projects funded from competitions for grants from the Russian Humanitarian Science Foundation, RFBR and other sources. Research carried out in the Laboratory is included in research plans.

The book value of the equipment is RUB 902,968.20.

Educational laboratory "Modern management technologies». The educational laboratory was created to provide the educational process with information and technical means and programs, as well as for the use and implementation of information technologies in scientific and innovative activities.

The book value of the equipment is 1,692,480.0 0 rubles.

The material and technical base of the educational program of the magistracy ensures the conduct of all types of classes, disciplinary and interdisciplinary training, laboratory, practical and research work of students, provided for by the curriculum and corresponding to the current

sanitary and fire safety rules and regulations.

Today, student education and research is carried out using databases on various indicators of the functioning of organizations.

Equipping the laboratory allows you to solve the most modern tasks in the field of strategic planning of the company's activities, collecting, processing and analyzing information about the factors of the external and internal environment of the organization for making management decisions.

10. Competitive advantages of graduates and possible places of employment

The training of undergraduates is carried out on the basis of IIMET, laboratories, computer classes, using modern interactive teaching methods. A new format of interaction with students is the conduct of open lectures and master classes by leading specialists from enterprises - industry leaders.

Within the framework of the program implementation on a regular basis in accordance with the schedule leading practitioners, such as Doctor of Economics, Head of Import Substitution Program of PJSC "Gazprom Neft" A.M. Fadeev, are holding classes with master's students, D.M. Metkin, Head of Marketing Department of JSC "Geologorazvedka", A.V. Petukhov, M.D., Director for Prospective Development of NGT- ENGINEERING LLC, A.S. Prischepa, Deputy Department Head at "Gazprom dobycha shelf Yuzhno-Sakhalinsk" LLC.

The graduates of the program will not only acquire practical knowledge, but will also find their future place of employment while mastering the competence of the discipline, taught by the practical trainers. Part-time employment is possible already during the period of training, so Gazprom Neft and VNIGRI provides part-time employment for our master's students.

11. The international cooperation

Mainly international partners are leading foreign universities, European business schools and universities of applied sciences, including one implementing similar educational programs.

Close integration is also carried out with foreign consortia of partners, jointly implementing international research projects within the framework of, for example, cross-border cooperation programs, " Interreg Baltic Sea Region ", " Erasmus +".

Cooperation and networking with international partners makes it possible to improve the quality of training of specialists through the development of academic mobility programs and inclusive learning, the use of advanced foreign experience, the attraction of foreign professors from leading universities and research centers, and the attraction of students for the implementation of research projects.

12. Main scientific directions and schools

Teachers involved in the implementation of the educational program are engaged in research activities as part of the scientific directions on the topics: development of plans and programs for reforming and developing the mineral resource base of the country and the fuel and energy complex;

evaluation of the effectiveness of implementing advanced innovative technologies at oil and gas companies; digital technologies in field development; technologies and organizational and economic schemes for the development of shale oil and other unconventional sources of hydrocarbons; improvement of procurement activities at oil and gas companies; models of digital transformation of oil and gas.

13. The most significant results and achievements

The main scientific and practical results of joint research of teachers and students within the framework of this educational program are presented in the reporting documentation on the following grants and contracts:

RFBR grant № 20-110-50325/20 "Review of approaches to interstate cooperation of circumpolar countries in the development of the Arctic".

Contract No. 143752901 "Representation of design and manufacture of a construction object under the conditions of permafrost instability: the life cycle of a construction object in the form of an alternative graph".

Grant RFF 14-38-000092014 "Program-targeted management of the complex development of the Arctic zone of the Russian Federation".

RFBR grant 17-02-00248 "Innovation factors in the development of the Arctic shelf and import substitution problems".

Analytical review of the current state of domestic achievements in the field of geological and geophysical works on hydrocarbon raw materials. Ministry of Natural Resources of the Russian Federation, state registration number 1771025628918000017.

Grant RFF № 14-38-00009 "Program-targeted management of the integrated development of the Arctic zone of Russia".

Grant RFBR № 16-32-00040 "Theoretical and scientific-methodological bases of the management of industrial development of the Far North regions".

Contract No. 20-110-50325/20. Review of approaches to interstate cooperation of circumpolar countries in the development of the Arctic.

