

Brief description of the study programme 38.04.05_02 Business Engineering (International Educational Program)

Training direction:	<u>38.04.05 Business Informatics</u>
Master's program:	38.04.05_02 Business Engineering (International Educational Program)
Qualification:	master

1. List of structural units implementing the program

Master's degree program in the specialization 38.04.05_02 Business Engineering (International Educational Program) 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 Master's training program.

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

The mission of the master'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.

The purpose of specialized training of masters in the Business Engineering program is to train specialists in the field of business management with an emphasis on information technology using advanced theoretical and practical achievements in the field of enterprise architecture, business process reengineering, project management, development, implementation and maintenance of information systems.

The uniqueness of the program is due to the combination of management and IT-modules, which allows to get a holistic view of the main aspects, methods and information technologies of company management. All modules are supported by management standards and technologies recognized worldwide (PRINCE2, Agile, SAP ERP, ITIL, Archi, Business Studio, MS Project).

1. Graduates of the master's degree will have the knowledge, skills and abilities to work in positions in the field of business management, which are able to:

- manage the design and development of enterprise architecture;
- develop and implement a strategy in the field of IT architecture and IT infrastructure;
- manage business reengineering projects;
- manage digital transformation projects;

- manage a digital enterprise and projects;
- participate in the development, implementation and maintenance of information systems, solutions for e-business.

2. The program is implemented in English, as the language of modern business and information technology is English. The program has a double degree agreement with the Lappeenranta University of Technology (LUT, Finland), thanks to which students, based on the selection results, have the opportunity to study in Finland and, as a result of the program, receive two diplomas at once.

3. Integration into the curriculum of disciplines as a basic module, focused on deepening knowledge in the field of management theory based on process and project approaches, and profile focus, focused on solving real cases and analytical problems on the examples of existing industry organizations that implement and use digital solutions in their activities.

4. The uniqueness of the master's program is determined by a combination of managerial, economic, mathematical, social and IT disciplines, which allows students to form a holistic view of enterprise architecture and an understanding of the processes of implementing digital solutions in an organization. Formed competencies allow the graduates of the program to analyze the current state of industry enterprises "as is" and to develop target models of business processes of the enterprise "as it should be" taking into account the implementation of digital solutions.

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: ArchiMate modeling - a tool for modeling enterprise architecture, Microsoft Project - a software product for project management; Qlik View - a business intelligence tool that allows to create analytical reporting systems.

6. Combination of both classical approaches and teaching methods (lectures and practical classes), and new, active methods, case sessions, scientific and practical seminars. Classes are taught by qualified, certified teachers from SPbPU, invited teachers from European universities, practicing specialists from leading companies in St. Petersburg. Students study on the case studies of real companies, developed jointly by GSMB employees and business representatives (Dialog IT LLC, Corus Consulting Group of Companies, SAP CIS, Gazpromneft).

3. Requirements for the applicant

Persons with higher education of any level, the presence of which is confirmed by a document of the established form, are allowed to master the BEP. Admission to training is carried out for the first year. The procedure and conditions for admission are regulated by the Rules of admission to study for master'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 spheres:

- research;
- analytical.

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:

- research;
- analytical.

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	B7. IT project management based on received project plans in conditions when the project does not go beyond the approved parameters	<p>B/25.7 Team building and development of the project team in projects of small and medium complexity in the field of IT</p> <p>B/30.7. Collection of information for initiating a project in projects of small and medium complexity in the field of IT</p> <p>B/31.7. Planning for small to medium complexity IT projects</p> <p>B/32.7 Organization of project execution in projects of small and medium complexity in the field of IT</p>

			B/33.7 Monitoring and managing project work in small and medium IT projects
			B/35.7 Completion of the project life cycle (LC) phase in projects of small and medium complexity in the field of IT
			B/36.7 Project Completion in Small and Medium IT Projects
			B/55.7 Communication planning for small and medium IT projects
			B/56.7 Identification of Stakeholders in Small and Medium IT Projects
			B/58.7 Stakeholder Management for Small and Medium IT Projects
			B/59.7 Planning risk management for small and medium IT projects
			B/60.7 Risk identification in small and medium IT projects
			B/61.7 Risk analysis in small and medium IT projects
			B/62.7 Monitoring and Risk Management in Small and Medium IT Projects

2.	06.014 Professional standard "Information Technology Manager", approved by order of the Ministry of Labor and Social Protection of the Russian Federation of October 13, 2014 No. 716n	B7. IT service management	B/01.6. IT Service Level Contract Management
			B/02.6. IT project management
			B/03.6. IT Service Delivery Model Management
			B/04.6. IT Service Change Management
			B/05.6. User and IT Service Provider Relationship Management

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

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

Professional modules (Professional), within 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 additional educational trajectory for students in addition to training in the main educational direction.

