Recomended pass through the study plan

Name of the pass: Systematic Integration of Processe in Healthcare 24/25, 25/26, 26/27

Faculty/Institute/Others:
Department:
Pass through the study plan: Systematic Integration of Prosesses of Healthcare
Branch of study guranteed by the department: Welcome page
Guarantor of the study branch:
Program of study: Systematic Integration of Processes in Healthcare
Type of study: Follow-up master full-time
Note on the pass: Informaci o předepsaném minimálním počtu PV předmětů pro konkrétní jednotlivé semestry najdete v odpovídajícím studijním plánu programu.

Coding of roles of courses and groups of courses:
P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):
KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 1

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* Tutors, **authors** and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7PMS1AM	**Applied Mathematics** *David Vrba* ***David Vrba*** *David Vrba (Gar.)*	Z,ZK	5	2P+2S	Z	z
17BOZP	**Occupational Safety and Health, Fire Protection and First Aid** *Petr Kudrna* ***Petr Kudrna*** *Petr Kudrna (Gar.)*	Z	0	1P	Z	z
F7PMS1EKZ	**Economic Aspects of Healthcare** *Martina Caithamlová, Petra Petrová, Aneta Benešová* ***Petra Petrová*** *Petra Petrová (Gar.)*	Z,ZK	5	2P+2S	Z	z
F7PMS1IZZ	**Information Sources in Healthcare** *Gleb Donin, Vojtěch Kamenský* ***Vojtěch Kamenský*** *Gleb Donin (Gar.)*	KZ	3	1P+1S	Z	z
F7PMS1MV	**Methodology of Research** *Jakub Ráfl, Veronika Ráfl Huttová, Vít Hlaváč* ***Jakub Ráfl*** *Jakub Ráfl (Gar.)*	KZ	5	1P+1S	Z	z
F7PMS1RNZ	**Management of Costs in Healthcare** *Martina Caithamlová* ***Martina Caithamlová*** *Martina Caithamlová (Gar.)*	KZ	5	2P+2S	Z	z
F7PMS1VZ1	**Public Health I.** *Jan Bříza, Věra Adámková* ***Jan Bříza*** *Věra Adámková (Gar.)*	ZK	5	2P	Z	z
F7PMS1VPZ	**Selected Processes in Healthcare Facilities** *Milan Bednařík* ***Milan Bednařík*** *Milan Bednařík (Gar.)*	KZ	2	1P+1S	Z	z

Number of semester: 2

Code	Name of the course / Name of the group of courses *(in case of groups of courses the list of codes of their members)* Tutors, **authors** and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7PMS1BE	**Business English**	KZ	2	2S	L	z
F7PMS1EZZ	**Economy of Healthcare Facilities** ***Petra Petrová***	Z,ZK	4	2P+2S	L	z
F7PMS1HZT	**Health Technology Assessment** ***Martina Holá***	Z,ZK	4	2P+2S	L	z
F7PMS1OP	**Professional Training** ***Petra Petrová***	Z	2	160XH	L	z
F7PMS1PLPT	**Overview of Medical Devices** ***Petr Kudrna***	Z,ZK	4	2P+2L	L	z
F7PMS1RP	**Annual Project** ***Gleb Donin***	Z	3	1S	L	z
F7PMS1RLZ	**Management of Human Resources** ***Petra Petrová***	Z,ZK	4	2P+1S	L	z
F7PMS1VZ2	**Public Health II.** ***Jan Bříza***	Z,ZK	5	2P	L	z
F7PMS1FU	**Financial Accounting of Healthcare Facilities** ***Martina Caithamlová***	KZ	2	1P+1S	L	s
F7PMS1TP	**Team Project** ***Petra Petrová***	KZ	2	2S	L	s