**Annotations of educational program elements 38.04.02_15 Management in the oil and gas complex
(subjects, practice and State Final Examination)**

Foreign language in professional communication				
Objectives:	The purpose of the discipline is to achieve practical knowledge of a foreign language, which allows to use it in their future careers and research work, as well as in everyday conversation; in creating a base for correct understanding, translation and processing of foreign language texts; in the development of communicative competence of the academic, which allows the student to represent scientific production (articles, essays, reports, etc.) in an academic environment.			
Content:	<ol style="list-style-type: none"> 1. The profession of an accountant. Financial and managerial aspects. Accounting standards and audit. Discussion of negotiations to conclude an alliance. 2. The main aspects of accounting practice. Accounting and financial reporting. Discussion of negotiations on the conclusion of an alliance. 3. Assets, liabilities, equity of the company. Tangible and intangible assets. Discussion of negotiations to conclude an alliance. 4. Accounting for purchases and cash payments. Main log book. Business accounts. Discussion of negotiations on the conclusion of an alliance. 5. Breakeven point. Overheads. Fixed costs. Discussion of negotiations on the conclusion of an alliance. 6. Inventories, accounting systems, valuation and accounting of stocks of company divisions. Discussion of negotiations on the conclusion of an alliance. 7. Banking practice. Financial statements. Automated accounting systems. Discussion of negotiations on the conclusion of an alliance. 8. Audit of a company as a check of the correctness of its performance indicators. Discussion of negotiations on the conclusion of an alliance. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
		48	50	10
ECTS Credits	3 ECTS			
Assessment:	Graded assessment			
History and Methodology of Science				
Objectives:	The purpose of studying the discipline is to form students' methodological and scientific culture, a system of knowledge, abilities and skills in the field of organizing and conducting scientific research; obtaining knowledge of the basics of methodology, methods and concepts of scientific research; the formation of practical skills and abilities in the application of scientific methods; education of moral qualities, instilling ethical norms in the process of carrying out scientific research.			
Content:	<ol style="list-style-type: none"> 1. The emergence of science. About ENERAL position. 2. Scientific knowledge during the Middle Ages and Renaissance. 3. Arab Scientific Heritage. 			

	4. Classical science of XVIII-XIX centuries. 5. Concept of scientific research. 6. Methods of theoretical and empirical research. 7. The concept of systemic methodology. 8. Communications and their specificity in modern science .			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
		16	83	9
ECTS Credits:	3 ECTS			
Assessment:	Pass/Fail assessment			
Digital resources in scientific research				
Objectives:	The purpose of studying the discipline is to acquire skills in working with information: problem statement; formulation of goals and objectives; substantiation and choice of directions for searching and extracting information for conducting scientific research; in the acquisition and skills and understanding of the various types of digital resources needed to conduct scientific research; in acquiring the skills of conducting scientific research.			
Content:	1. Working with Information: problem statement; formulation of goals and objectives; substantiation and choice of directions for searching and extracting information for conducting scientific research 1.1. Information for scientific research. 1.2. Database. Base of publications. 2. Types of digital resources and stages of scientific research. 2.1. Types of scientific research. 2.2. Types of Digital Resources Needed for Scientific Research. Stages of scientific research. 2.3. Definition of the research problem and formulation of the topic. 3. Research Skills. 3.1. The problem in a broad sense. 3.2. Systematic problems of the global level. 3.3. Modeling a scientific problem by methods of mathematical formalization: well-structured or quantitatively expressed problems. 3.4. Modeling a scientific problem by methods of mathematical formalization: poorly structured or poorly quantitatively expressed problems.			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	2+14(Э)	14+12(Э)	62	4
ECTS Credits:	3 ECTS			
Assessment:	Examination			