The module of project activity (Project) is an independent activity of students, focused on solving a certain practically or theoretically significant problem, implemented 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 the 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)"	60
BLOCK 2 "Practice"	54
BLOCK 3 "State final certification"	6
Total	120
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 of students with a 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 independently established educational standard of higher education in the direction of training 38.04.05 "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 38.04. 05_02 Business engineering.

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 master'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;

b) types of industrial practice: practice to obtain professional skills and professional experience; research work; pre-graduation.

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

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

7.5. Documents regulating the organization of students' research work

Documents regulating the organization of students' research work are developed and drawn up in accordance with the following list of local acts:

- Regulations on scholarships and other forms of material support for students of the federal state autonomous educational institution of higher education "Peter the Great St. Petersburg Polytechnic University", approved by Protocol No. 7 of June 29, 2020;
- The order for the main activity "On the holding of the youth competition of the FSAEI of HE "SPbPU" for achievements in research work" dated October 28, 2020 No. 1686;
- the requirements for the organization of research work of students, specified in the work program "Research work" of masters.

7.6. Organization of research work of students

Research work is carried out by a master student under the guidance of a scientific advisor. The direction of research work is determined in accordance with the topic of the master's thesis. The purpose of the research work is to integrate the educational process with the development of the professional sphere of activity in the areas of training masters to ensure the formation of students' research competencies necessary in conducting research and solving professional problems. The documents regulating the organization of students' research work are developed and executed in accordance with the Educational Policy of the University, self-established educational standards in the direction 38.04.05 Business Informatics and the requirements of professional standards. Research work of the master includes:

- Research work on business process management;
- Research work on technologies of business analysis;
- Research work on e-business architecture;
- Research work on project management;
- Research work.

Methodological recommendations for students are presented in the work program "research work".

7.7. Fund of evaluation means for state final certification

The fund of assessment means for the state final certification is developed for the implementation and protection of the final qualifying work. In the course of 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 evaluation means includes: the program of state final certification, including requirements for final qualifying works and the procedure for their implementation, criteria for assessing the results of defense of final qualifying works.

8. Places of practice and employment

Students can undergo industrial practice in IT companies: SAP CIS, ITSK LLC, as well as in consulting companies that develop and implement digital solutions. There are a number of long-term internship agreements between SPbPU and LLC Corus Consulting SRM, LLC BI Consult, LLC Dialog IT.

9. Material and technical base for educational and scientific activities

The material and technical base of the educational program of the magistracy 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 Master'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 masters in the direction 38.04.05 Business Informatics at the Institute of Industrial Management, Economics and Trade, 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 consulting and IT companies (SAP CIS LLC, Corus Consulting Group of Companies, Dialog IT LLC and others). Graduates of this program will be able not only to gain practical knowledge, but also to decide on a future job in one of the partner companies, as well as in other IT and consulting companies.

11. The international cooperation

The main international partner is Lappeenranta University of Technology (Finland).

Research collaborates with renowned researcher Kay Schröder, a lecturer at the University of Applied Sciences Zuid (Netherlands), and leader of the group of people-to-data interactions at Brightlands Smart campus. The result of the interaction is the availability of joint publications by Kai Schroeder with the teaching staff of the program on the topic of digitalization of business and the formation of a digital architecture of enterprises. Moreover, Ed Overes (Zuid University of Applied Sciences) and Juho Myakio (Emdeen University of Applied Sciences / Lear) are active partners of the program, whose research and collaborative publishing areas are related to project management, IT services and development.

Moreover, within the framework of cooperation with partner companies, master classes and trainings are held from companies such as: Swiss Island <https://www.swiss-island.ch/> and GET IT <https://myget-it.com/> on the topic of IT project management.

