

### Brief description of the study programme 38.04.05\_04 Digital Healthcare

<b>Training specialization:</b>	<u>38.04.05 Business Informatics</u>
<b>Master's program:</b>	38.04.05_04 Digital Healthcare
<b>Qualification:</b>	master

#### 1. List of structural units implementing the program

Master's degree program in the specialization 38.04.05\_04 Digital Healthcare is implemented at the Institute of Industrial Management, Economics and Trade, the graduating 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 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 healthcare organizations.

The purpose of the specialized training of masters in the Digital Healthcare program is to form the following competencies: creation, reorganization and development of the architecture of medical organizations to achieve strategic goals using modern methods, technologies and tools.

The uniqueness of the Master's program Digital Healthcare lies in its focus on the current change in management models of medical organizations in Russia and the world, caused by the processes of digitalization and digital transformation of healthcare, a qualitatively new level of medical care based on the concepts of value-based and personalized medicine.

1. Graduates of the master's degree will have the knowledge, skills and abilities to work in positions in the development of medical business and IT infrastructure, as researchers and developers of information systems and technologies for medical organizations, managers of various levels, leaders of reorganization projects in medical organizations, business-analysts in the field of healthcare, in academic and scientific and technical institutes, in universities and other educational institutions.

2. Involvement of leading specialists from the IT sphere and the sphere of healthcare management in the training process in order to transfer to the masters the practical experience of digitalization of medical, managerial and

supporting processes and to assess the effectiveness of a medical organization.

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 profile focus, focused on solving real cases and analytical problems on the examples of existing medical organizations implementing and using digital solutions in healthcare.

4. The uniqueness of the master's program is determined by a combination of managerial, economic, mathematical, social and IT disciplines, adapted to the specifics of the healthcare industry, giving a holistic view of the main aspects, methods and information technologies of managing a medical organization. Formed competencies allow program graduates to analyze the current state of digitalization of medical 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 - a tool for enterprise architecture modeling, Microsoft Project - a software product for project management; QlikView - 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 activities. In teaching, we use cases developed jointly with the leading medical and IT companies of St. Petersburg (FSBI "NMIT named after V. A. Almazov" Ministry of Health of Russia, Group of clinics "SOGAZ MEDICINA", LLC "Netrika"). 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 medical and IT companies.

### **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;  
07 Administrative, managerial and office activities (in the areas of development and implementation of enterprise management systems);  
as well as following spheres:

- research;
- organization 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:**

- research;
- 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	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> <p>B/33.7 Monitoring and managing project work in small and medium IT projects</p> <p>B/35.7 Completion of the project life cycle (LC) phase</p>

			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.	07.007 Professional standard "Process management specialist", approved by order of the Ministry of Labor and Social Protection of the Russian Federation of April 17, 2018 No. 248n	C7. Design and implementation of a process management system for an organization	C/01.7. Analysis of the organization's process management system for the purposes of its design, improvement and implementation C/02.7. Development and improvement of the organization's process management system

## 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 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 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 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\_04 Digital Healthcare.

### **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 and is drawn up in the form of appendixes to the programs.

### **7.5. 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".

### **7.6. Fund of assessment tools for state final certification**

The fund of assessment 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 assessment tools 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 their internship in medical organizations, in consulting companies that develop and implement digital solutions in the healthcare sector. There are a number of long-term agreements on internship between SPbPU and FSBI "NMIT named after V.A. Almazov" of the Ministry of Health of the Russian Federation, LLC "Nauka ", LLC "KORUS CONSULTING GK".

Applications for graduates are received from the FSBI "NMIT named after V.A. Almazov" of the Ministry of Health of the Russian Federation, from the company "Netrika" LLC, which has a Cooperation Agreement with SPbPU No. 2018/2 dated February 26, 2018.

### **9. Material and technical base for educational and scientific activities**

The material and technical base of the master 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 Master's programs includes:

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

The laboratories equipped with the necessary equipment to implement the training of masters in the specialization 38.04.05 Business Informatics at Institute of Industrial Management, Economics and Trade are:

- 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 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), as well as specialists FSBI "NMIT named after V.A. Almazov" of the Ministry of Health of the Russian Federation. Graduates of this program will be able not only to gain practical knowledge, but also to decide on a future place of work in FSBI "NMIT named after V.A. Almazov" of the Ministry of Health of the Russian Federation.