F7PMS1ZAD	**Fundamentals of Data Analysis** ***Vojtěch Kamenský***	KZ	2	2S	L	s

Number of semester: 3

Code	Name of the course / Name of the group of courses ***(in case of groups of courses the list of codes of their members)*** *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
F7PMS1BSCD	**Statistical Methods in the Analysis of Clinical Studies** *Aleš Tichopád, Christiane Malá* ***Christiane Malá*** *Aleš Tichopád (Gar.)*	Z,ZK	5	1P+3S	Z	z
F7PMS1EHIS	**E-Health and Information Systems in Healthcare** *Jan Bruthans, David Jirsa* ***Jan Bruthans*** *Jan Bruthans (Gar.)*	Z,ZK	5	2P+1S	Z	z
F7PMS1IP	**Individual Training** *Martina Caithamlová* ***Martina Caithamlová*** *Martina Caithamlová (Gar.)*	Z	2	80XH	Z	z
F7PMS1LKH	**Legislation in Healthcare and Clinical Evaluation** *Vojtěch Kamenský, Martina Holá, Ondřej Gajdoš, Peter Kneppo, Martina Homolková* ***Vojtěch Kamenský*** *Ondřej Gajdoš (Gar.)*	Z,ZK	5	2P+2S	Z	z
F7PMS1MZZ	**Management of Medical Facilities** *Martina Caithamlová, Petra Petrová, Ján Lešťák, Dana Jurásková* ***Petra Petrová*** *Ján Lešťák (Gar.)*	Z,ZK	5	2P+2S	Z	z
F7PMS1SDP1	**Diploma Thesis Seminar I.** ***Vladimír Rogalewicz*** *Gleb Donin (Gar.)*	Z	5	1S	Z	z
F7PMS1EE	**Economic Evaluation of Healthcare Programmes** *Gleb Donin, Ondřej Gajdoš* ***Martina Homolková*** *Gleb Donin (Gar.)*	KZ	3	2P+1S	Z	s
F7PMS1PR	**Project Management** *Petra Petrová* ***Petra Petrová*** *Aleš Tichopád (Gar.)*	KZ	3	2P+1S	Z	s
F7PMS1STT	**Smart Technologies and Telemedicine in Healthcare** *Karel Hána* ***Karel Hána*** *Karel Hána (Gar.)*	KZ	3	2P+1L	Z	s

Number of semester: 4

Code	Name of the course / Name of the group of courses ***(in case of groups of courses the list of codes of their members)*** *Tutors,* ***authors*** *and guarantors (gar.)*	Completion	Credits	Scope	Semester	Role
F7PMS1IZS	**Integrated Rescue System and the Disaster Medicine**	ZK	4	2P	L	z
F7PMS1MZT	**Health Technology Management** ***Vojtěch Kamenský***	KZ	5	2P+1S	L	z
F7PMS1RKZ	**Quality Management in Healthcare** ***Vojtěch Kamenský***	Z,ZK	5	2P+2S	L	z
F7PMS1SDP2	**Diploma Thesis Seminar II.** ***Vladimír Rogalewicz***	Z	4	1S	L	z
F7PMS1SZZ	**Strategy of Healthcare Facilities** ***Martina Caithamlová***	KZ	2	2P	L	z
F7PMS1DP	**Diploma Thesis**	Z	8	4XT	L	z
F7PMS1EM	**Enviromental Management of Medical Facilities**	KZ	2	2P+1S	L	s
F7PMS1JIP	**Icus and Mobile Healthcare Units** ***Petr Kudrna***	KZ	2	2P+1L	L	s
F7PMS1BMH	**Basics of Modelling in Healthcare** ***Vojtěch Kamenský***	KZ	2	2P+1L	L	s

List of groups of courses of this pass with the complete content of members of individual groups

List of courses of this pass:

Code	Name of the course	Completion	Credits
17BOZP	Occupational Safety and Health, Fire Protection and First Aid	Z	0

