Brief description of the study programme
38.03.05_01 Enterprise Architecture

Training direction: 38.03.05 Business Informatics
Master's program: 38.03.05_01 Enterprise Architecture
Qualification: bachelor

1. List of structural units implementing the program

The bachelor's program 38.03.05_01 Enterprise Architecture is implemented at the Institute of Industrial Management, Economics and Trade, the graduate school – Graduate School of Management and Business.

Teachers of the Graduate School of Management and Business, the Department of Fundamentals of Economics and Management, the Graduate School of Linguistics and Translation are involved in the implementation of the bachelor's program.

2. Mission, goals of the basic educational program (BEP)

The mission of the bachelor's program is to provide high-quality, affordable, competitive at the world level education, transformed through the development of scientific and educational technologies for graduates of a new formation, capable of practical implementation of the knowledge gained in science, production, and business.

The mission of the program corresponds to the tasks facing domestic and foreign organizations in the IT sector, as well as enterprises of various industry orientations.

The purpose of specialized training of bachelor's program "Enterprise Architecture" is the formation of competencies in the field of enterprise architecture development, including its components; development, implementation and maintenance of information systems and technologies; implementation of analytical support for decision-making processes for enterprise management; development and evaluation of investment projects, evaluation of the enterprise efficiency.

The uniqueness of the Enterprise Architecture program lies in its focus on the ongoing change in enterprise management models both in Russia and worldwide, caused by the digitalization processes and digital transformation of the economy.

1. Bachelor's graduates will have the knowledge, skills and abilities to work in positions in the areas of business and IT infrastructure development, in IT service management areas of various enterprises (industrial, construction, transport, trade, etc.). They also occupy a worthy place in software systems development firms, in consulting firms and in companies involved in the implementation, modernization and maintenance of information systems and digital solutions for business management.

2. Involvement in the training process of leading specialists from the IT and management sectors in order to transfer practical experience of business processes digitalization to bachelors, the use of modern

management technologies based on an integrated architectural approach to business management, and the application of an enterprise performance assessment.

3. Integration into the curriculum of disciplines both from basic module, focused on deepening knowledge in the field of management theory based on process and project approaches, and a professional module, focused on solving real cases and analytical problems on the examples of existing organizations implementing and using digital solutions for business.

4. The uniqueness of the bachelor's program is determined by a combination of managerial, economic, mathematical, social and IT disciplines, giving a holistic view of the main aspects, methods and information technologies of the enterprise management. Formed competencies allow program graduates to analyze the current state of digitalization of organizations and develop management decisions based on the results obtained.

5. A large number of disciplines are supported by standards widespread in the Russian Federation and around the world (TOGAF, PRINCE2, ITIL, etc.), technologies and tools for enterprise management: Business Studio software product, which allows auditing and reengineering of an organization's business processes; Archi modeling - a tool for modeling enterprise architecture; Microsoft Project - a software product for project management; data management tools (SQL Server Management Studio).

6. Combination of both classical teaching methods (lectures and practical classes) and new, active methods (case studies, scientific and practical activities). In teaching case studies developed jointly with the leading medical and IT companies of St. Petersburg (LLC "Netrika", LLC "SCIENCE", LLC "Gazpromneft") are used. Classes are taught both by teachers of the Graduate School of Management and Business with international certifications and by teachers with practical managerial experience in consulting and IT companies.

3. Requirements for the applicant

Persons with secondary general education are allowed to apply for bachelor's programs.

Persons with an appropriate level of education, confirmed by a document on secondary general education or a document on secondary vocational education, or a document on higher education are allowed to apply for educational program. Admission to training is carried out for the first year. The procedure and conditions for admission are regulated by the Rules for admission to bachelor's programs at the federal state autonomous educational institution of higher education "Peter the Great St. Petersburg Polytechnic University", which are approved for each year of admission.

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:

06 Communication, information and communication technologies;

as well as following spheres:

- project;

– organizational and managerial.

Graduates can carry out professional activities in other areas and (or) spheres of professional activity, in case if 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:

– project;
– organizational and managerial.

6. Professional standards in accordance with which the Basic Professional Educational Program of Higher Education is developed:

№	Conjugate professional standard (PS) or other grounds for including a professional competence (PC) in the educational program (EP) (name and details of documents)	Selected generalized labor function (GLF)	Labor function (LF), the preparation of the execution of which is directed by the professional competence (PC)
1.	06.016 Professional standard "Project manager in the field of information technology", approved by order of the Ministry of Labor and Social Protection of the Russian Federation dated November 18, 2014 No. 893n	A6. IT project management based on received project plans in conditions when the project does not go beyond the approved parameters	A/13.6. Gathering information for initiating a project in accordance with the received assignment
			A/14.6. Project planning in accordance with the received assignment
			A/15.6. Organization of project work execution in accordance with the received plan
			A/16.6 Monitoring and management of project work in accordance with the established regulations
			A/17.6. General management of changes in projects in accordance with the received assignment
			A/18.6. Completion of the project in accordance with the received assignment
			A/25.6. Coordination of requirements in accordance with the received plans

			A/27.6. Identification of stakeholders in the IT project in accordance with the assigned assignment
			A/29.6 Identification of risks of IT projects in accordance with the assigned assignment
			A/30.6 Analysis of risks in IT projects in accordance with the assigned assignment
2.	06.015 Professional standard "Information systems specialist" approved by order of the Ministry of Labor and Social Protection of the Russian Federation of November 18, 2014 No. 896n	C6. Execution of work and management of work on the creation (modification) and maintenance of IS that automate the tasks of organizational management and business processes	C/03.6. Planning communications with the customer in projects for the creation (modification) and commissioning of ISs
			C/04.6. Identification of project stakeholders
			C/06.6. Project Stakeholder Management
			C/07.6. Documenting the existing business processes of the customer's organization (reverse engineering of the organization's business processes)
			C/08.6. Development of a model of customer's business processes
			C/12.6. Requirements analysis
			C/14.6. Development of IP architecture
			C/15.6. Development of IC prototypes
			C/17.6. Development of IP databases
			C/18.6. Organizational and technological support of coding in programming languages
			C/22.6. Creation of user documentation for IS

			C/25.6. Development of technologies for integrating IS with existing IS at the customer
			C/55.6. Team building and staff development

7. Structure and content of BEP

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

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

1. Mandatory Unified Disciplinary Modules (Fundamentals):
   - general education module;
   - fundamental module;
   - foreign language learning module.
2. Professional modules (Professional):
   - compulsory basic modules of the direction;
   - directional modules (profile);
3. Elective mobility modules.
4. Module of project activity (Project).
5. State final certification - SFC.
6. Optional modules (disciplines).

The unified disciplinary module (Fundamentals) provides the development of universal, general professional, and mandatory professional competencies. The compulsory unified disciplinary module includes a general education module, a fundamental module, and a foreign language learning module. Within the framework of the unified general education module, the compulsory disciplines are studied: Life Safety, Physical Education, History, Philosophy. The unified fundamental module includes mandatory components: a mathematical module, a natural science module, an information technology module. The unified foreign language learning module includes basic training and vocational training

Professional modules (Professional), within 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 profile orientation, which determines the orientation of training.

Mobility module is an educational cycle within the educational program, which represents an 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 within 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 BPEP of HE.

Structure and scope of the educational program

The structure of BPEP of HE	Volume BPEP of HE (credits)
BLOCK 1 "Disciplines (modules)"	212
BLOCK 2 "Practice"	22
BLOCK 3 "State final certification"	6
Total	240
BLOCK 4 "Electives"	6

7.1. Competence-based curriculum and academic schedule calendar

The competence-based curriculum includes two interrelated components: competency-forming and disciplinary-modular. The competence-forming part of the curriculum connects all the obligatory 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 BEP, ensuring the formation of competencies.