Research methods in management				
Objectives:	The purpose of studying the discipline is to use both existing and implementation of new tools and research methods in solving management problems ; c and identification of problems in the field of management and search for information about the problem ; assessing the reliability of the information received and making decisions when there is a lack of information ; in the receipt and information on technologically complex or innovative markets and products .			
Content:	<ol style="list-style-type: none"> 1. Research in Management: Basic Concepts and Problems 2. Explore data using a mixture of quantitative and qualitative analysis methods: <ol style="list-style-type: none"> 2.1. Q-methodology. 2.2. Content analysis. 2.3. Conjoint analysis. 2.4. Perception maps. 3. Special tasks and areas of research: <ol style="list-style-type: none"> 3.1. Personnel research. 3.2. Strategy and tactics of searching for market information. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	16	31	9
ECTS Credits:	2 ECTS			
Assessment:	Pass/Fail assessment			
Modern Strategic Analysis				
Objectives:	The purpose of studying the discipline is to teach students, when conducting strategic analysis, to make sound organizational and managerial decisions, to assess their operational and organizational effectiveness, and social significance, to ensure their implementation in conditions of complex (including cross-cultural) and dynamic environment ; To teach students to apply modern methods of strategic analysis of the organization's activities, including assessing the industry and competition in it .			
Content:	<ol style="list-style-type: none"> 1. The concept of strategy and the role of strategic analysis in the activities of the organization: <ol style="list-style-type: none"> 1.1. The essence, goals, basic principles of the development of organizations. 1.2. Strategic development of the organization 2. Directions, methods and models of modern strategic analysis: <ol style="list-style-type: none"> 2.1. Competition and competitiveness 2.2. Strategic Analysis Methods and Models 2.3. Industry analysis 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	32	42	18

ECTS Credits:	3 ECTS
Assessment:	Graded assessment

Managerial Economics

Objectives:	The purpose of studying the discipline is to form students' deep knowledge of the patterns of development of the modern economy and the general principles of behavior of firms in market conditions; in the formation of skills for the development of rational management decisions on the optimal distribution of limited resources between competing areas of work, both in the private and public sectors of the economy.
Content:	<ol style="list-style-type: none"> 1. An introduction to management economics. The firm and its behavior 2. Demand analysis and consumer behavior 3. Demand functions and elasticity of demand. Demand assessment. 4. Theory and evaluation of production. 5. Theory and cost estimation. 6. Market structure. Pricing decisions and 7. production volumes in different types of markets. 8. Economic analysis of long-term investments in conditions 9. certainty and risk analysis. 10. The economic role of government.

Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	32	42	54

ECTS Credits:	4 ECTS
Assessment:	Examination

Corporate financial reporting

Objectives:	The purpose of studying the discipline is to economically competently analyze the financial statements of corporations for making subsequent management decisions in the production of non-economic activities of industrial corporations; about elaborated and effectively apply existing guides and develop new methods and models for solving of Adachi in the professional field.
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Content:	<p>Economic content and functions of corporate finance Problems of formation and standardization of corporate financial reporting Modigliani-Miller theorems and their implications for the theory of corporate finance. Compromise models of capital structure formation Stakeholder theory and corporate value The market for corporate control: mergers and acquisitions Problems, limitations and applicability of recommendations of various theories of capital structure.</p>			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	32	42	54
ECTS Credits:	4 ECTS			
Assessment:	Examination			
Corporate Finance				
Objectives:	<p>The purpose of studying the discipline is to economically competently explain the essence of the methods and models used and substantiate the need for their application in ensuring the competitiveness of the management of production and economic activities of industrial corporations; about bosnovanno and effectively apply existing and develop new methods and models for solving of Adachi in the professional field.</p>			
Content:	<ol style="list-style-type: none"> 1. Economic content and functions of corporate finance 2. Modigliani - Miller theorems 3. Stationary Ratio Models 4. Asymmetric information models 5. Stakeholder theory and corporate value 6. The market for corporate control: mergers and acquisitions 7. Problems, limitations and applicability of recommendations of various theories of capital structure. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	32	42	54
ECTS Credits:	4 ECTS			
Assessment:	Examination			
Logistics and supply chain management in the oil and gas complex				
Objectives:	<p>The purpose of the discipline is to develop students' professional competencies in the field of logistics management in procurement, production, distribution, transportation, warehousing and inventory management at oil and gas enterprises; develop students' knowledge of the basic principles of supply chains organization in the oil and gas complex and their effective management; develop skills and abilities to analyze problems in the field of logistics of procurement, production and distribution, develop effective proposals for their</p>			