F7PMS1AM	Applied Mathematics	Z,ZK	5
The course Applied Mathematics combines both theoretical knowledge and practical skills. Theoretical knowledge is necessary to formulate a mathematical model and then to solve decision-making and optimization problems in economic processes. Practical knowledge is trained by solving concrete situations using sample examples, where students are introduced to specific methods and techniques of mathematical data analysis.			
F7PMS1BE	Business English	KZ	2
The aim of the Business English course is to familiarize students with terminology from the field of business English. During the semester, students acquire vocabulary and phrases related to business relations, the business sector and marketing. However, the emphasis is also on the development of communication skills within general English, students respond to general topics, lead a conversation, ask questions and formulate answers. Business terminology is practiced by simulating situations common both in the business sphere and in everyday life.			
F7PMS1BMH	Basics of Modelling in Healthcare	KZ	2
Basic concepts and principles of systems modelling in general. Theoretical and application analysis of the properties of models representing mainly models used in the evaluation of health technologies, as well as models from operations research, game theory and epidemiology.			
F7PMS1BSCD	Statistical Methods in the Analysis of Clinical Studies	Z,ZK	5
The course focuses on understanding the principles of statistical thinking and their application in the processing and interpretation of biomedical data. Students will learn to plan, use, and interpret statistical methods not only for scientific work but also for managerial decision-making in the fields of healthcare, pharmacy, and biotechnology. The course focuses on the practical mastery of statistical methods and their application to biomedical data. Students will learn procedures that will enable them to independently analyze data, draw conclusions, and interpret results in the context of scientific, clinical, and managerial practice.			
F7PMS1DP	Diploma Thesis	Z	8
The student's independent work at the end of the study, when the student has to demonstrate the ability to independently and comprehensively process data topic using the knowledge gained during the study. The topic of the thesis is chosen by the student from the topics offered by the department, which guarantees the mentioned study program. The student must write down the work at the beginning of the 4th semester. Work this semester submits and defends. The student defends the diploma thesis before the commission for SZZ. This paper is graded by the supervisor and the opponent according to ECTS classification scale. Subsequently, the assessment and the result of the state final exam from the thematic areas are included into one final assessment.			
F7PMS1EE	Economic Evaluation of Healthcare Programmes	KZ	3
The course is related to the course Evaluation of Health Technologies. During the semester, the student will learn in detail about specific types of analyses (cost-effectiveness analysis, cost-benefit analysis, cost-benefit analysis).			
F7PMS1EHIS	E-Health and Information Systems in Healthcare	Z,ZK	5
The subject is focused on the knowledge of electronic health care (eHealth) both at the theoretical level (classification systems, data standards, security and implementation of information systems) and at the practical level (used eHealth systems in the Czech Republic and in the world, further development and perspectives) including the follow-up to eGovernment in the Czech Republic (system of basic registers, eNeschopenka, etc.). Special emphasis is placed on information systems in the healthcare sector, both Hospital information systems (including subsystems clinical, radiological, laboratory, etc.) and information systems in the ambulatory sphere (systems for general practitioners, pharmacy information systems, etc.).			
F7PMS1EKZ	Economic Aspects of Healthcare	Z,ZK	5
This course introduces students to the fundamentals of health care economics, providing an understanding of the basic approaches to the study of health care as an important sector of the national economy. It introduces the market in health care, the occurrence of sub-market structures in health care, the supply of health care, the demand for health care and its specifics, and familiarizes students with tools for rationalizing supply and demand. In addition, the course discusses the issue of public goods, and introduces students to the concept of market failure and its forms. In terms of macroeconomics, the course deals primarily with the health sector as part of the national economy, the importance of the public sector in the national economy, and the functions of the public sector. The role of the state in the national economy is introduced. The financing of health care - sources, financial flows and forms of payment - is also discussed. Students are also introduced to basic macroeconomic concepts such as inflation, unemployment and gross domestic product. Upon successful completion, students will be able to better understand the functioning of the economic system as a whole and the economic aspects of health care.			
F7PMS1EM	Enviromental Management of Medical Facilities	KZ	2
F7PMS1EZZ	Economy of Healthcare Facilities	Z,ZK	4
During the lecture activity, students are not only familiar with generally valid theoretical starting points, but also within each lecture examples and correct practice of real entities operating in the field of healthcare are demonstrated. These materials are available on the basis of long-term cooperation between the faculty and health care providers. During the seminars, emphasis is placed on teamwork. The development of the business plan takes place in groups of 3-4 students, while the nomination to the groups is based on the result of the initial Belbin test for team roles. Students work in the MS Office environment and also use classroom software support for "modeling and simulation".			
F7PMS1FU	Financial Accounting of Healthcare Facilities	KZ	2
The course is designed as a theoretical and practical unit. Accounting is an indispensable source of information to support decision-making processes for managers and other stakeholders. The aim of the course is to introduce students to accounting issues, to familiarize them with the importance of accounting and its place in the management system of the organization. Emphasis is placed on practical application using selected model examples.			
F7PMS1HZT	Health Technology Assessment	Z,ZK	4
F7PMS1IP	Individual Training	Z	2
Individual practice is related to the subject Professional practice. A student who has already completed the Professional Practice course has the opportunity of profiling in a selected medical facility. Individual practice is an integral part of quality and qualified preparation for the future profession. During the internship, the student gets the opportunity to practice theoretical knowledge in the form of independent work under the guidance of a professional worker. Individual practice is a form of teaching where students are placed in individual workplaces in medical institutions or in manufacturing or service organizations in the field of medical devices on the basis of agreement and written recommendation of the faculty. Here, based on a set plan, students acquire in-depth practical skills and work independently under the supervision of a designated member of staff. The work experience in the selected workplaces must be of a high professional standard. During the individual practice, all hygiene, safety and other regulations given for the specific workplace are observed. Students are familiarised with the workplace operating rules. The practice is supervised and evaluated by the supervisor. The internships of the students of the study programme System Integration of Processes in Healthcare are focused mainly on the legislative area, quality control and management, medical documentation, reporting of performance to health insurance companies, selection procedures, preparation and implementation of medical equipment purchases, work with information systems, internal audit, material and technical supply, personnel management, record keeping, statistical reporting, planning, process coordination and other activities.			
F7PMS1IZS	Integrated Rescue System and the Disaster Medicine	ZK	4
F7PMS1IZZ	Information Sources in Healthcare	KZ	3
F7PMS1JIP	Icus and Mobile Healthcare Units	KZ	2
Verification of knowledge takes the form of a credit test, which is written in at least two terms.			
F7PMS1LKH	Legislation in Healthcare and Clinical Evaluation	Z,ZK	5
F7PMS1MV	Methodology of Research	KZ	5
F7PMS1MZT	Health Technology Management	KZ	5
The subject covers the areas of planning, needs assessment, selection, purchase, installation and maintenance of medical equipment, training for its safe use, service evaluation, decommissioning and disposal of medical equipment.			