The curriculum defines the 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 between students and the teacher (by type of training) and independent work of students.

The academic 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 work program of the discipline (module) is developed in accordance with the self-established educational standard of higher education in the training direction 38.03.05 "Business Informatics", approved by the decision of the Academic Council of SPbPU dated 06/26/2017, Protocol No. 6, as well as according to the curriculum for training in BEP 38.03.05_01 Enterprise Architecture.

7.3. Practice programs

Practices are a compulsory section of BEP 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 complex formation of universal, general professional and professional competencies of students.

In the bachelor's program, within the framework of educational and industrial practice, the following types of practices are established:

a) types of training practice:

practice in obtaining primary professional skills and abilities, including

primary skills and research skills;

b) types of industrial practice:

practice to obtain professional skills and professional experience;

practice in the basics of management;

practice for assessing the effectiveness of reorganization projects;

pre-graduation.

Pre- graduation practice is carried out to complete the final qualifying work and is mandatory.

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

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

7.5. Organization of project and research work of students

The project students work under the bachelor's degree programs "Business Informatics" is implemented in accordance with the educational policy in terms of management and implementation of educational programs models of higher education SPbPU. The project activity module allows students to form competencies in the implementation of projects for the development of enterprise IT architecture in accordance with the IT strategy, projects for reengineering business processes, projects for the architectural solutions implementation.

Students take an active part in project activities within the framework of the implementation of international projects together with the Rotterdam University of Applied Sciences (Netherlands) in the development and creation of mobile applications commissioned by Dutch companies (Boers & Co Fijnmetaalgroep B.V., Centraal Invorderings Bureau and Cheese Experience Gouda, etc.).

- https://business.spbstu.ru/mezghdunarodnye_uchebnye_proekty/
- https://business.spbstu.ru/news/seriya_master_klassov_upravleniya_proektami_po_metodologiyam_prince2_pmbok_scrum_kanban/
- https://business.spbstu.ru/news/poezdka_komandy_vshub_v_rotterdamskiy_universitet_prikladnyh_nauk_dlya_starta_sovmestnyh_proektov/
- https://business.spbstu.ru/news/rotterdamskie_proekty_2019_kak_eto_bylo/
- https://business.spbstu.ru/news/start_ocherednyh_rotterdamskih_proektov/

Research work is carried out in a bachelor’s degree as part of the work on the final qualifying work. The purpose of the final qualification work is to integrate the educational process with the development of the professional sphere of activity to ensure the formation of students' competencies to solving professional problems. The research results are reflected in publications within the framework of the All-Russian scientific and educational-practical conference "Fundamental and applied research in the field of management, economics and trade". The documents regulating the organization of research and project work of students are developed and executed in accordance with the Educational Policy of the University, self-

established educational standard (SEES) in the direction 38.03.05 Business Informatics and the requirements of professional standards.

7.6. Fund of rating tools for state final certification

The fund of rating tools for the state final certification is developed for the implementation and protection of the final qualifying work. In the course of the final state 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 rating tools 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 internship and employment

Students can undergo industrial practice in consulting companies, that develop and implement digital solutions for various industries enterprises. There are a number of long-term agreements on internships between SPbPU and LLC "Nauka", LLC "KORUS CONSULTING GK", LLC "Dialogue IT", etc.

Applications for graduates are received from various consulting companies, companies engaged in audit and reengineering of business processes, business analytics, project activities.

9. Material and technical base for educational and scientific activities

The material and technical base of the bachelor educational program ensures the conduction of all types of classes, disciplinary and interdisciplinary training, laboratory, practical and research work of students, provided by the curriculum and corresponding to the current sanitary and fire rules and regulations.

The list of material and technical support required for the implementation of Bachelor's programs includes:

- classrooms for lecture-type classes, seminar-type classes, group and individual consultations, monitoring and intermediate certification;
- rooms for independent work;
- rooms for storage and preventive maintenance of educational equipment;
- laboratories equipped with standard and specialized software.

To implement the training of bachelors in the specialization 38.03.05 Business Informatics at Institute of Industrial Management, Economics and Trade, the laboratories equipped with the necessary equipment are present:

- 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 RUB 1,692,480.00.

10. Competitive advantages of graduates and possible places of employment

The training of undergraduates is carried out on the basis of SPbPU.

Some of the classes with undergraduates are conducted by leading specialists of IT companies (SAP CIS LLC, LLC "Dialogue IT"). Graduates of this program possess modern technologies for the design, implementation, maintenance and development of information systems, are able to apply standards and technologies for conducting projects for the implementation and maintenance of enterprise information systems, including within the framework of general architectural solutions in accordance with the implemented enterprise management technologies, as well as evaluate the economic effectiveness of the proposed solutions implementation. All this makes the graduates of the program competitive and required by the labor market.

11. The international cooperation

The main international partner is the University of Applied Sciences Zuyd (Netherlands).

In the framework of scientific research, cooperation is carried out with the renowned researcher Kay Schröder, a lecturer from the University of Applied Sciences Zuyd (Netherlands), and co-directed by the research leader in the field of data-driven enterprise management. The result of the interaction is the availability of joint publications by Kay Schröder with the teachers of the program on the topic "Digitalization of business and the formation of digital architecture of enterprises"

As part of cooperation with partner companies, master classes and trainings are held from such companies as: Swiss Island https://www.swiss-island.ch/ and GET IT https://myget-it.com/ on the topic of IT projects management.

12. Main scientific directions and schools

The teachers involved in the implementation of the educational program are engaged in research activities within the framework of scientific areas on the topics "Integrated architectural solutions of a medical organization in the context of digitalization of healthcare", "Digital ecosystems", "Digital management models of a medical organization", "Reengineering of medical organization processes" etc.

Within the framework of grants financed by the Russian Science Foundation and the Russian Foundation for Basic Research (RSF grant "Digital transformation of Russian business: development of theory and methodology", 2019-2021; RFBR grant "Improving the economic efficiency of managing medical organizations in the context of digital transformation", 2019-2021, RFBR grant "Methodology for the implementation of end-to-end

digital technologies in the system of geographically distributed medical organizations", 2020-2022), since 2019, teachers of the Graduate School of Management and Business have been developing a theoretical and methodological basis for the design, modeling and improvement of the integrated architecture of enterprises, systems of business processes, digital architectural solutions, reference business and digital architectures for specific industries.

13. The most significant results and achievements

The results of the implementation of the bachelor's program "Enterprise Architecture" are graduates of students - more than 80 people annually. Research-oriented students continue their studies on master's programs in the direction of Business Informatics.

More than 90% of graduates are employed in their specialty, which indicates the demand for specialists in the direction of Business Informatics and the high quality of graduate training.