## **11. The international cooperation**

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

In the framework of scientific research, cooperation with the famous scientist Joel Rodrigues (Rodrigues, J. J.) is carried out, who has a number of Scopus publications devoted to the application of digital solutions and technologies in healthcare. The result of the interaction is the presence of a joint publication by Joel Rodriguez and the scientific supervisor of the program, Prof. I.V. Ilyin.

Employees of the Graduate School of Management and Business conduct joint research in the field of digitalization of healthcare, visualization of medical data, as well as analysis of technologies and capabilities of the Smart Hospital concept.

## **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 Master's program "Digital Healthcare" are two graduates of students (11 people - graduation in 2019, 7 people - graduation in 2020), of which 9 people are currently employees of the FSBI "NMIT named after V.A. Almazov" of the Ministry of Health of the Russian Federation. Close cooperation with FSBI "NMIT named after V.A. Almazov" of the Ministry of Health of the Russian Federation led to the publication of joint scientific research in the monograph Management of a medical organization: the SMART HOSPITAL concept. // Shlyakhto E.V., Ilyin I.V., Konradi A.O., Borremans A.D., Glebov V.S., Dubgorn A.S., Ilyashenko V.M., Ilyashenko O.Yu., Lepekhin A.A., Levina A.I., Mulyukha V.A., Ovchinnikov D.A. St. Petersburg, 2020. GSMB teachers are actively involved in research under grants:

- RFBR grant "Improving the economic efficiency of managing medical organizations in the context of digital transformation", 2019-2021, head - Doctor of Economics, prof. I.V. Ilyin;
- RFBR grant "Methodology for the implementation of end-to-end digital technologies in the system of geographically distributed medical organizations", 2020-2022, head - senior lecturer A.S. Dubgorn.

**Annotations of the educational program elements  
38.04.05\_04 «Digital healthcare» (disciplines, practices and state  
final certification)**

<b>Иностранный язык в профессиональной коммуникации (Foreign language in professional communication)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	<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>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	6	96	6

<b>ECTS Credits (количество кредитных единиц из плана):</b>	3			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>История и методология науки (History and Methodology of Science)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. The emergence of science. General terms.</li> <li>2. Scientific knowledge during the Middle Ages and the Renaissance.</li> <li>3. Arab scientific heritage.</li> <li>4. Classical science of the 18th-19th centuries.</li> <li>5. The concept of scientific research.</li> <li>6. Methods of theoretical and empirical research.</li> <li>7. The concept of systemic methodology.</li> <li>8. Communications and their specificity in modern science.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	6	98	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	3			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Цифровые ресурсы в научном исследовании (Digital Resources in Scientific Research)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			

<b>Content (содержание дисциплины по разделам):</b>	1. Types and stages of scientific research 2. Problems for discussion and analysis. 3. Modeling the problem.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	16	18	70	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	3			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Архитектура предприятия (Enterprise Architecture)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	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.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	4	12	185	15
<b>ECTS Credits (количество кредитных единиц из плана):</b>	6			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam, course project			

<b>Менеджмент бизнес-процессов (Business Process Management)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	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.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	4	8	123	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	4			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Проектный менеджмент (Project Management)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	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.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	16	113	9

<b>ECTS Credits (количество кредитных единиц из плана):</b>	4			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Управление ИТ-проектами (IT Project Management)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. The main aspects of project management - business rationale, organization, quality, planning, risk management, change management.</li> <li>2. The main processes of project management.</li> <li>3. Principles of project management.</li> <li>4. Specificity of IT project management and complex architectural projects.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	16	113	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	4			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Ресурсный менеджмент медицинской организации (Resource management of a medical organization)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Mastering by students of methods and approaches to accounting and resource management of a medical organization; mastering key approaches to the management and optimization of various types of resources.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. The concept of resource management, types of resources, management tasks.</li> <li>2. Process approach to organization management and resource management.</li> </ol>			

	3. Concepts of enterprise management (Lean, Kanban, etc.). Impact and opportunities for optimizing resource management. 4. Project management and resource management.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	8	8	119	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	4			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Медицинские информационные системы (Medical information systems)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	1. Modern trends in the information society. The essence of digitalization and digital transformation according to the system-cybernetic methodology. 2. Formation of requirements for modern CIS in accordance with basic concepts. 3. Evolution of CIS: analysis of development from the establishment of CIS to ERP, ERP II, ERP of the 3rd generation. Classes of tasks supported by modern CIS in the context of digitalization.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	4	14	147	15
<b>ECTS Credits (количество кредитных единиц из плана):</b>	5			