Also, within the framework of this program, jointly with the Rotterdam University of Applied Sciences, the Netherlands, joint student projects are being implemented in the development and creation of mobile applications commissioned by Dutch companies (Boers & Co Fijnmetaalgroep BV, 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/

12. Main scientific directions and schools

The teachers involved in the implementation of the educational program are engaged in research activities in the framework of scientific areas on the topics "Digital transformation of business", "Digital platforms", "Integrated architectural solutions of enterprises in the context of digitalization of the economy", "Digital ecosystems", "Digital enterprise

management models”, “Reengineering of enterprise 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 base 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 Master's program "Business Engineering" are 4 graduates of students (11 people - graduation in 2017, 18 people - graduation in 2018, 20 people - graduation in 2019, 17 people - graduation in 2020), of which 2 people continued their studies in graduate school and work in SPbPU, 1 works in SAP CIS, 2 people work in Dialog IT LLC, 2 people work in Korus Consulting Group of Companies and in other partner enterprises of the program.

Students of the program are fellows of grants from the Government of the Russian Federation and the President of the Russian Federation, participants and prize-winners of Russian competitions in the field of IT, innovation and management. In 2017, the students of the program presented the WorldWideCare project, which became the winner in the competition for the best innovative projects in the field of science and higher professional education in St. Petersburg in the category “Best innovative business proposal”. In 2020, a graduate of the program won the Innovation Space 2020 competition for innovative ideas (Kazan) in the Organizational Innovation nomination.

Research conducted by teachers and students is reflected in publications posted in collections of Russian and international scientific and practical conferences.

**Annotations of the educational program elements
38.04.05_02 Business engineering (International Educational
Program) (disciplines, practices and state final certification)**

Иностранный язык в профессиональной коммуникации (Foreign language in professional communication)				
Objectives (цель изучения дисциплины):	Achieving practical knowledge of a foreign language, allowing them to use it in their future professional activities and scientific work, as well as in everyday communication; creation of a base for correct understanding, translation, and processing of foreign language texts; development of communicative academic competence, allowing students to present scientific products (articles, abstracts, reports, etc.) in the academic environment.			
Content (содержание дисциплины по разделам):	<p>1. The profession of an accountant. Financial and managerial aspects. Accounting standards and audit. Discussion of negotiations to conclude an alliance.</p> <p>2. The main aspects of accounting practice. Accounting and financial reporting. Discussion of negotiations to conclude an alliance.</p> <p>3. Assets, liabilities, equity of the company. Tangible and intangible assets. Discussion of negotiations to conclude an alliance.</p> <p>4. Accounting for purchases and cash payments. The main accounting journal. Business accounts. Discussion of negotiations to conclude an alliance.</p> <p>5. Break-even point. Overheads. Fixed costs. Discussion of negotiations to conclude an alliance.</p> <p>6. Inventories, accounting systems, assessment, and accounting of stocks of the company's divisions. Discussion of negotiations to conclude an alliance.</p> <p>7. Banking practice. Financial statements. Automated accounting systems. Discussion of negotiations to conclude an alliance.</p> <p>8. Audit of the company as a check of the correctness of its performance indicators. Discussion of negotiations to conclude an alliance.</p>			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	48	50	10

ECTS Credits (количество кредитных единиц из плана):	3			
Assessment (итоговый результат по дисциплине)	Exam			
История и методология науки (на английском языке) (History and Methodology of Science (in English))				
Objectives (цель изучения дисциплины):	Formation of students' methodological and scientific culture, a system of knowledge, skills, and abilities in the field of organizing and conducting scientific research; obtaining knowledge of the basics of methodology, methods, and concepts of scientific research; the formation of practical skills and abilities to apply scientific methods; education of moral qualities, instilling ethical norms in the process of carrying out scientific research.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. The emergence of science. General terms. 2. Scientific knowledge during the Middle Ages and the Renaissance. 3. Arab scientific heritage. 4. Classical science of the 18th-19th centuries. 5. The concept of scientific research. 6. Methods of theoretical and empirical research. 7. The concept of systemic methodology. 8. Communications and their specificity in modern science. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	16	83	9
ECTS Credits (количество кредитных единиц из плана):	3			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Цифровые ресурсы в научном исследовании (на английском языке) (Digital Resources in Scientific Research (in English))				
Objectives (цель изучения дисциплины):	Acquisition of scientific discussion skills. Acquisition of skills for the formulation of goals, objectives, subject, and object of research within the framework of the student's research work. Description of the research process. Mastering research methods. Modeling the problem.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Types and stages of scientific research 2. Problems for discussion and analysis. 3. Modeling the problem. 			

Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	2	14	88	4
ECTS Credits (количество кредитных единиц из плана):	3			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Архитектура предприятия (на английском языке) (Enterprise Architecture (in English))				
Objectives (цель изучения дисциплины):	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 are solving in the field of development, implementation and adaptation of modern information technologies; teaching students the basics of project management, reengineering of enterprise architecture and business processes.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Basic concepts of Enterprise Architecture. 2. Modeling the business layer of the 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. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	34	124	42
ECTS Credits (количество кредитных единиц из плана):	6			
Assessment (итоговый результат по дисциплине)	Exam, course project			
Менеджмент бизнес-процессов (на английском языке) (Business Process Management (in English))				
Objectives (цель изучения дисциплины):	Understanding of process orientation as an organizational strategy that promotes the			

	realization of the company's competitive advantages; understanding the scope of process management to improve business efficiency.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Place of business processes in enterprise architecture. 2. Business model of the enterprise. 3. Objectives of process modeling. 4. Business process reengineering projects. 5. Quality management system and process management. 6. Process-oriented organizational structure. 7. Process-oriented implementation of information systems. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	32	60	36
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Проектный менеджмент (на английском языке) (Project Management (in English))				
Objectives (цель изучения дисциплины):	Mastering by students the basics of project management and knowledge of project management standards; teaching students the main aspects of project management, the formation of project documentation.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. The main aspects of project management - business rationale, organization, quality, planning, risk management, change management. 2. The main processes of project management. 3. Principles of project management. 4. Specificity of IT project management and complex architectural projects. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	32	60	36
ECTS Credits (количество кредитных единиц из плана):	4			

Assessment (итоговый результат по дисциплине)	Exam			
Управление ИТ-проектами (на английском языке) (IT Project Management (in English))				
Objectives (цель изучения дисциплины):	Mastering by students of the basics of project management and knowledge of project management standards, as well as key aspects of managing various project teams; teaching students the main aspects of project management, adaptation to specific tasks, the formation of project documentation, as well as management of the framework and stages of the project; mastering by students the basics of analyzing solutions in the field of ICT and designing target models of enterprise architecture.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. The main aspects of project management - business rationale, organization, quality, planning, risk management, change management. 2. The main processes of project management. 3. Principles of project management. 4. Specificity of IT project management and complex architectural projects. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	32	60	36
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Корпоративные информационные системы (на английском языке) (Corporate Information Systems (in English))				
Objectives (цель изучения дисциплины):	Assimilation of systemic principles, the formation of skills in applying the concept of enterprise architecture in the context of architectural methodologies, for the formation of private architectures of information systems that support a business corresponding to the 6th technological order, taking into account system-wide and industrial requirements; mastering the principles of IT project management, including projects for the implementation and modernization of information systems.			

Content (содержание дисциплины по разделам):	<p>1. Modern trends in the information society. The essence of digitalization and digital transformation according to the systemic cybernetic methodology.</p> <p>2. Formation of requirements for modern CIS in accordance with basic concepts. ERP concept.</p> <p>3. Evolution of CIS: analysis of development from the establishment of CIS to ERP, ERPII, ERP of the 3rd generation. Classes of tasks are supported by modern CIS in the context of digitalization.</p>			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	32	60	36
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Хранилища данных и бизнес-аналитика (на английском языке) (Data Warehouse and Business Intelligence (in English))				
Objectives (цель изучения дисциплины):	<p>Understanding of modern concepts in the field of data warehouse management to improve business efficiency. Formation of skills to apply methods of designing data warehouses and their subsequent processing. Understanding the specifics of data warehouse management for various types of enterprise activities.</p>			
Content (содержание дисциплины по разделам):	<p>1. Introduction to data warehouses.</p> <p>2. Architecture of corporate data warehouses.</p> <p>3. Logical design of data warehouses.</p> <p>4. Method of multivariate modeling.</p> <p>5. Physical modeling of data warehouses.</p> <p>6. Design and development of the process of extracting, transforming and loading data.</p> <p>7. SQL in data warehouses.</p> <p>8. Methods of multivariate data analysis.</p>			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	32	99	33
ECTS Credits (количество кредитных единиц из плана):	5			