Annotations of the educational program elements 38.03.05_01 «Enterprise Architecture» (disciplines, practices and state final certification)

<table>
<tr><th colspan="5">Безопасность жизнедеятельности (Life safety)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of a professional safety culture, which presupposes the readiness and ability of a graduate to use the acquired body of knowledge, abilities and skills to ensure safety in the field of his activity</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Fundamentals of life safety
2. Sanitation and hygiene of industrial and household activities
3. Safety precautions
4. Civil protection</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>20</td><td>16</td><td>27</td><td>9</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">2</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><th colspan="5">История (History)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of a comprehensive understanding of the cultural and historical originality of Russia, its place in world and European civilization among students; the formation of systematized knowledge about the basic laws and features of the world-historical process, with an emphasis on the study of the history of Russia;
involvement in the circle of historical problems related to the area of future professional activity, obtaining skills in analysis and generalization of historical information.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. History as a science, theoretical foundations of the discipline (methodology, historiography, sources)
2. History of Russia and the world before the beginning of modern times
3. Recent and contemporary history</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
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<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Философия (Philosophy)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of an idea about the specifics of philosophy as a way of cognition and spiritual development of the world, the main sections of modern philosophical knowledge, philosophical problems and methods of their research. Development of skills for critical perception and assessment of sources of information, the ability to logically formulate, state and reasonably defend their own vision of problems and ways to resolve them; mastering the techniques of conducting discussion, polemics, dialogue</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Philosophy, its subject matter and place in culture
2. Historical types of philosophy. Philosophical traditions and modernity
3. Problems of philosophy</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
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<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">3</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Правоведение (Jurisprudence)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of legal culture as a necessary component of professional training of students, familiarization of students with the basics of law and the formation on this basis of a set of theoretical knowledge and practical skills</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Foundations of the theory of state and law.
2. Basics of constitutional and municipal law
3. Basics of civil, family and inheritance law.
4. Fundamentals of administrative and criminal law. The judicial system and law enforcement agencies.
5. Fundamentals of labor relations. State regulation of professional activities.
6. Legal basis for the protection of state interests, information, ecology.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
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<tr><td colspan="5">Социология и психология (Sociology and Psychology)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Providing students with the necessary theoretical knowledge about society, its structure and elements, the social laws of its development, the social essence of the individual and social communities; getting an idea of the principles and requirements for the preparation of methods and the technique of conducting sociological research; gaining knowledge of the theoretical foundations of psychology, skills to reasonably and effectively apply existing and master new methods and models in solving problems of the professional field in the sphere of forecasting and understanding human behavior</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Sociology as a scientific discipline. Basic sociological categories
2. Prehistory and socio-philosophical preconditions of sociology as a science. Classical sociological theories.
3. Russian sociological thought
4. Contemporary sociological theories
5. Personality and society
6. Social groups and communities
7. Social inequality and stratification
8. Methods of sociological research
9. The history of the development of psychological knowledge. Psychology: subject, object and research methods
10. The main directions in psychology
11. The mental model of the personality. The main functions of the psyche. Development of the psyche in the process of ontogenesis and phylogenesis
12. Principles of organization and management in mental activity
13. Cognitive processes. Thinking and intelligence. Creation.
14. Feeling. Perception. Representation. Imagination. Attention. Mnemic processes
15. Emotions and feelings. Communication and speech
16. Interpersonal relationships. Intergroup relationships and interactions</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>16</td><td>32</td><td>60</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
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<tr><th colspan="5">Физическая культура (Physical Culture)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of a personality with an active life position, independence in decision-making, a sense of responsibility, moral qualities, the ability to successfully socialize and the ability to apply various forms of physical culture and sports to maintain and strengthen health, improve the quality of life and the effectiveness of professional activity.
Providing an understanding of the social role of physical culture in the development of a personality and its preparation for professional activity.
Formation of a motivational and value-based attitude to physical culture, the need for regular physical exercises, an attitude towards a healthy lifestyle.
Getting ideas about the mechanisms of adaptation of the body, about the impact of mental and physical stress on the human body.
Mastering a system of special knowledge, practical skills and abilities that ensure the preservation and strengthening of health, the formation of compensatory processes for the prevention of occupational diseases, the correction of existing deviations in the state of health, the development and improvement of psychophysical abilities, the formation of professionally significant qualities and personality traits.
Mastering the methodology for the formation and implementation of a complex of health-improving exercises for self-study, methods of self-control when performing physical activity, the rules of personal hygiene, a rational regime of work and rest.
Mastering the means and methods of counteracting unfavorable factors and working conditions, reducing fatigue in the process of professional activity and improving the quality of results.
Obtaining knowledge about the role and place of physical culture and sports in the development of society as a whole: in the world, country and region of residence.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Organization of work by discipline. Mechanisms for mastering the course. Review of basic and additional literature
2. The general concept of the theory and methods of physical culture
3. Socio-biological foundations of physical culture, diagnostics and a healthy lifestyle
4. Independent physical activity
5. Means, forms and methods of physical culture in a person's professional activity
6. Sport is an integrative factor of physical fitness</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
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<tr><td colspan="5">Элективная физическая культура и спорт (Elective physical culture and sports)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Achievement and maintenance of the optimal level of physical fitness, necessary for the preservation and strengthening of health, stable performance and intensive work of students throughout the entire period of study, the formation of professionally significant qualities and personality traits; - acquiring personal experience of increasing motor and functional capabilities, providing general and professionally applied physical fitness; - improving the sportsmanship of students - athletes, the acquisition by students of the necessary knowledge on the basics of organizing sports training, preparation for work as public instructors, coaches and judges.
Understanding the social significance of physical culture and its role in personality development and preparation for professional activity.
Creation of a basis for creative and methodologically grounded use of physical culture and sports activities for the purpose of subsequent life and professional achievements.
Knowledge of the scientific - biological, pedagogical and practical foundations of physical culture and a healthy lifestyle.
Formation of a motivational-value attitude to physical culture, attitudes towards a healthy lifestyle, physical improvement and self-education of habits for regular exercise and sports.
Mastering a system of special knowledge, practical skills and abilities that ensure the preservation and strengthening of health, the formation of compensatory processes for the prevention of occupational diseases, the correction of existing deviations in health, the development and improvement of psychophysical abilities</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Practical section
2. Independent work of students</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>240</td><td>72</td><td>16</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">328 часов</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
</table>

<table>
<tr><th colspan="5">Иностранный язык: Базовый курс (Foreign language: Basic course)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Practical knowledge of colloquial and everyday speech for active use in everyday communication; confident use of the most common and relatively simple language means in the main types of speech activity: speaking, listening, reading and writing, increasing the level of educational autonomy, the ability to educate yourself.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Personality, personal interests: travel, work and languages
2. Business life and education
3. Social life (experience of different countries)</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>186</td><td>102</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">9</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment, exam</td></tr>
<tr><th colspan="5">Иностранный язык: Профессионально-ориентированный курс (Foreign language: Vocational-oriented course)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Development and improvement of communicative language competence for the active use of a foreign language in everyday professional communication. Development of skills of independent work with special literature in a foreign language in order to obtain professional information.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Building a career.
2. Information.
3. Quality.
4. Feedback.
5. Increase in sales.
6. Opening a new business.
7. Financial control.
8. Ethical trade.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>112</td><td>59</td><td>45</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">6</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment, exam</td></tr>
</table>

<table>
<tr><th colspan="5">Семинар по бизнес-информатике (на английском языке) (Business Informatics Seminar (in English))</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Introducing students to the terms, concepts and vocabulary of business informatics in English.
Formation of students' competence for professional communication in an international environment in English.
Familiarization of students with the basics of enterprise modeling and analysis in a foreign language.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Information technology (IT): current state, role in business and development trends.
2. Information systems (IS): the role of IS in the management of a modern enterprise.
3. Information systems in economics and management.
4. Modern trends in business informatics</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>16</td><td>83</td><td>9</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">3</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><th colspan="5">Математика (Maths)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of students' ability to think logically, operate with abstract objects, correctly use mathematical concepts and symbols to express quantitative and qualitative relations.
Possession of the mathematical apparatus of analysis and forecasting.
Ability to solve applied problems using standard mathematical packages and computer programs</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Linear algebra
2. Vector algebra and analytic geometry
3. Introduction to mathematical analysis
4. Differential calculus of functions of one variable
5. Complex numbers, polynomials and rational fractions
6. Integral calculus of functions of one variable
7. Differential calculus of functions of several variables
8. Ordinary differential equations
9. Numerical and functional series</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы,</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>74</td><td>74</td><td>140</td><td>72</td></tr>
</table>