F7PMS1MZZ	Management of Medical Facilities	Z,ZK	5

The aim of the course is to familiarize students with modern management and its importance for the successful functioning of the organization. It deals with the competences and profile of the manager as prerequisites for the successful performance of the manager's profession. The course introduces students to both sequential (organizing, leading people, control) and parallel (analyzing, decision-making, implementation) management functions and their practical use. Other categories of management, such as change management, time management, lean management and others, will also be explained to the students. The course also includes an introduction to crisis management. The subject is supplemented with basic information regarding the differences between a medical facility and a classic company. The seminars are practically focused, it is a series of case studies and group works used to apply theoretical knowledge to a real situation.

F7PMS1OP	Professional Training	Z	2

Professional practice is focused on learning about the activities of a manager in a healthcare facility or in a manufacturing or service organization in the healthcare sector. The aim is to acquire practical habits and skills for future employment in professional life, not only in terms of acquiring professional skills, but also working in a team. Areas of activity: - Activities in the field of medical record keeping (medical procedures, collection and processing of data for billing of health care to insurance companies, reporting system, tracking and management of costs for high-cost care, etc.). - Participation in the activities of the controlling/internal audit department, familiarization with the organization's budgets, evaluation of the performance of individual departments, complaints agenda, etc. - Participation in the processing of source data for economic decisions (providing input for further planning, participation in partial economic analyses, etc.). - Familiarisation with the area of medical equipment acquisition, including the issue of tendering procedures, preparation of documents for public procurement, drafting of medical technology kits, as well as familiarisation with the area of technical briefings for workers in the field of medical technology and occupational safety. - Familiarization with investment planning, depreciation plan, servicing of medical technology, recording of fixed assets in the organization. - Familiarisation and subsequent work with information systems (hospital IS, laboratory IS, management IS and others). - Archiving of medical documentation. - Evaluation and creation of technical documentation of medical devices. - Human resources management in the organisation - personnel planning, strategic planning in the field of HRM, training system, application of labour legislation, recruitment and selection of employees, personnel agenda, participation in support activities in the field of human resources management. - Quality control and management in healthcare institutions (implementation of quality standards in the hospital and follow-up quality standards, quality improvement processes, audits of healthcare activities, monitoring of adverse events and their resolution, documentation). - Integration of processes in healthcare facilities. The student has to undergo compulsory practice in the economic (min. 40 hours), personnel (min. 20 hours), technical (min. 40 hours) and quality (min. 20 hours) departments. Further (more detailed) focus depends on the nature of the organisation's activities.

F7PMS1PLPT	Overview of Medical Devices	Z,ZK	4

The content of the course is chosen so that it is sufficient to understand and master the issues in other related subjects. The course covers diagnostic and therapeutic techniques, including imaging systems. The student will learn the basic technical parameters of equipment commonly used in clinical practice. The course covers the categorization of medical devices, blood pressure measurement devices, measurement of bioelectric activity of the heart (ECG) - electrocardiographs, patient vital signs monitors, measurement of bioelectric activity of the brain (EEG) - electroencephalograph, measurement of bioelectric activity of the muscles (EMG) - electromyograph, electrosurgical units (ESU), pacemakers, defibrillators, intensive care unit equipment, pulmonary ventilators and basic imaging systems for X-ray, CT, SPECT, PET and ultrasound. The course also includes an overview of methods used in radiotherapy.