Assessment (итоговый результат по дисциплине)	Exam, course project			
Управление ИТ-сервисами (на английском языке) (IT Service Management (in English))				
Objectives (цель изучения дисциплины):	Mastering the methods, standards, and means of 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 managing models for the provision, change, and coordination of IT services; mastering the skills of managing relationships with stakeholders in the development, implementation and operation of IT services; assimilation of various concepts and models of IT service management and enterprise IT infrastructure.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. The role and place of IT services in the architecture of the enterprise. 2. ITSM as an approach to the management and organization of IT services. 3. Methodologies and standards for IT service management. 4. Tools for designing and managing IT services. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	32	69	27
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam			
Электронный и мобильный бизнес (продвинутый уровень на английском языке) (Electronic and Mobile Business (advanced level in English))				
Objectives (цель изучения дисциплины):	Familiarization of students with the main technologies of electronic communications on the Internet, models of electronic and mobile business and the means of their practical implementation, technologies of electronic and mobile payments and means of ensuring information security.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Infrastructure and components of e-business. 2. Building a value chain and e-business architecture. 3. Information and technological problems of e-business. 			

	<p>4. Technologies of e-commerce in B2C, B2B, B2G systems.</p> <p>5. Systems of electronic payments, legal support of e-business and ethical issues.</p> <p>6. Marketing technologies and design of e-business systems.</p> <p>7. Mobile business and D mobile technology management in an enterprise environment.</p> <p>8. Mobile business deployment strategy, mobile marketing and social media.</p>			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	32	96	36
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Exam			
Управление качеством разработки и внедрения программного обеспечения (на английском языке) (Quality management of software development and implementation (in English))				
Objectives (цель изучения дисциплины):	<p>Teaching students the theoretical foundations and practical skills of analyzing the innovative activity of an enterprise and organizing software development projects; the main aspects of software product lifecycle management, requirements management, and development processes.</p>			
Content (содержание дисциплины по разделам):	<p>1. Review of software development processes.</p> <p>2. Process assessment and process improvement.</p> <p>3. Engineering requirements.</p> <p>4. Quality management, testing.</p> <p>5. Configuration management and change management.</p> <p>6. Management of software development processes.</p> <p>7. Methods, models and approaches to software development.</p>			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	50	20	58

ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Exam, course work			
Программная инженерия (на английском языке) (Software Engineering (in English))				
Objectives (цель изучения дисциплины):	The student analyzes and develops specifications for a set of requirements for software products; manages and monitors changes in requirements for software products; manages software engineering (development).			
Content (содержание дисциплины по разделам):	1. Working with SWEBOK V 3.0. 1.1. Introduction to SWEBOK. 1.2. Sections of knowledge and related disciplines. 1.3. Overview of topics and sections SWEBOK V 3.0. 2. Object-oriented design. 2.1. Object-oriented design properties. 2.2. Key elements. 2.3. Key connections. 2.4. UML. Object-oriented design diagrams. 3. Model Driven Architecture (MDA). 3.1. Properties of model driven architecture. 3.2. Models and diagrams of the MDA approach.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	48	13	31
ECTS Credits (количество кредитных единиц из плана):	3			
Assessment (итоговый результат по дисциплине)	Exam, course work			
Оформление и представление результатов исследований (на английском языке) (Registration and presentation of research results (in English))				
Objectives (цель изучения дисциплины):	Preparation of masters for the correct presentation, design and presentation of the results of scientific research in accordance with the requirements of GOST, regulations of the university, institute and higher school			
Content (содержание дисциплины по разделам):	1. Types, structure, methods of registration and presentation of the results of scientific research 1.1. Forms of scientific results presentation 1.2. Fundamentals of the design and			