самостоятельную работу студента):				
ECTS Credits (количество кредитных единиц из плана):	10			
Assessment (итоговый результат по дисциплине)	Exam			
Теория вероятностей (Probability theory)				
Objectives (цель изучения дисциплины):	Formation of the idea of the theory of probability as a science that studies patterns in random phenomena. Possession of probabilistic methods in solving applied problems. Formation of probabilistic thinking in students, the ability to analyze and predict random phenomena.			
Content (содержание дисциплины по разделам):	1. Elements of combinatorics 2. Random events 3. The classical definition of probability. Geometric and statistical probability 4. Axiomatic construction of probability 5. Conditional probability 6. Sequences of tests. Limit theorems 7. Random variables. Distribution functions 8. Numerical characteristics of random variables 9. Basic laws of distribution of continuous and discrete random variables 10. Multidimensional random variables 11. The law of large numbers. Central limit theorem. 12. Basic concepts of mathematical statistics 13. Confidence intervals 14. Testing statistical hypotheses			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	30	30	48	36
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Экология (Ecology)				
Objectives (цель изучения дисциплины):	Formation of environmental thinking among graduates, which allows them to reasonably and effectively apply environmental knowledge in solving both professional problems and in everyday life, to master new modern methods of environmental protection and ensuring environmental safety.			
Content (содержание дисциплины по разделам):	1. Fundamentals of general ecology 1.1. Introductory lecture 1.2. The subject and tasks of ecology. Biosphere, its structure and stages of development 1.3. Ecosystems and their structure. Ecosystem			

<table>
<tr><td></td><td colspan="4">productivity
1.4. Environmental factors and their classification. Liebig and Shelford laws. Ecological niche concept
1.5. Regularities of ecosystem functioning
2. Fundamentals of Applied Ecology
2.1. The main environmental problems of our time and their causes
2.2. Basic approaches to environmental protection. Sanitary-hygienic and ecological regulation
2.3. Ecological foundations of rational nature management. Ecological economics. Environmental monitoring
2.4. Society and nature: interaction strategies</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>38</td><td>8</td><td>17</td><td>9</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">2</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Концепции современного естествознания (Concepts of modern natural science)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Raising the general educational and cultural level of future specialists, forming in them the foundations of a scientific worldview, a holistic materialistic view of natural phenomena at different hierarchical levels of organization of matter, familiarization with the generally accepted natural science picture of the world.
Creation of prerequisites for the formation of innovative and technological thinking of future specialists, familiarization with the natural science base of modernization processes, modern technologies.
Enrichment and improvement of the methodology of scientific and practical professional activities of future specialists</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Introduction. Subject and methods of studying the discipline
2. Natural science in the context of human culture. Scientific method
3. The main stages of the development of natural science
4. The concept of determinism in classical natural science
5. Corpuscular and continual concepts of describing nature
6. Space and time in natural science
7. Statistical patterns in nature. Energy conservation law in macroscopic processes. The principle of increasing entropy.</td></tr>
</table>

	8. Quantum representations in the description of the microworld 9. Structure of matter 10. What the world is made of: on the way to a fundamental theory of matter 11. Evolutionary processes in the megaworld: the science of the universe 12. Evolution of the stars 13. Science of the earth 14. Fundamental properties of living matter 15. The biosocial nature of man 16. Natural science and scientific and technological progress 17. Self-organization in animate and inanimate nature			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	16	15	9
ECTS Credits (количество кредитных единиц из плана):	2			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Информатика (Informatics)				
Objectives (цель изучения дисциплины):	Study of information technology for information processing. Theoretical and practical development of information technologies and tools for solving typical general scientific problems in their professional activities by introducing and effectively using the capabilities of universal packages of applied computer programs. Providing the basis for the training of future specialists in the field of modern information technologies who understand the importance of information security, as well as create the necessary basis for the successful mastering of the subsequent special disciplines of the curriculum. Development of students' creative abilities, the ability to formulate and solve the problems of the studied specialty, the ability to creatively apply and independently improve their knowledge, including using global computer networks.			
Content (содержание дисциплины по разделам):	1. Information and presentation forms 2. Hardware and software for the implementation of information processes 3. Basics of algorithmization and programming. 4. Technologies for the preparation of reporting documentation and presentation materials 5. Technologies for processing tabular information by means 6. Models for solving functional and computational problems 7. Basics of network technologies and information			

<table>
<tr><td></td><td colspan="4">security</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>8</td><td>48</td><td>43</td><td>45</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Введение в профессиональную деятельность (Introduction to professional activities)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Introducing students to their future profession, objects and activities.
Acquaintance with the content of the educational program in the direction of "Business Informatics", the study of which will allow to form the necessary competencies for professional activities.
Familiarization with the main basic components and terms of the subject area.
Formation of knowledge about resources for the successful implementation of professional activities.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Basics of Business Informatics
2. Interaction between business and information technology
3. Resources of opportunities and their limits</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>12</td><td>4</td><td>47</td><td>9</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">2</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Микроэкономика (Microeconomics)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Providing training for specialists capable of analyzing and assessing the state of economic processes, identifying economic problems and finding their effective solution at the level of individual economic entities, using a set of methods and tools of microeconomic analysis.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Introduction to microeconomic
2. Theory of consumer behavior and market demand
3. Foundations of the theory of production and costs
4. Competition and monopoly on commodity markets for goods and services</td></tr>
</table>

	5. General economic equilibrium and efficiency			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	48	46	18
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Макроэкономика (Macroeconomics)				
Objectives (цель изучения дисциплины):	Providing training for specialists capable of analyzing and assessing the state of economic processes and institutions at the macro level; identify economic problems and find their effective solution, taking into account possible socio-economic consequences, using the apparatus of macroeconomic theory.			
Content (содержание дисциплины по разделам):	1. National economy as a system of macroeconomic ties 2. Basic models of macroeconomic equilibrium 3. Macroeconomic instability and government regulation of the economy 4. Balance of payments and exchange rate			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	48	19	45
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Экономика предприятия (Enterprise economy)				
Objectives (цель изучения дисциплины):	Formation of a system of knowledge and practical skills in the field of theory and practice of the organization's economic activity. Study of the object and subject of enterprise management, factors of the external and internal environment of the enterprise, types of organizational and production structures, their characteristics. Formation of the ability to analyze the functional areas of activity and types of resources of the enterprise, the sequence of the economic analysis of the enterprise. Formation of an understanding of the economic processes occurring at the enterprise and the economic tools for substantiating decisions in the field			

<table>
<tr><td></td><td colspan="4">of organization management.
Formation of skills in economic analysis and calculation of indicators of production and economic activities of the enterprise.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Introduction to the economics of the enterprise.
2. Enterprise resources
3. Income, profit and profitability of the enterprise
4. Fundamentals of enterprise management</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>48</td><td>48</td><td>12</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam, settlement and graphic work</td></tr>
<tr><td colspan="5">Менеджмент (Management)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of students' basic knowledge system in the field of general theory of organization management. Mastering modern methods and tools for building a management system for an organization and managing a workforce, obtaining skills for their systematic use in the field of managing organizations.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Historical and theoretical foundations of management
2. Management functions
3. Making management decisions
4. Socio-psychological foundations of management</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>48</td><td>48</td><td>39</td><td>45</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">5</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Теория систем (Systems theory)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Obtaining theoretical knowledge and practical skills in the basics of systems theory and systems analysis to support decision-making in management.
Obtaining theoretical knowledge and skills to find reasonable organizational and managerial decisions in a dynamic environment and assess their consequences.</td></tr>
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<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Systems, basic concepts.
2. Regularities of functioning and development of systems and their features
3. Methods and models of systems modeling
4. Special methods of system analysis</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>-</td><td>31</td><td>9</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">2</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Маркетинг (Marketing)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Preparing students for the implementation of finding grounded organizational and managerial decisions, taking into account their social significance, promoting their implementation in a dynamic environment and assessing their consequences. Preparing students for a responsible and purposeful solution of the assigned professional tasks in cooperation with society, team, partners.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Marketing environment.
2. Consumer behavior.
3. Marketing research.
4. Marketing complex.
5. Marketing management.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>48</td><td>32</td><td>64</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">5</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Бухгалтерский учет (Accounting)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of students' basic knowledge about accounting, its place and role in managing an organization
Formation of theoretical and practical skills in conducting individual accounting operations, documenting them, aggregating and summarizing in accounting (financial) statements, taking into account the world realities of an integration and technological nature.</td></tr>
</table>