Content:	<p>1. Introduction to logistics and supply chain management. 1.1 Concept, objectives and functions of logistics. Basic concepts and Terms and concepts of logistics. 1.2 Logistics systems and their elements. Modern trends in logistics development. Modern trends in the development of logistics. 2. Purchasing logistics. 2.1 Goals and objectives of procurement logistics. Principles and methods of selecting Suppliers, managing relationships with suppliers. 2.2 Organization of supply chain management at oil and gas enterprises.oil and gas companies. 3. Distribution and sales logistics. 3.1 Goals and objectives of supply chain management in oil and gas enterprises. 3.1 Goals and objectives of distribution logistics. Role and functions of distribution roles and functions of distribution channels. Types of intermediaries. 3.2 Goods warehouses and distribution centers. Features of trade in petroleum products. Features of petroleum products trade. 4. Transport and customs logistics. Essence and objectives of transport logistics. Customs logistics as an integral part of foreign economic activity. Foreign economic activity. 5. Logistics of stocks and warehouses 5.1 Role and functions of inventories in the enterprise. Types of inventory. 5.2 Organization of warehouse management at oil and gas enterprises. complex .</p>			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	16	22	18
ECTS Credits:	2 ECTS			
Assessment:	Graded assessment			
Logistics and supply chain management in the oil and gas complex				
Objectives:	The purpose of studying the discipline is to teach students the theoretical foundations of process management, modeling and analysis of business processes; in the acquisition and practical skills of modeling business processes using special software; in providing the basis for the training of future specialists in the field of modern information technologies			
Content:	<p>1. Process approach to management. 2. Business process description methodologies: 2.1. Business process and its components. 2.2. General principles of modeling activities. 2.3. Process modeling notations. 2.4. Organizational structure modeling. 3. Designing an integrated enterprise management system. 3.1. The strategic complex of the enterprise 3.2. Reengineering of business processes .</p>			

Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	32	51	9
ECTS Credit:	3 ECTS			
Assessment:	Examination			
Economics and management at oil and gas enterprises				
Objectives:	The objectives of the discipline is to form students' knowledge of the technological and economic aspects of technological process management refining and petrochemical management; formation of knowledge and understanding of the issue of efficiency of technological decisions in oil and gas companies; formation of skills in processing and analysis of information in oil and gas companies.			
Content:	1. Introduction to oil and gas industry management. Current control is carried out with the help of control questions and reports, on the based on individual topics issued by the instructor. 2. Planning the activities of the subdivisions of the enterprises of oil and gas sector enterprises. Current control is carried out with the help of Control with the help of control questions and reports, on the basis of individual topics, issued by the teacher. Basics of oil and gas enterprise management and analysis its work. The current control is carried out with the help of Control questions and reports, on the basis of the individual topics given by the teacher.			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	48+6	41	33
ECTS Credit:	4 ECTS			
Assessment:	Examination, Course project			
Legal framework for subsoil use in the oil and gas complex				
Objectives:	The purpose of the discipline is to provide students with a complex of knowledge for a comprehensive and in-depth understanding of the economic and legal foundations of the complex rational development of natural resources and protection of mineral resources in the oil and gas industry; study of the forms and tools to regulate modern legal relations of mineral resource use arising in the geological study, use and protection of mineral resources of the Russian Federation; acquire economic and regulatory knowledge and skills necessary to work			
Content:	Characteristics of the oil and gas complex. Aims and methods of legal regulation in the Mining Law. 2. The category of subsoils. The main legislative acts of regulation of Subsoil use. 3. Rights and obligations of subsoil users. Forms of state management of subsoil use.			

	<p>4. Licensing of subsoil use - types and functions. State bodies that perform licensing functions.</p> <p>5. Monitoring and control over the rational use of subsoil and Environmental protection</p> <p>6. Taxes and payments on geological study and industrial development of oil Geological survey and industrial development of oil and gas fields.</p> <p>7. Legal regime of information on subsoil. Types of information about Types of subsoil information, their accounting and registration.</p> <p>8. Legal regulation of oil and gas production on conditions of</p> <p>8. Legal regulation of oil and gas extraction under conditions of production sharing agreement (PSA).</p> <p>9. Legal regulation of studying and development of hydrocarbon Hydrocarbon raw materials of the shelf and the open sea</p> <p>10. Modern concepts, methods and development of regulatory and legal Subsoil use policy in the oil and gas complex</p>			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
		32	94	18
ECTS Credit:	4 ECTS			
Assessment:	Graded assessment			
Global oil and gas markets				
Objectives:	The purpose of the discipline is to develop students' professional competencies in the study of oil and natural gas markets; development of skills and abilities to analyze the oil and gas market and justify the marketing strategy of oil and gas companies.			
Content:	<p>1. World oil and gas market</p> <p>1.1 General characteristics of the world oil market</p> <p>1.2 General characteristics of world gas market</p> <p>1.3 Trading on international oil and gas exchanges</p> <p>Regional basic oil and gas markets 2.1.</p> <p>2.1 US Hydrocarbon resources market</p> <p>Hydrocarbon resources market in Europe</p> <p>Hydrocarbon resources market in Asian-Pacific region 2.3.</p> <p>3. Russian companies on world oil and gas markets</p> <p>3.1 Largest oil and gas companies of the RF and their place on the world hydrocarbon crude hydrocarbons world market</p> <p>3.2 Marketing strategies of russian oil and gas companies on the world oil</p> <p>3.2 Marketing strategies of Russian oil and gas companies on the world oil and gas market.</p>			

Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	32	42	18
ECTS Credit:	3 ECTS			
Assessment:	Graded assessment			
Automation and control systems in the oil and gas industry				
Objectives:	The purpose of the discipline is to organize the development and implementation of measures to introduce advanced techniques and technology, improving the use of resources of the organization to improve the efficiency of production processes.			
Content:	<ol style="list-style-type: none"> 1. Technical means of automation systems and automated control systems of technological processes. Management and its types. 2. Information and its role in management 3. Classification of automatic control systems Technical means of obtaining information <ol style="list-style-type: none"> 5. Actuating devices and mechanisms 6. Microprocessor technology. Fundamentals of microprocessor technology. 7. Signal converters. Architecture of microprocessor systems. 8. Means of transferring and processing information. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	16	49	27
ECTS Credit:	3 ECTS			
Assessment:	Examination			
Assessment of the economic efficiency of innovative projects in oil and gas companies				
Objectives:	The purpose of the discipline is to form students' knowledge of methods and methods of calculating the economic efficiency of innovative projects in the oil and gas sector; formation of knowledge and understanding of the issue of different components of efficiency from innovative projects in oil and gas companies; formation of skills to search for common and specific risks and their reduction, calculation of performance indicators in the oil and gas sector.			
Content:	<ol style="list-style-type: none"> 1. Peculiarities of innovation implementation in oil and gas companies 2. Risks and methods of their reduction in the oil and gas sector 3. Problems in the implementation of innovative projects and methods of their solutions 4. Types of efficiency when implementing projects in oil and gas companies and methods of their calculation 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam

	16	32	69	27
ECTS Credit:	4 ECTS			
Assessment:	Examination			
Fundamentals of work in the UIEE				
Objectives:	The purpose of mastering the discipline is to study the principles of teaching in the electronic information and educational environment of the university. As a result of studying the discipline, students must confidently master the skills of gaining access to electronic information and educational resources and personal services.			
Content:	<ol style="list-style-type: none"> 1. E-learning at SPbPU. Electronic information and educational environment and its components. Personal services for students. 2. Online courses in the educational process. Resources of the information and library complex 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	2	4	26	4
ECTS Credit:	1 ECTS			
Assessment:	Pass/Fail assessment			
Project Management in the Oil and Gas Complex				
Objectives:	The purpose of the discipline is to form professional competencies, the totality of which will provide the formation of basic skills in the field of design methodology and project management in the oil and gas industry.			
Content:	<ol style="list-style-type: none"> Basic concepts and terms in project management 2. Classification of projects in the oil and gas sector 3. Types of information in the field of oil and gas. Methods of their storage and transfer. 4. The life cycle of a field. 5. Design methodology. 6. Features of management of oil and gas projects. 7. The world market of project financing in the oil and gas complex. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	16	49	27
ECTS Credit:	3 ECTS			
Assessment:	Examination			
Innovative methods and technologies for the development of hydrocarbon raw materials				
Objectives:	The purpose of the discipline is to study the theoretical foundations and acquire practical skills in developing strategies for oil and gas companies, taking into account technological innovations, as well as developing			