<b>Assessment (итоговый результат по дисциплине)</b>	Exam, course project			
<b>Экономика и финансирование здравоохранения (Health Economics and Financing)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Obtaining theoretical knowledge and practical skills in forming a financing strategy for a medical organization; training of specialists ready to carry out the functions of organizing and managing the financial and economic activities of medical organizations of all forms of ownership.			
<b>Content (содержание дисциплины по разделам):</b>	1. Health Economics. 1.1. Market and market relations in the health care system. 1.2. Cost-effectiveness in healthcare. 1.3. Methodological foundations for assessing the effectiveness in medical practice. 1.4. Healthcare Marketing. 2. Financing of health care. 2.1. Fundamentals of Health Care Financing. 2.2. Interaction in the health care system. 2.3. Healthcare pricing. 2.4. Remuneration for labor in health care.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	8	121	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	4			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Управление качеством (Quality control)</b>				
<b>Objectives (цель изучения дисциплины):</b>	To generate knowledge on the fundamental points in the field of quality management; to teach how to apply quality management standards in practice in the management system of a medical organization.			
<b>Content (содержание дисциплины по разделам):</b>	1. The quality and effectiveness of medical care. 2. Medical technologies and their assessment. 3. Technologies for ensuring and managing quality in medicine. 4. Standardization in health care. 5. Forms of economic motivation in health care. 6. Economic evaluation of quality management programs in health care.			

<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	12	81	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	3			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Правовые аспекты (Legal aspects)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Formation of the ability to apply the existing management standards of a medical organization within the legal framework. Formation of skills to use the legal framework governing the work of a medical organization.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Quality management as the basis for the successful operation of a medical organization in a market economy.</li> <li>2. International quality standards in healthcare of the Russian Federation (legal aspect).</li> <li>3. State standards of the Russian Federation.</li> <li>4. Legal basis for medical examinations.</li> <li>5. Legal regulation of donation and transplantation of human organs and tissues.</li> <li>6. Legal basis for the provision of psychiatric and drug addiction care.</li> <li>7. Legal responsibility.</li> <li>8. Contracts for the provision of medical care.</li> <li>9. Legal qualification of medical errors.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	8	54	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	2			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Иностранный язык: в медицине (Foreign language: in medicine)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Formation of communication skills in a foreign language in the field of medicine and healthcare organization. Development of reading and understanding skills in specialized medical literature in a foreign language.			

<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Anatomy of the human body.</li> <li>2. The human digestive system.</li> <li>3. Human cardiovascular system.</li> <li>4. The human respiratory system.</li> <li>5. The human nervous system.</li> <li>6. Human endocrine system.</li> <li>7. The genitourinary system of a person.</li> <li>8. Basics of providing therapeutic care.</li> <li>9. Basics of providing surgical care.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	8	60	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	2			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Иностранный язык: бизнес-английский (Foreign language: business English)</b>				
<b>Objectives (цель изучения дисциплины):</b>	<p>Formation of communication skills in oral and written forms in a foreign language for the purpose of international exchange of theoretical and practical achievements in the field of medicine and healthcare organization;</p> <p>Formation of skills that allow you to understand and express yourself fluently in a foreign language in business negotiations and business correspondence.</p>			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Checking the level of proficiency in business vocabulary (introductory test)</li> <li>2. Vocabulary of a business foreign language (business English): getting to know the company. Acquaintance with the company. Types of companies. Differences between Russian and international companies.</li> <li>3. Vocabulary of a business foreign language (business English): travel abroad.</li> <li>4. Business English grammar. Open punctuation rules in business correspondence. Polylexemic combinations in business correspondence. The main morphological forms and syntactic models used in business correspondence and oral business speech.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы,</b>	Lecture	Practical training	Indep. study	Exam
	-	8	60	4

<b>самостоятельную работу студента):</b>				
<b>ECTS Credits (количество кредитных единиц из плана):</b>	2			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Современные технологии управления оказанием медицинской помощи (Modern technologies of medical care management)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Formation of abilities for the development and improvement of process management systems of a medical organization; the formation of ideas and abilities about the organization and implementation of modern technologies for managing the provision of medical care to the provision of medical services based on innovative approaches.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. The evolution of management thought. Basic classical schools of management.</li> <li>2. Modern concepts of management and features of management of healthcare organizations.</li> <li>3. Theoretical problems of public health and health care.</li> <li>4. Public health and disease prevention. Study and assessment of the health status of the population.</li> <li>5. Modern IT technologies in medicine.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	8	81	12
<b>ECTS Credits (количество кредитных единиц из плана):</b>	3			
<b>Assessment (итоговый результат по дисциплине: экзамен (в каком виде), зачет (в каком виде), курсовая работа (проект)):</b>	Exam, course work			
<b>Оформление и представление результатов исследований (Registration and presentation of research results)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Types, structure, methods of registration and presentation of the results of scientific research <ol style="list-style-type: none"> <li>1.1. Forms of scientific results presentation</li> <li>1.2. Fundamentals of the design and presentation of the scientific research results</li> </ol> </li> </ol>			