<table>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Theoretical foundations of accounting
2. Accounting for enterprise resources
3. Accounting for the costs of production and release of finished products
4. Accounting for settlement transactions
5. Accounting for the financial results of organizations. capital accounting
6. Accounting financial statements</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>48</td><td>55</td><td>45</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">5</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam, settlement and graphic work</td></tr>
<tr><td colspan="5">Статистика (Statistics)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Training of specialists who own existing ones and are ready to master new statistical methods for obtaining and analyzing information; able to independently and reasonably choose the directions and methods of data analysis for making management decisions.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Subject and methodology of statistics. Statistical observation. Statistical indicators.
2. Methods for the analysis of empirical distributions
3. Selective observation
4. Statistical methods for studying relationships
5. Methods of time series analysis
6.Index analysis method
7. Macroeconomic indicators in the system of national accounts
8. Statistics of national wealth
9. Statistics of money circulation, prices and inflation
10. Labor statistics
11. Population statistics</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>48</td><td>28</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Цифровые технологии в управлении бизнесом (Digital technologies in business management)</td></tr>
</table>

<table>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of ideas about digital technologies used in modern enterprises. Information systems for enterprise management (CRM, SRM, SCM, ERP, PLM).</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Digital technologies. Definitions, overview.
2. Digital technologies used in modern enterprises.
3. Information systems for enterprise management (SRM, CRM, PLM, SCM, ERP).
4. Analysis of business processes. Process mining (Celonis).
5. SAP analytics cloud. Review, methods of application.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>32</td><td>44</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Дискретная математика (Discrete Math)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of students' knowledge of the conceptual apparatus of discrete mathematics and the fundamental properties of discrete mathematical objects.
Study of the main approaches to the use of discrete mathematics tools in the formalized representation of processes and systems, analysis and processing of information</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Set theory
2. Elements of graph theory</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>16</td><td>32</td><td>87</td><td>9</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Документационное обеспечение управления (Management documentation)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Study of the organization of effective office work in the conditions of the functioning of a modern enterprise.
Formation of a system of theoretical information and practical knowledge on the preparation, editing and subsequent processing of documents, taking into</td></tr>
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<table>
<tr><td></td><td colspan="4">account the requirements of the current Russian legislation</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Documentation
2. Document flow
3. Archiving
4. Business etiquette</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>8</td><td>24</td><td>31</td><td>9</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">2</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Информационные системы и технологии (Information systems and technologies)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Familiarization of students with the role, purpose, capabilities and functionality of modern information systems and technologies.
Acquaintance with the main information technologies used in modern corporate information systems.
Formation of understanding and ability to apply the foundations of enterprise architecture modeling.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. The role and place of information systems and technologies in the management of the organization.
2. Economic information systems.
3. Information technology.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>16</td><td>32</td><td>24</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">3</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Передовые производственные технологии (Advanced manufacturing technology)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">The acquisition by students of knowledge about the current level and prospects for the development of advanced production technologies in Russia and the world, as well as the effectiveness of their use in solving technological problems of production development</td></tr>
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<table>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. The concept of advanced manufacturing technologies. Prospects for the development of advanced production technologies in Russia and the world.
2. Technologies of digital design and modeling.
3. Traditional and modern construction materials. Basic information about the key physical and mechanical properties. Description of the structure and features of the main groups of materials.
4. Modern technologies for the manufacture of parts, assemblies and structures in the framework of mechanical engineering.
5. Smart devices and smart infrastructures.
6. Digitalization of production.
7. The basics of organizing the production process based on advanced production technologies.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
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<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">2</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Технологии цифровой промышленности (Digital Industry Technologies)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Acquaintance of listeners with modern technologies of the digital industry and models for their optimal application in the framework of professional activities.
Acquaintance with information about modern research trends in various fields of knowledge that form modern digital technologies in the industry.
Formation of a general understanding of the contribution of SPbPU Institutes, as well as the University as a whole, to scientific and technological development both within the Russian Federation and beyond.
Providing assistance in career guidance, allowing future specialists to determine the area of professional interests and research activities.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Introductory (installation) lecture
2. Global trends in the development of the digital industry. National Technology Initiative. NTI Markets.
3. Direction "Technet" (advanced production technologies) of the National Technology Initiative. Megaproject "Factories of the Future". Digital industry.
4. Roadmap for the development of "end-to-end" digital technology "New production technologies" (within the framework of the federal project "Digital Technologies" of the national program "Digital Economy of the Russian Federation").
5. Digital design and modeling (Smart Design). Digital twins and digital shadows.</td></tr>
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<tr><td></td><td colspan="4">6. High performance computing. HPC.
7. Robotics and sensorics. Industrial Internet.
8. Technologies of wireless communication.
9. Quantum technologies.
10. Distributed ledger systems.
11. Big data. Machine Learning. Artificial Intelligence. Neurotechnology.
12. Technologies of virtual and augmented reality.
13. Laser technologies. Photonics.
14. Renewable energy sources. New energy.
15. Implementation of end-to-end digital technologies on the example of the spheres - construction (BIM technologies) and medicine (Digital medicine)</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>16</td><td>16</td><td>36</td><td>4</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">2</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Базы данных (Database)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Understanding of modern concepts in the field of database management.
Mastering the methods of analysis and design of information systems based on databases.
Ability to apply existing database design techniques for various areas of the enterprise.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Basic concepts and definitions of databases.
2. Basic concepts of the relational model.
3. Typical solutions for relational databases.
4. Foundations of relational algebra.
5. SQL query language.
6. Levels of data presentation in the DBMS.
7. Design based on normalization.
8. Independent creative work in groups: "Implementation of a typical solution for the organization's database"</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>32</td><td>44</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
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<tr><th colspan="5">Архитектура предприятия (Enterprise architecture)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Teaching students the theoretical foundations of modeling and analysis of an enterprise as a complex system of interconnected and interdependent objects, including organizational units, business processes, software and hardware
Providing a comprehensive view of future specialists on the industry tasks they solve in the development, implementation and adaptation of modern information technologies</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Basic concepts of Enterprise Architecture
2. Modeling the business layer architecture
3. Modeling the application layer and the technology layer, development of requirements for IT services
4. Building a plan for the transition to the target architecture</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>48</td><td>28</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><th colspan="5">Управление данными (Data management)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Studying data structure models, understanding how to classify DBMS depending on the data models being implemented and how they are used.
Exploring ways to store data at the physical level.
Studying the technology of forming queries by means of the SQL language for solving data manipulation problems.
Gaining an understanding of specialized hardware and software, focused on building data warehouses;
Formation of skills to carry out logical design of databases using the "Entity-relationship" methodology.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Types and data structures in the relational data model
2. Methods and objects of receiving and manipulating data
3. Design based on the entity-relationship model
4. Metadata in relational databases
5. Physical database model: accounting for the impact of transactions, denormalization of tables
6. Building the physical database model: designing performance
7. Backing up and restoring data
8. Export, import and download of data
9. Basics of data warehouse design
10. User and Privilege Management</td></tr>
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<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>32</td><td>53</td><td>27</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Технологии программирования (Programming technologies)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of students' abilities to use modern data management technologies, modern programming technologies to solve professional problems.
Studying the theoretical foundations of modern programming technologies and obtaining practical skills for their implementation.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Software products
2. Data and their types
3. Program design
4. General questions of programming technology</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>48</td><td>10</td><td>54</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Алгоритмизация и программирование (Algorithmization and programming)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of a system of concepts, knowledge, skills and abilities in the field of modern programming, which includes methods of analysis, design and creation of software products based on the use of object-oriented methodology.
Skills training to develop and debug efficient algorithms and programs using modern programming systems.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Basics of algorithms and basic constructions of the Java language
2. Object-oriented programming (OOP) in Java
3. Using the classes included in the Java development kit (JDK)
4. Creating a graphical user interface</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>48</td><td>10</td><td>54</td></tr>
</table>