	competence in technical and economic evaluation and the use of advanced technologies and business processes in the preparation of reserves and field development, transportation and processing of oil and gas; to obtain in-depth knowledge of modern methods of enhanced oil recovery and methods of well stimulation; to receive in-depth			
Content:	<ol style="list-style-type: none"> 1. Modern technologies of enhanced oil recovery. 2. Modern methods and methods of flow enhancement in wells. 3. the intelligent well, the intelligent field. Fundamentals of creating a virtual field. 4. Types and methods of controlling the development of the oil and gas field. 5. Methods and methods of intellectual regulation and management of the process of oil and gas field development. 6. The information base and practical implementation of the management and monitoring of oil and gas field development. 7. Technological clusters of competitiveness in the oil and gas complex. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	16	16	22	18
ECTS Credit:	2 ECTS			
Assessment:	Graded assessment			
Innovative methods of oil and gas exploration				
Objectives:	<p>The purpose of the course "Innovative methods of oil and gas exploration" is to study modern foreign and domestic technologies used in oil and gas exploration and methods of evaluation of geological and economic efficiency of geological exploration. The course develops technological and geological and economic knowledge necessary for solving problems related to increasing oil and gas exploration and reproduction of the mineral resource base of hydrocarbon raw materials in Russia. The purpose of the discipline is to form knowledge about the structure of oil and gas deposits, to familiarize students with the basic provisions of the theory of oil and gas deposits formation, patterns of hydrocarbon deposits in the Earth's crust, the formation of a general idea of modern innovative geological and geophysical methods of prediction, prospecting and exploration of oil and gas deposits.</p>			
Content:	<ol style="list-style-type: none"> 1. General understanding of the exploration process for oil and gas. 2. Stages and stages of geological exploration for oil and gas. 3. Features of the exploration of deposits on the shelf. 4. Calculation of oil and gas reserves by various methods. 5. Unconventional oil and gas resources. 6. Methods for assessing the geological and economic efficiency of innovative methods and technologies for exploration. 7. Ways to improve the efficiency of prospecting and exploration for oil and gas. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam

	16	16	31	9
ECTS Credit:	2 ECTS			
Assessment:	Pass/Fail assessment			
Oil and gas industry process control				
Objectives:	The purpose of studying the discipline is the formation of systemic scientific fundamental knowledge and basic skills necessary for the management of technological processes of transport, processing and use of oil and natural gas; studying the principles of building modern automated control systems for technological processes; mastering the skills of controlling the main parameters and operating modes of installations and processes; obtaining practical skills in the formulation and solution of theoretical problems for the control of technological processes.			
Content:	<ol style="list-style-type: none"> 1. Introduction to the oil and gas processing industry <ol style="list-style-type: none"> 1.1. General information about the oil and gas processing industry in Russia 1.2. Overview of oil refineries in Russia 2. Technologies of oil and gas processing <ol style="list-style-type: none"> 2.1. Review of existing technologies for oil and gas processing 2.2. World experience in oil refining 3. Equipment for oil and gas processing <ol style="list-style-type: none"> 3.1. Review of existing foreign and domestic equipment used in oil and gas processing 3.2. Organization of oil refining production on the example of the oil refinery "Krichinefteorgsintez" 4. Methods for assessing the technological and economic efficiency of oil refining production <ol style="list-style-type: none"> 4.1. Methods for assessing the technological efficiency of oil refining production 4.2. Methods for assessing the economic efficiency of oil refining production 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
		32	31	9
ECTS Credit:	2 ECTS			
Assessment:	Pass/Fail assessment			
Oil business pricing and taxation system				
Objectives:	The aim of the course is to study the basics of the pricing system and the study of the Tax Code of the Russian Federation, Part II, taking into account the amendments and changes that came into force at the beginning of the study of the discipline. The course develops the economic and regulatory knowledge necessary for calculating taxes and payments collected from subsoil users engaged in geological exploration and industrial development of hydrocarbon deposits.			
Content:	<ol style="list-style-type: none"> 1. Value Added Tax (VAT) 2. Export duty (ES) and excise taxes 3. Mineral Extraction Tax (MET) 			

	4. Property tax 5. Income tax, other taxes 6. Law on Production Sharing Agreements (PSA)			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
		32	31	9
ECTS Credit:	2 ECTS			
Assessment:	Pass/Fail assessment			
Educational Foresight				
Objectives:	The purpose of mastering the discipline is to form an idea of the practice of using online learning in the modern educational process, the use of educational analytics to assess the progress of one's own educational process, and the disclosure of modern methods of constructing an educational trajectory to expand the capabilities of students. Exploring the specific uses of online courses in the educational process.			
Content:	1. Basic concepts and definitions of e-learning and online learning 1.1. Electronic information and educational resources: definition and types 1.2. Overview of educational platforms 2. Acquaintance with online resources hosted on open educational platforms. Acquaintance with foreign educational platforms. 2.1. Features of courses hosted on various educational platforms. 3. Independent study of an online resource. Mandatory study of a resource posted on a foreign platform. 3.1. Choosing a course for self-study. 4. Passing intermediate tests of an online resource to demonstrate the progress of studying the material 4.1. Integration of an online course into the educational process. 5. Working on the online resource forum 5.1. Communication in the online space.			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	2		152	26
ECTS Credit:	5 ECTS			
Assessment:	Pass/Fail assessment			
Career adaptability				