	2. Registration and presentation of the final qualifying work 2.1. Registration of the final qualifying work 2.2. Presentation of the final qualifying work			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	16	52	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	2			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Управление персоналом в медицинской организации (Personnel management in a medical organization)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Formation of students' basic knowledge and skills in the formation and organization of the functioning of personnel management systems in a medical organization; development of skills for planning personnel work in a medical organization; formation of ideas about the organization of training and advanced training of personnel of a medical organization.			
<b>Content (содержание дисциплины по разделам):</b>	1. Technology of personnel management of a medical organization. 2. Technologies for managing the development of personnel in a medical organization. 3. Management of the behavior of personnel in a medical organization of a medical organization. 4. Evaluation of the effectiveness of the personnel management system in a medical organization.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	10	155	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	5			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Кадровая политика медицинской организации (Personnel policy of a medical organization)</b>				

<b>Objectives (цель изучения дисциплины):</b>	Formation of an understanding of the essence of the personnel policy of a medical organization, its main directions and stages of formation; formation of ideas about the organization of training and advanced training of personnel; formation of skills for the development of personnel methodological documentation and local regulations.			
<b>Content (содержание дисциплины по разделам):</b>	1. Personnel policy and development strategy of a medical organization. 2. Personnel planning in a medical organization.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	10	155	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	5			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Карьерная адаптивность (Career adaptability)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Expanding the area of subject knowledge of the master's student to build up the scope of professional activity.			
<b>Content (содержание дисциплины по разделам):</b>	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.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	2	17	157	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	5			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Образовательный форсайт (Educational foresight)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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			

	<p>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.</p>			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Basic concepts and definitions of e-learning and online learning</li> <li>2. Acquaintance with online resources hosted on open educational platforms. Acquaintance with foreign educational platforms.</li> <li>3. Independent study of an online resource. Mandatory study of a resource posted on a foreign platform.</li> <li>4. Passing intermediate tests of an online resource to demonstrate the progress of learning the material</li> <li>5. Work on the forum of an online resource</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	2	17	157	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	5			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Практика по получению первичных профессиональных умений и навыков (Practice for obtaining primary professional skills and abilities)</b>				
<b>Objectives (цель изучения дисциплины):</b>	<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>			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Development of an individual task.</li> <li>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</li> <li>3. Acquaintance with the place of the practice.</li> <li>4. Collection and processing of regulatory, industrial and technological information.</li> <li>5. Implementation of an individual assignment.</li> <li>6. Drawing up and execution of the practice report.</li> </ol>			

<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	-	98	10
<b>ECTS Credits (количество кредитных единиц из плана):</b>	3			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Исследовательская работа по менеджменту бизнес-процессов (Research work in Business Process Management)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Development of an individual task in accordance with the goals and objectives of the practice.</li> <li>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</li> <li>3. Acquaintance with the place of the practice.</li> <li>4. Collection and processing of regulatory, industrial and technological information.</li> <li>5. Implementation of an individual assignment.</li> <li>6. Drawing up and execution of the practice report.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	-	242	10
<b>ECTS Credits (количество кредитных единиц из плана):</b>	7			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Исследовательская работа по технологиям бизнес-анализа (Research work on Business Analysis Technologies)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	1. Development of an individual task in accordance with the goals and objectives of the practice			

	<p>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</p> <p>3. Acquaintance with the place of the practice.</p> <p>4. Collection and processing of regulatory, industrial and technological information.</p> <p>5. Implementation of an individual assignment.</p> <p>6. Drawing up and execution of the practice report.</p>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	-	206	10
<b>ECTS Credits (количество кредитных единиц из плана):</b>	6			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Исследовательская работа по архитектуре электронного бизнеса (Research work on e-business Architecture)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	<p>1. Development of an individual task in accordance with the goals and objectives of the practice.</p> <p>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</p> <p>3. Acquaintance with the place of the practice.</p> <p>4. Collection and processing of regulatory, industrial and technological information.</p> <p>5. Implementation of an individual assignment.</p> <p>6. Drawing up and execution of the practice report.</p>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	-	170	10
<b>ECTS Credits (количество кредитных единиц из плана):</b>	5			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			