или лабораторные работы, самостоятельную работу студента):				
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Математические методы в экономике и управлении (Mathematical methods in economics and management)				
Objectives (цель изучения дисциплины):	Studying the foundations of mathematical methods in economics, necessary for the organization and successful conduction of research, production, economic, commercial and financial activities of an enterprise (organization). Training in the effective application and substantiation of the use of existing methods for solving management problems. Development of students' rational-logical style of thinking in assessing and forecasting economic processes			
Content (содержание дисциплины по разделам):	1. Theory of linear optimization 2. Multi-criteria optimization 3. Non-linear optimization			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	32	80	36
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Exam			
Исследование операций (Operations research)				
Objectives (цель изучения дисциплины):	Obtaining theoretical knowledge about the methods and models of operations research necessary for the organization and successful conduction of research and economic activities of an enterprise (organization). Training in methods of development and application of economic and mathematical models (EMM) at the level of a corporation, an individual enterprise and its divisions. Development of a rational-logical style of thinking in students in the analysis of organizational and managerial tasks			
Content (содержание дисциплины по разделам):	1. Theory of linear optimization 2. Integer models and optimization methods 3. Multi-criteria optimization 4. Non-linear optimization			

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<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>16</td><td>32</td><td>96</td><td>36</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">5</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Моделирование бизнес-процессов (Business process modeling)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Teaching students the theoretical foundations of process management, modeling and analysis of business processes.
Acquisition of practical skills and abilities of modeling business processes using special software
Providing the basis for the training of future specialists in the field of modern information technologies</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Process approach to management
2. Methodologies for describing business processes
3. Designing an integrated enterprise management system
4. Assessment of the effectiveness of business processes
5. Process-oriented implementation of information systems</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>48</td><td>48</td><td>75</td><td>81</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">7</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Инструменты бизнес-моделирования (Business Modeling Tools)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Teaching students the theoretical foundations of process management, modeling and analysis of business processes
Acquisition of practical skills and abilities of modeling business processes using special software
Providing the basis for the training of future specialists in the field of modern information technologies</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Process approach to management
2. Methodologies for describing business processes
3. Designing an integrated enterprise management system
4. Evaluation of the effectiveness of business</td></tr>
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	processes: functional and cost analysis 5. Process modeling tools 6. Quality management system			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	48	48	75	81
ECTS Credits (количество кредитных единиц из плана):	7			
Assessment (итоговый результат по дисциплине)	Exam			
Теория финансов (Finance theory)				
Objectives (цель изучения дисциплины):	Providing professional training of a graduate to solve calculation, analytical, research; organizational and managerial, production, entrepreneurial tasks in the field of finance, money circulation and credit			
Content (содержание дисциплины по разделам):	1. Money and its role in financial relations 2. Foundations of the general theory of finance 3. Finances of economic entities in various fields of activity 4. World financial system 5. Credit and its role in the economy 6. Credit intermediation. Banks 7. Lending instruments			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	32	53	27
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Финансы и кредит (Finance and credit)				
Objectives (цель изучения дисциплины):	Providing professional training of a graduate to solve calculation, analytical, research; organizational and managerial, production, entrepreneurial tasks in the field of finance, money circulation and credit			
Content (содержание дисциплины по разделам):	1. Money and its role in financial relations 2. Foundations of the general theory of finance 3. Finances of economic entities in various fields of activity 4. World financial system 5. Credit and its role in the economy 6. Credit intermediation. Banks 7. Lending instruments			

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<tr><td>32</td><td>32</td><td>53</td><td>27</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Управление жизненным циклом информационных систем (Information systems lifecycle management)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Mastering the methods, processes, tools, standards and methodologies of information systems life cycle management.
Mastering the methods of integrating business processes and projects for reorganizing the activities of an enterprise, forming requirements for IS based on the analysis of information needs, developing an IS concept.
Mastering the implementation methodologies of the leading IS manufacturers.
Management of IS implementation projects, organization of interaction with the consulting group, organization of IT service activities to support the processes of the IS life cycle</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Introduction to the discipline.
2. Methods and technologies for managing the life cycle of information systems.
3. Methodologies for creating information systems.
4. Proprietary IS implementation methodologies.
5. Project management of IS implementation.
6. Maintenance of IS</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
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<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Проектирование информационных систем (Information systems design)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Mastering the methods, tools, standards and methodologies for the design of information systems.
Mastering the methods of analyzing the information needs of the enterprise and the organization of reengineering activities at the enterprise, the formation</td></tr>
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<table>
<tr><td></td><td colspan="4">of requirements for the IS, the development of the concept of IS.
Mastering the methodologies and tools of original and standard design.
Mastering proprietary methodologies for the implementation of leading IS manufacturers.
Management of projects for the development and implementation of IS, organizing interaction with the customer and developer (consultant), organizing the activities of the IT service in the course of project implementation and subsequent maintenance of IS.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Introduction to the discipline.
2. IS design methodologies.
3. Methodologies for creating IS.
4. Proprietary IS implementation methodologies.
5. Project management of IS implementation.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>48</td><td>32</td><td>37</td><td>27</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Предметно-ориентированные информационные системы (Subject-oriented information systems)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of students' knowledge about the purpose and capabilities of existing IT solutions in various subject areas of enterprise (organization) management.
Formation of skills based on the analysis of the information needs of the enterprise to make an informed choice of an applied solution, organize a project for its implementation at the enterprise and integration into the existing IT infrastructure.
Mastering the methods of effective operation of the implemented solutions to achieve the goals of the enterprise.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Information infrastructure of the enterprise.
2. Economic IS.
3. Integrated IS.
4. Information systems that support the most important business functions of the enterprise.
5. Evaluation of the economic efficiency of IS projects.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>32</td><td>32</td><td>44</td><td>36</td></tr>
</table>

ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Управление ИТ-сервисами (IT Service Management)				
Objectives (цель изучения дисциплины):	Mastering the methods, standards and tools for organizing the process approach and quality management of the provision of IT services that meet the business needs of the enterprise. Mastering the methods of designing IT services aimed at harmonizing business and IT. Mastering the skills of analyzing information exchange models. Mastering various concepts and models of IT service management and enterprise IT infrastructure.			
Content (содержание дисциплины по разделам):	1. The role and place of IT services in enterprise architecture 2. ITSM as an approach to the management and organization of IT services 3. Methodologies and standards for IT service management 4. Tools for the design and management of IT services			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	48	28	36
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Системы поддержки принятия решений (Decision support systems)				
Objectives (цель изучения дисциплины):	Formation of students' theoretical knowledge and the formation of sustainable practical skills on issues related to making managerial decisions based on the use of mathematical methods. Training in methods of collecting and processing analytical information for decision-making, skills in using modern information technologies to support decision-making.			
Content (содержание дисциплины по разделам):	1. Theoretical foundations of decision making 2. Making decisions in conditions of uncertainty - target, behavioral, natural 3. Making decisions in conditions of uncertainty (target, behavioral, natural) 4. Models of decision-making processes 5. Information support for decision making			
Teaching and learning methods (количество	Lecture	Practical training	Indep. study	Exam

часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	32	48	64	36
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Exam			
Управление проектами (Project management)				
Objectives (цель изучения дисциплины):	Familiarization of students with the basics and specifics of project activities, project management in the field of IS and IT Studying the standards and methodologies of project management, teaching skills in managing individual aspects of the project at all stages of its implementation. Project stakeholder management skills training			
Content (содержание дисциплины по разделам):	1. Project management approach 2. Basic principles of project management 3. Aspects of project management 4. Organization of project process management			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	38	49	84	45
ECTS Credits (количество кредитных единиц из плана):	6			
Assessment (итоговый результат по дисциплине)	Academic assessment, Exam			
Управление инновациями (Innovation management)				
Objectives (цель изучения дисциплины):	Study of theoretical foundations and current models of open innovation management. Study of methods for the assessment and protection of intellectual property. Acquaintance with modern approaches to the management and evaluation of innovative projects, forecasting methods used in ensuring innovation.			
Content (содержание дисциплины по разделам):	1. Theoretical foundations of innovation management 2. Intellectual property and its protection 3. Forecasting in providing innovative activity 4. Innovative projects as a form of implementation of innovative activity			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные	Lecture	Practical training	Indep. study	Exam
	22	44	78	36

работы, самостоятельную работу студента):				
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Exam			
Управление инвестициями в корпоративную архитектуру (Enterprise Architecture Investment Management)				
Objectives (цель изучения дисциплины):	Formation of students' knowledge about the essence of the investment process, the main provisions of investment design, methods of commercial assessment of investment projects, analysis of risks and returns. Formation of skills and abilities in financial modeling, development and evaluation of investment projects to improve corporate architecture, making informed management decisions using software products. Formation of skills for assessing economic costs and risks when creating information systems, fulfilling requests for their change.			
Content (содержание дисциплины по разделам):	1. The main provisions of investment planning 2. The structure of the investment project 3. Methodological foundations of justification and evaluation of investment projects to improve the architecture of the enterprise 4. Use of software products for the analysis of investment projects to improve the architecture of the enterprise			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	32	62	18
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Web- технологии (Web technologies)				
Objectives (цель изучения дисциплины):	Familiarization of students with the role, purpose and functionality of Web technologies.			
Content (содержание дисциплины по разделам):	1. Hypertext Markup Language (HTML) 2. Cascading Style Sheets (CSS) 2 3. JavaScript and scripts 4. Extensible Markup Language (XML) and its implementations			
Teaching and learning methods (количество	Lecture	Practical training	Indep. study	Exam

<table>
<tr><td>часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>32</td><td>32</td><td>53</td><td>27</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam</td></tr>
<tr><td colspan="5">Образовательный форсайт (Educational foresight)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of 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, the disclosure of modern methods of constructing an educational trajectory to empower students.
Study of the specific use of online courses in the educational process.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Basic concepts and definitions of e-learning and online learning
2. Acquaintance with online resources hosted on open educational platforms. Acquaintance with foreign educational platforms.
3. Independent study of an online resource.
Mandatory study of a resource posted on a foreign platform.
4. Passing intermediate tests of an online resource to demonstrate the progress of learning the material
5. Work on the forum of an online resource</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>6</td><td>-</td><td>327</td><td>27</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">10</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Карьерная адаптивность (Career adaptability)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Designing a future career in modern dynamic socio-economic conditions, taking into account the abilities of students, maximum professional and personal self-realization while maintaining health and life potential.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Personality and career.
2. Technologies of self-correction and self-development.
3. Independent study of the course (discipline).
4. Preparation and submission of a reflective essay.</td></tr>
</table>

Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	6	-	327	27
ECTS Credits (количество кредитных единиц из плана):	10			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Практика по получению первичных профессиональных умений и навыков, в том числе первичных умений и навыков научно-исследовательской деятельности (Practice for obtaining primary professional skills and abilities, including primary skills and research skills)				
Objectives (цель изучения дисциплины):	Deepening the knowledge gained in the process of theoretical training and acquiring the necessary professional skills and abilities in accordance with the chosen direction of training.			
Content (содержание дисциплины по разделам):	Analysis of the professional standard corresponding to the future profile of training in the direction 38.03.05 "Business Informatics", and analysis of the labor market in the field of professional activity.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	16	48	8
ECTS Credits (количество кредитных единиц из плана):	2			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Преддипломная практика (Undergraduate practice)				
Objectives (цель изучения дисциплины):	Deepening and consolidating the knowledge gained in the process of theoretical training, acquiring practical experience, skills in production and (or) scientific work, based on the study of methodological, instructive and normative materials and special literature. Gaining organizational and professional experience.			
Content (содержание дисциплины по разделам):	The practice involves the collection and study of materials necessary to complete the final qualifying work. Specific tasks are set by the heads of practice from the university and from the enterprise, taking into account the specifics of production.			
Teaching and learning methods (количество часов: на лекции, практические занятия	Lecture	Practical training	Indep. study	Exam
	-	-	216	-

или лабораторные работы, самостоятельную работу студента):				
ECTS Credits (количество кредитных единиц из плана):	6			
Assessment (итоговый результат по дисциплине)	Exam			
Основы проектной деятельности (Basics of project activities)				
Objectives (цель изучения дисциплины):	Familiarization of students with the basics of project activities in order to further apply the acquired knowledge and skills to solve specific practical problems using the project method. Developing in students the consciousness of the importance of collective work for obtaining a result, the role of cooperation, joint activity in the process of performing creative tasks; development of the ability to communicate.			
Content (содержание дисциплины по разделам):	1. Initiation of the project (concept). General understanding of project activities 2. Team building 3. Team communication 4. Generation of ideas, evaluation and selection of project ideas 5. Development of requirements for the result 6. Preparation and planning (Development). Project life cycle. 7. Project planning 8. Implementation. Project implementation. 9. Control over project implementation. 10. Completion (presentation of results) of the project.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	16	67	9
ECTS Credits (количество кредитных единиц из плана):	3			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Проектная работа по анализу бизнес-процессов предприятия (Project work on the analysis of enterprise business processes)				
Objectives (цель изучения дисциплины):	Acquisition of practical skills and abilities for modeling business processes using specialized software. Acquiring the skills of analyzing individual business processes and finding the potential for their optimization.			