Objectives:	The purpose of mastering the discipline is to expand the area of subject knowledge of the undergraduate to increase the scope of professional activity.			
Content:	<ol style="list-style-type: none"> 1. Building a careerogram. 2. Career management in the organization 3. Self-diagnosis of personality and self-coaching. 4. Preparation and delivery of a reflective essay. 5. Intermediate control over the course (discipline). 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
	2		152	26
ECTS Credit:	5 ECTS			
Assessment:	Pass/Fail assessment			
Registration and presentation of research results				
Objectives:	The purpose of studying the discipline is to prepare masters for the correct presentation, design and presentation of the results of various types of scientific research in accordance with the requirements of GOST, regulations of the university, institute and higher school in this area.			
Content:	<ol style="list-style-type: none"> 1. Types, structure, methods of registration and presentation of the results of scientific research <ol style="list-style-type: none"> 1.1 Forms of presentation of scientific results 1.2 Basics of design and presentation of the results of scientific research. 2. Registration and presentation of the final qualifying work <ol style="list-style-type: none"> 2.1 Registration of the final qualifying work 2.2 Submission of the final qualifying work. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
		16	47	9
ECTS Credit:	2 ECTS			
Assessment:	Pass/Fail assessment			
Research work (dispersed), part 1				
Objectives:	<p>The practice is carried out in order to form and consolidate professional knowledge, skills and abilities obtained as a result of theoretical training, as well as to study production experience, acquire organizational skills and form a system of key competencies.</p> <p>The purpose of the internship is to gain experience in practical work, including independent activity at the enterprise (in the organization) and competencies in the fields and (or) spheres of professional activity.</p>			

Content:	1. Preparatory stage: 1.1. Development of an individual task. 1.2. Organizational meeting to clarify the goals, objectives, content and order of internship. 1.3. Acquaintance with the place of the practice. 2. The main stage: 2.1. Collection and processing of regulatory and legal, production and technological information. 2.2. Implementation of an individual assignment. 3. Final stage: 3.1. Preparation and execution of the practice report. 3.2. Report protection (intermediate attestation).			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
			288	
ECTS Credit:	8 ECTS			
Assessment:	Pass/Fail assessment			
Research work (dispersed), part 2				
Objectives:	The practice is carried out in order to form and consolidate professional knowledge, skills and abilities obtained as a result of theoretical training, as well as to study production experience, acquire organizational skills and form a system of key competencies. The purpose of industrial practice is to gain practical experience, including independent activity at the enterprise (in the organization) and competencies in the fields and (or) spheres of professional activity.			
Content:	1. Preparatory stage: 1.1. Development of an individual task. 1.2. Organizational meeting to clarify the goals, objectives, content and order of internship. 1.3. Acquaintance with the place of the practice. 2. The main stage: 2.1. Collection and processing of regulatory and legal, production and technological information. 2.2. Implementation of an individual assignment. 3. Final stage: 3.1. Preparation and execution of the practice report. 3.2. Report protection (intermediate attestation).			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
			288	
ECTS Credit:	8 ECTS			

Assessment:	Pass/fail examination			
Research work (dispersed), part 3				
Objectives:	<p>The practice is carried out in order to form and consolidate professional knowledge, skills and abilities obtained as a result of theoretical training, as well as for the study of production experience, acquisition of organizational skills and the formation of a system of key competencies.</p> <p>The purpose of industrial practice is to gain practical experience, including independent activity at the enterprise (in the organization) and competencies in the fields and (or) spheres of professional activity.</p>			
Content:	<p>1. Preparatory stage:</p> <p>1.1. Development of an individual task.</p> <p>1.2. Organizational meeting to clarify the goals, objectives, content and order of internship.</p> <p>1.3. Acquaintance with the place of the practice.</p> <p>2. The main stage:</p> <p>2.1. Collection and processing of regulatory and legal, production and technological information.</p> <p>2.2. Implementation of an individual assignment.</p> <p>3. Final stage:</p> <p>3.1. Preparation and execution of the practice report.</p> <p>3.2. Report protection (intermediate attestation).</p>			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
			288	
ECTS Credit:	8 ECTS			
Assessment:	Pass/Fail assessment			
Practice for obtaining primary professional skills				
Objectives:	<p>The practice is carried out in order to form and consolidate professional knowledge, skills and abilities obtained as a result of theoretical training, as well as to study production experience, acquire organizational skills and form a system of key competencies.</p> <p>The purpose of educational practice is to deepen the knowledge gained in the process of theoretical training and acquire the necessary professional skills and abilities in accordance with the chosen direction of training</p>			
Content:	<p>.Preparatory stage:</p> <p>1.1. Development of an individual task.</p> <p>1.2. Organizational meeting to clarify the goals, objectives, content and order of internship.</p> <p>1.3. Acquaintance with the place of the practice.</p> <p>2. The main stage:</p> <p>2.1. Collection and processing of regulatory and legal, production and technological information.</p> <p>2.2. Implementation of an individual assignment.</p>			