<b>Исследовательская работа по проектному менеджменту (Research work on Project Management)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Development of an individual task in accordance with the goals and objectives of the practice.</li> <li>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</li> <li>3. Acquaintance with the place of the practice.</li> <li>4. Collection and processing of regulatory, industrial and technological information.</li> <li>5. Implementation of an individual assignment.</li> <li>6. Drawing up and execution of the practice report.</li> </ol>			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	-	206	10
<b>ECTS Credits (количество кредитных единиц из плана):</b>	6			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>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))</b>				
<b>Objectives (цель изучения дисциплины):</b>	Gaining practical experience, including independent activity at the enterprise (in the company) and competencies in the areas of professional activity.			
<b>Content (содержание дисциплины по разделам):</b>	<ol style="list-style-type: none"> <li>1. Development of an individual task in accordance with the goals and objectives of the practice.</li> <li>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</li> <li>3. Acquaintance with the place of the practice.</li> <li>4. Collection and processing of regulatory, industrial and technological information.</li> <li>5. Implementation of an individual assignment.</li> <li>6. Drawing up and execution of the practice report.</li> </ol>			
<b>Teaching and learning methods (количество часов):</b>	Lecture	Practical training	Indep. study	Exam

часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):	-	-	432	-
ECTS Credits (количество кредитных единиц из плана):	12			
Assessment (итоговый результат по дисциплине)	Exam			
<b>Научно-исследовательская работа (Research work)</b>				
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"> <li>1. Development of an individual task in accordance with the goals and objectives of the practice.</li> <li>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</li> <li>3. Acquaintance with the place of the practice.</li> <li>4. Collection and processing of regulatory, industrial and technological information.</li> <li>5. Implementation of an individual assignment.</li> <li>6. Drawing up and execution of the practice report.</li> </ol>			
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			
<b>Преддипломная практика (Undergraduate practice)</b>				
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"> <li>1. Development of an individual task in accordance with the goals and objectives of the practice.</li> <li>2. Organizational meeting to clarify the goals, objectives, content and order of internship.</li> <li>3. Acquaintance with the place of the practice.</li> <li>4. Collection and processing of regulatory,</li> </ol>			

	industrial and technological information. 5. Implementation of an individual assignment. 6. Drawing up and execution of the practice report.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	-	324	-
<b>ECTS Credits (количество кредитных единиц из плана):</b>	9			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			
<b>Защита выпускной квалификационной работы, включая подготовку к защите и процедуру защиты (Defense of the final qualifying work, including preparation for defense and defense procedure)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			
<b>Content (содержание дисциплины по разделам):</b>				
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	-	-	216	-
<b>ECTS Credits (количество кредитных единиц из плана):</b>	6			
<b>Assessment (итоговый результат по дисциплине)</b>	-			
<b>Семинар по бизнес-инжинирингу (Business Engineering Seminar)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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.			

<b>Content (содержание дисциплины по разделам):</b>	1. Business engineering as an approach to the creation and management of enterprises. 2. Current trends in business management.			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	6	-	62	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	2			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Основы работы в ЭИОС (Basics of work in EIEE)</b>				
<b>Objectives (цель изучения дисциплины):</b>	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			
<b>Content (содержание дисциплины по разделам):</b>	1. Components and factors of the information and educational environment formation. 2. Information and educational space. 3. Man in the information and educational environment			
<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	2	4	26	4
<b>ECTS Credits (количество кредитных единиц из плана):</b>	1			
<b>Assessment (итоговый результат по дисциплине)</b>	Academic assessment			
<b>Эконометрический анализ данных (Econometric Data Analysis)</b>				
<b>Objectives (цель изучения дисциплины):</b>	Acquaintance of students with modern econometric methods and their field of application for solving applied problems of quantitative data analysis.			
<b>Content (содержание дисциплины по разделам):</b>	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.			

<b>Teaching and learning methods (количество часов: на лекции, практические занятия или лабораторные работы, самостоятельную работу студента):</b>	Lecture	Practical training	Indep. study	Exam
	4	2	93	9
<b>ECTS Credits (количество кредитных единиц из плана):</b>	3			
<b>Assessment (итоговый результат по дисциплине)</b>	Exam			