<table>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Approach to the analysis of business processes and methodology for performing project work
2. Development of a process model
3. Process analysis
4. Development of a document management system
5. Formation of requirements for IT services</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>20</td><td>145</td><td>15</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">5</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment, course project</td></tr>
<tr><td colspan="5">Проектная работа по анализу моделей информационного обмена (Project work on the analysis of information exchange models)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of skills to carry out the development and subsequent analysis of the model of information exchange in the business process of the investigated unit of the enterprise.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Data architecture and information exchange models as a component of enterprise architecture
2. Characteristics of the enterprise and the analyzed business process (in accordance with the case).
3. Model of information exchange "as is" (in accordance with the case).
4. Model of information exchange “as it should be”.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>16</td><td>113</td><td>15</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment, course project</td></tr>
<tr><td colspan="5">Проектная работа по формированию ИТ-архитектуры предприятия (Design work on the formation of the IT architecture of the enterprise)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Mastering the methods, tools and technologies for managing the IT infrastructure of an enterprise, the role and purpose of all elements of this infrastructure, as well as its development, support, maintenance and security in accordance with standards and best practices.
Formation of the ability to organize the processes of IT infrastructure management and implementation of</td></tr>
</table>

<table>
<tr><td></td><td colspan="4">projects for its development in accordance with the IT strategy.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. IT architecture as an element of building an effective enterprise management system.
2. Methodological foundations of enterprise IT infrastructure management.
3. Development strategy of IT architecture and its relationship with business development strategy.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>16</td><td>32</td><td>74</td><td>22</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Exam, course work</td></tr>
<tr><td colspan="5">Практика по основам управленческой деятельности (Practice in the basics of management)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Gaining practical experience, including independent activity at the enterprise (in the organization) and competencies in the areas and (or) areas of professional activity.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">Practice involves the collection and study of materials necessary to study modern principles, methods and organizational forms of management for the effective management of organizations in various sectors of the national economy and various forms of ownership. Specific tasks are set by the heads of practice from the university and from the enterprise, taking into account the specifics of production.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>16</td><td>120</td><td>8</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">4</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Проектная работа по управлению проектами внедрения архитектурных решений (Project work on project management of implementation of architectural solutions)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Teaching students the theoretical foundations of modeling and analysis of an enterprise as a complex system of interconnected and interdependent objects, including organizational units, business processes,</td></tr>
</table>

	software and hardware, as well as building the structure of an architectural project. Teaching students the basic aspects of managing a complex architectural project.			
Content (содержание дисциплины по разделам):	1. Modeling the business layer architecture 2. Modeling the application layer and the technology layer, development of requirements for IT services 3. Building a plan for the transition to the target architecture 4. Development of a project plan and formation of a project management team 5. Formation of project documentation and management of an architectural project			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	22	136	22
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Exam, course work			
Практика по оценке эффективности реорганизационных проектов (Practice for assessing the effectiveness of reorganization projects)				
Objectives (цель изучения дисциплины):	Gaining practical experience, including independent activity at the enterprise (in the organization) and competencies in the areas and (or) spheres of professional activity.			
Content (содержание дисциплины по разделам):	The practice involves the collection and study of materials necessary for the formation of a project for the transition to the target architecture of the enterprise as part of a reorganization project, for analyzing approaches to its implementation, for evaluating the project from the point of view of various aspects (timing, budget, risks, etc.). Specific tasks are set by the heads of practice from the university and from the enterprise, taking into account the specifics of production.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	16	120	8
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Academic assessment			

<table>
<tr><th colspan="5">Комплексный курсовой проект (Complex course project)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Consolidation and generalization of the knowledge gained by students in the framework of theoretical and practical training in the design of the architecture of an electronic enterprise.
Application of knowledge, abilities and skills in solving complex professional problems, in the formation and analysis of architectural models or their components.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Presentation of the types of tasks implemented in a complex course project
2. Formation of the topic of a comprehensive course project.
3. Statement of the problem of a complex course project.
4. Formation of a plan for a comprehensive course project
5. Development of the theoretical part of a comprehensive course project
6. Development of a plan for the implementation of the practical part of a comprehensive course project
7. Development of the practical part of a comprehensive course project
8. Finalization and design of a comprehensive course project
9. Preparation of a comprehensive course project for defense</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>44</td><td>157</td><td>15</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">6</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment, course project</td></tr>
<tr><th colspan="5">Практика по получению профессиональных умений и опыта профессиональной деятельности (Practice for obtaining professional skills and professional experience)</th></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Gaining practical experience, including independent activity at the enterprise (in the organization) and competencies in the areas and (or) spheres of professional activity.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">Practice involves the collection and study of materials necessary for the formation of professional skills and professional experience.
Specific tasks are set by the heads of practice from the university and from the enterprise, taking into account the specifics of production.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>-</td><td>-</td><td>216</td><td>-</td></tr>
</table>

или лабораторные работы, самостоятельную работу студента):				
ECTS Credits (количество кредитных единиц из плана):	6			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Защита выпускной квалификационной работы, включая подготовку к процедуре защиты и процедуру защиты (Defense of the final qualifying work, including preparation for the defense procedure and the defense procedure)				
Objectives (цель изучения дисциплины):	Establishing the level of preparation of a graduate of a higher educational institution to perform professional tasks and the compliance of his training with the requirements of the self-established educational standard and the main educational program in the direction of training (specialty) of higher education			
Content (содержание дисциплины по разделам):				
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	216	-
ECTS Credits (количество кредитных единиц из плана):	6			
Assessment (итоговый результат по дисциплине)	-			
Основы работы в ЭИОС (Basics of work in EIEE)				
Objectives (цель изучения дисциплины):	Formation of students' ability to organize the educational process with elements of e-learning, which allows to ensure the functioning of the electronic information and educational environment			
Content (содержание дисциплины по разделам):	1. Components and factors of the information and educational environment formation. 2. Information and educational space. 3. Man in the information and educational environmen			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	2	4	21	9
ECTS Credits (количество кредитных единиц из плана):	1			

<table>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Творческие семестры (Creative semesters)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Ensuring that students master the necessary theoretical knowledge, the methodology of creative analysis in the system of socio-cultural education by means of performing arts for the formation of the creative personality of a person-activist, a competitive specialist of the "new generation".
Formation of a comprehensively and harmoniously developed personality, capable of creative and professional self-development in the professional sphere</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Musical content: a composer's message or an agreement with the listener?
2. Music and words are sworn friends
3. Musical time. Temporary and temporary
4. From the style of the era - to the composer's style
5. Program in music: hint or blinkers
6. Tradition and Innovation in the Art of Music
7. Cultural transfer in the system of literary interactions
8. The creative individuality of the poet and writer as an object of study
9. Communication strategies "I" -narrative
10. Genres and genre generalizations in the professional sphere</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>16</td><td>-</td><td>16</td><td>4</td></tr>
<tr><td>ECTS Credits (количество кредитных единиц из плана):</td><td colspan="4">1</td></tr>
<tr><td>Assessment (итоговый результат по дисциплине)</td><td colspan="4">Academic assessment</td></tr>
<tr><td colspan="5">Информационные ресурсы и технологии поиска информации (Information Resources and Information retrieval information)</td></tr>
<tr><td>Objectives (цель изучения дисциплины):</td><td colspan="4">Formation of a knowledge system for the organization of independent search for information, the assimilation of library and bibliographic knowledge necessary for educational and research work.</td></tr>
<tr><td>Content (содержание дисциплины по разделам):</td><td colspan="4">1. Information and library complex of the university as an information center.
2. The strategy of searching for information in the library.
3. Search for information in the electronic catalog.
4. Automated library services.
5. Bibliographic description of the document.</td></tr>
<tr><td rowspan="2">Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные</td><td>Lecture</td><td>Practical training</td><td>Indep. study</td><td>Exam</td></tr>
<tr><td>10</td><td>13</td><td>45</td><td>4</td></tr>
</table>

работы, самостоятельную работу студента):				
ECTS Credits (количество кредитных единиц из плана):	2			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Профессионально-ориентированный курс второго иностранного языка (Professionally oriented course of the second foreign language)				
Objectives (цель изучения дисциплины):	Development and improvement of communicative language competence for the active use of a second foreign language in everyday professional communication. Development of skills of independent work with special literature in a foreign language in order to obtain professional information.			
Content (содержание дисциплины по разделам):	1. Building a career. 2. Information. 3. Quality. 4. Feedback. 5. Increase in sales. 6. Opening a new business. 7. Financial control. 8. Ethical trade.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	30	33	9
ECTS Credits (количество кредитных единиц из плана):	2			
Assessment (итоговый результат по дисциплине)	Academic assessment			