	3. Final stage: 3.1. Preparation and execution of the practice report. 3.2. Report protection (intermediate attestation).			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
			216	
ECTS Credit:	6 ECTS			
Assessment:	Pass/Fail assessment			
Practice for obtaining professional skills and professional experience				
Objectives:	The practice is carried out in order to form and consolidate professional knowledge, skills and abilities obtained as a result of theoretical training, as well as to study production experience, acquire organizational skills and form a system of key competencies. The purpose of the internship is to acquire practical work experience, including independent activity at the enterprise (in the organization) and competencies in the fields and (or) spheres of professional activity.			
Content:	1. Preparatory stage: 1.1. Development of an individual task. 1.2. Organizational meeting to clarify the goals, objectives, content and order of internship. 1.3. Acquaintance with the place of the practice. 2. The main stage: 2.1. Collection and processing of regulatory and legal, production and technological information. 2.2. Implementation of an individual assignment. 3. Final stage: 3.1. Preparation and execution of the practice report. 3.2. Report protection (intermediate attestation).			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
			324	
ECTS Credit:	9 ECTS			
Assessment:	Pass/Fail assessment			
Research work (concentrated)				
Objectives:	The practice is carried out in order to form and consolidate professional knowledge, skills and habits obtained as a result of theoretical training, as well as to study production experience, acquire organizational work skills and form a system of key competencies.			

	The purpose of industrial practice is to gain practical experience, including independent activity at the enterprise (in the organization) and competencies in the fields and (or) spheres of professional activity.			
Content:	1. Preparatory stage: 1.1. Development of an individual task. 1.2. Organizational meeting to clarify the goals, objectives, content and order of internship. 1.3. Acquaintance with the place of the practice. 2. The main stage: 2.1. Collection and processing of regulatory and legal, production and technological information. 2.2. Implementation of an individual assignment. 3. Final stage: 3.1. Preparation and execution of the practice report. 3.2. Report protection (intermediate attestation).			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
			216	
ECTS Credit:	6 ECTS			
Assessment:	Graded assessment			
Internship				
Objectives:	The practice is carried out in order to create and consolidate professional knowledge and skills, get nnyh as a result of theoretical training, as well as for the study of manufacturing experience, purchase org anizatorskih skills and key competencies formation system. The purpose of the internship is to acquire practical work experience, including independent activity at the enterprise (in the organization) and competencies in the fields and (or) spheres of professional activity.			
Content:	1. Preparatory stage: 1.1. Development of an individual task. 1.2. Organizational meeting to clarify the goals, objectives, content and order of internship. 1.3. Acquaintance with the place of the practice. 2. The main stage: 2.1. Collection and processing of regulatory and legal, production and technological information. 2.2. Implementation of an individual assignment. 3. Final stage: 3.1. Preparation and execution of the practice report. 3.2. Report protection (intermediate attestation).			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam

			324	
ECTS Credit:	9 ECTS			
Assessment:	Graded assessment			
Defense of the graduate qualification work, including preparation for the defense and the defense procedure				
Objectives:	State final certification is carried out in order to establish the level of preparedness of a graduate of a higher educational institution to perform professional tasks and the compliance of his training with the requirements of the EMS and the main educational program in the direction of training (specialty) of higher education.			
Content:	The WRC should contain the following sections: <ol style="list-style-type: none"> 1. Title page 2. The task 3. abstract 4. Content 5. Introduction 6. Main part 7. Conclusion 8. List of sources used 9. Applications. 			
Teaching and learning methods:	Lecture	Practical training	Independent study	Exam
			216	
ECTS Credit:	6 ECTS			
Assessment:				