	<p>presentation of the scientific research results</p> <p>2. Registration and presentation of the final qualifying work</p> <p>2.1. Registration of the final qualifying work</p> <p>2.2. Presentation of the final qualifying work</p>			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	16	47	9
ECTS Credits (количество кредитных единиц из плана):	2			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Дизайн пользовательского интерфейса (на английском языке) (User interface design (in English))				
Objectives (цель изучения дисциплины):	Teaching students to develop and design user interfaces; analysis and formalization of requirements for various IT solutions, systems, services, and information resources; theoretical and practical aspects of usability testing of various IT solutions, systems, services, and information resources.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Introduction to the development of user interfaces. 2. The stage of empathy. 3. The stage of focusing. 4. The stage of generation of ideas. 5. The stage of sorting ideas. 6. The stage of prototyping. 7. Testing stage. 			
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	54
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Exam			
Интерфейс программного обеспечения (на английском языке) (Software interface (in English))				
Objectives (цель изучения дисциплины):	Teaching students to develop and design user interfaces; analysis and formalization of			

	requirements for various IT solutions, systems, services, and information resources; theoretical and practical aspects of usability testing of various IT solutions, systems, services, and information resources.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Introduction to the development of user interfaces. 2. The stage of empathy. 3. The stage of focusing. 4. The stage of generation of ideas. 5. The stage of sorting ideas. 6. The stage of prototyping. 7. Testing stage. 			
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	54
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Exam			
Карьерная адаптивность (Career adaptability)				
Objectives (цель изучения дисциплины):	Expanding the area of subject knowledge of the master's student to build up the scope of professional activity.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Building a careerogram. 2. Career management in the organization. 3. Self-diagnosis of personality and self-coaching. 4. Preparation and submission of a reflective essay. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	2	-	169	9
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Образовательный форсайт (Educational foresight)				
Objectives (цель изучения дисциплины):	Formation of an idea of the practice of using online learning in the modern educational			

	<p>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.</p> <p>Study of the specific use of online courses in the educational process.</p>			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 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 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	2	-	169	9
ECTS Credits (количество кредитных единиц из плана):	5			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Практика по получению первичных профессиональных умений и навыков (Practice for obtaining primary professional skills and abilities)				
Objectives (цель изучения дисциплины):	<p>Deepening the knowledge gained in the process of theoretical training and acquisition of the necessary professional skills and abilities in accordance with the chosen direction of training. The development of practical skills and abilities, the formation of the competencies in the process of studying the existing standards of professional activity, managerial and professional (medical) concepts, existing IT solutions in the medical field.</p>			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Development of an individual task. 2. Organizational meeting to clarify the goals, objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice 			

	report.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	84	24
ECTS Credits (количество кредитных единиц из плана):	3			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Исследовательская работа по менеджменту бизнес-процессов (на английском языке) (Research work in Business Process Management (in English))				
Objectives (цель изучения дисциплины):	Deepening the knowledge gained in the process of theoretical training and acquisition of the necessary professional skills and abilities in accordance with the chosen direction of training.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Development of an individual task in accordance with the goals and objectives of the practice. 2. Organizational meeting to clarify the goals, objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice report. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	228	24
ECTS Credits (количество кредитных единиц из плана):	7			
Assessment (итоговый результат по дисциплине)	Exam			
Исследовательская работа по технологиям бизнес-анализа (на английском языке) (Research work on Business Analysis Technologies (in English))				
Objectives (цель изучения дисциплины):	Deepening the knowledge gained in the process of theoretical training and acquisition of the necessary professional skills and abilities in accordance with the chosen direction of training.			

Content (содержание дисциплины по разделам):	1. Development of an individual task in accordance with the goals and objectives of the practice 2. Organizational meeting to clarify the goals, objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice report.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	192	24
ECTS Credits (количество кредитных единиц из плана):	6			
Assessment (итоговый результат по дисциплине)	Exam			
Исследовательская работа по архитектуре электронного бизнеса (на английском языке) (Research work on e-business Architecture (in English))				
Objectives (цель изучения дисциплины):	Deepening the knowledge gained in the process of theoretical training and acquisition of the necessary professional skills and abilities in accordance with the chosen direction of training.			
Content (содержание дисциплины по разделам):	1. Development of an individual task in accordance with the goals and objectives of the practice. 2. Organizational meeting to clarify the goals, objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice report.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	156	24
ECTS Credits (количество кредитных единиц из плана):	5			

Assessment (итоговый результат по дисциплине)	Exam			
Исследовательская работа по проектному менеджменту (на английском языке) (Research work on Project Management (in English))				
Objectives (цель изучения дисциплины):	Deepening the knowledge gained in the process of theoretical training and acquisition of the necessary professional skills and abilities in accordance with the chosen direction of training.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Development of an individual task in accordance with the goals and objectives of the practice. 2. Organizational meeting to clarify the goals, objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice report. 			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	192	24
ECTS Credits (количество кредитных единиц из плана):	6			
Assessment (итоговый результат по дисциплине)	Exam			
Практика по получению профессиональных умений и опыта профессиональной деятельности (в том числе технологическая практика) (Practice for obtaining professional skills and professional experience (including technological practice))				
Objectives (цель изучения дисциплины):	Gaining practical experience, including independent activity at the enterprise (in the company) and competencies in the areas of professional activity.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Development of an individual task in accordance with the goals and objectives of the practice. 2. Organizational meeting to clarify the goals, objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice 			

	report.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	432	-
ECTS Credits (количество кредитных единиц из плана):	12			
Assessment (итоговый результат по дисциплине)	Exam			
Научно-исследовательская работа (Research work)				
Objectives (цель изучения дисциплины):	Gaining practical experience, including independent activity at the enterprise (in the company) and competencies in the areas of professional activity.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Development of an individual task in accordance with the goals and objectives of the practice. 2. Organizational meeting to clarify the goals, objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice report. 			
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)	Exam			
Преддипломная практика (Undergraduate practice)				
Objectives (цель изучения дисциплины):	Gaining practical experience, including independent activity at the enterprise (in the company) and competencies in the areas of professional activity.			
Content (содержание дисциплины по разделам):	<ol style="list-style-type: none"> 1. Development of an individual task in accordance with the goals and objectives of the practice. 2. Organizational meeting to clarify the goals, 			

	objectives, content and order of internship. 3. Acquaintance with the place of the practice. 4. Collection and processing of regulatory, industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice report.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	-	324	-
ECTS Credits (количество кредитных единиц из плана):	9			
Assessment (итоговый результат по дисциплине)	Exam			
Защита выпускной квалификационной работы, включая подготовку к защите и процедуру защиты (Defense of the final qualifying work, including preparation for defense and defense procedure)				
Objectives (цель изучения дисциплины):	Establishing the level of preparedness of a graduate of a higher educational institution to perform professional tasks and the compliance of his training with the requirements of the independently established educational standards 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)	-			
Русский язык как иностранный (Russian as a foreign language)				
Objectives (цель изучения дисциплины):	The formation of students' communicative-speech and language competencies necessary for communication in the social, official-business and socio-cultural spheres of communication			

	(common language), the formation of competencies in the educational, educational, scientific and professional spheres of communication (scientific style of speech / language of specialty).			
Content (содержание дисциплины по разделам):	1. Conversation: Work and education. Grammar: participles and gerunds. 2. Conversation: Politics and Economics. Grammar: the kind of the verb in the infinitive. 3. Conversation: Social problems in society. Grammar: the kind of the verb in the imperative. 4. Conversation: Science in modern society. Grammar: prefixed verbs.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	-	32	67	45
ECTS Credits (количество кредитных единиц из плана):	4			
Assessment (итоговый результат по дисциплине)	Academic assessment, Exam			
Семинар по бизнес-инжинирингу (Business Engineering Seminar)				
Objectives (цель изучения дисциплины):	Formation of an idea about the possibilities of the received specialty, the structure of the educational program. Formation of understanding of business and enterprise as a system of heterogeneous elements.			
Content (содержание дисциплины по разделам):	1. Business engineering as an approach to the creation and management of enterprises. 2. Current trends in business management.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	16	-	47	9
ECTS Credits (количество кредитных единиц из плана):	2			
Assessment (итоговый результат по дисциплине)	Academic assessment			
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 environment			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	2	4	26	4
ECTS Credits (количество кредитных единиц из плана):	1			
Assessment (итоговый результат по дисциплине)	Academic assessment			
Эконометрический анализ данных (на английском языке) (Econometric Data Analysis (in English))				
Objectives (цель изучения дисциплины):	Acquaintance of students with modern econometric methods and their field of application for solving applied problems of quantitative data analysis.			
Content (содержание дисциплины по разделам):	1. Missing data and their types. 2. Models of discrete choice. 3. Regression analysis. 4. Descriptive data analysis. Correlation analysis. 5. Time series. 6. Factor analysis. 7. Cluster analysis.			
Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	Lecture	Practical training	Indep. study	Exam
	32	16	24	36
ECTS Credits (количество кредитных единиц из плана):	3			
Assessment (итоговый результат по дисциплине)	Exam			