F7PMS1PR	Project Management	KZ	3

The subject deals with project management, its meaning, concept and tools. Emphasis is placed on resource planning, assignment of resources to tasks, duration and its change, further monitoring of project progress, reorganization (replanning) of unfinished work, etc.). The subject also includes display and visualization of the project, formatting of tables and graphs, form displays, calendar display, network diagram, resource diagram, custom display options, etc. Students also process a fictitious project using current software tools to support project management. During the seminars, students apply knowledge from the lectures, especially for the project planning stage (i.e. the pre-project phase and partly the project phase of the project). As part of the seminar, projects of a smaller scale will be solved, on which students apply selected techniques according to IPMA.

F7PMS1RKZ	Quality Management in Healthcare	Z,ZK	5

As part of the subject Quality Management in Healthcare, the student will learn about basic terms such as: product, its characteristics and definition, quality, management, requirement, customer satisfaction, eligibility. They will also familiarize themselves with the relevant standards. Within the course, the issues of the following areas are addressed: Basic concepts and principles in quality management systems. Technical standards in the field of quality control. Quality management of medical devices and evaluation of the quality and safety of health services.

F7PMS1RLZ	Management of Human Resources	Z,ZK	4

The subject introduces the basic concepts and relationships in human resource management, while the specifics of the healthcare sector are sought and studied. Another area discussed is the evaluation of the external and internal conditions of the organization and their influence on personnel work, the establishment of personnel goals and the personnel processes of the organization. Gradually, students acquire knowledge and develop their skills needed in human resource management, e.g. recruitment and selection of employees, employee evaluation, motivation, teamwork, education and development, remuneration and benefits, organization of the personnel department in the healthcare sector, etc. The exercises include practical training of selected skills; the output is a motivation letter, a CV and a simulation of the selection process.

F7PMS1RNZ	Management of Costs in Healthcare	KZ	5
F7PMS1RP	Annual Project	Z	3

The subject of the annual project is the first stage of the preparation of the diploma thesis. The main goal is, based on the processed and approved current state of the issue, to generate a suitable thesis topic, a description of the objectives, an overview of the planned methods, the expected contribution and justification of the choice of topic. At the end of the 2nd semester, the assignment selected in this way enters the approval process of the department, while it must meet the following conditions: 1. Thematically fit into the SIPZ concept - (i.e. focusing on at least 2 of the 3 basic groups of disciplines: economic-managerial, medical, technical) 2. The scope of the planned scientific work to meet the parameters for DP (especially in terms of planned methods and contribution) The topics are presented to the students by the teachers (leaders of the DP) within the so-called Topic Exchange, then listed in their initial form by the relevant leaders and listed in the "PROJECTS" system, while they are refined during the semester. To ensure the above-mentioned conditions, the student cooperates with the supervisor and the consultant, and actively participates in its preparation. According to Act 111/1998 Coll. the student has the opportunity to propose his own topic, for which the above conditions also apply. Approved year project assignments become the starting point for the second seminar, i.e. Diploma Thesis Seminar 1, where the student works on other sub-parts of the diploma thesis.

F7PMS1SDP1	Diploma Thesis Seminar I.	Z	5

The course is designed to prepare students for a final (diploma) thesis, during which they will demonstrate independent analytical and creative abilities as well as the ability to integrate knowledge from previous phases of study. Diploma thesis seminar 1 follows on from the subject and outputs from the Yearly Project subject. The seminar is conceived as an ongoing and controlled work on the methodology of the student's scientific-research (diploma) work. Based on the developed overview of the current state of the issue, the student selects suitable methods for solving the diploma thesis and prepares a specific chapter of the diploma thesis - Methods. The content of the seminar is the presentation of the process, processing and interim results of the students' thesis and their ongoing review and discussion.

F7PMS1SDP2	Diploma Thesis Seminar II.	Z	4

Brief annotation of the subject The course is designed to prepare students for a final (diploma) thesis, during which they will demonstrate independent analytical and creative abilities as well as the ability to integrate knowledge from previous phases of study. Diploma Thesis Seminar 2 builds on the outputs from the Diploma Thesis Seminar 1 and Annual Project. The aim of the seminar is to teach students to process the results and the discussion and thus bring the thesis to a successful conclusion. The content of the seminar is the presentation of the process, processing and interim results of the students' thesis and their ongoing review and discussion. The student is also being prepared for the final defense of his diploma thesis.

F7PMS1STT	Smart Technologies and Telemedicine in Healthcare	KZ	3
F7PMS1SZZ	Strategy of Healthcare Facilities	KZ	2

The long-term successful existence of any market entity depends on a clear idea of long-term strategy. Increasing competition, rising demand for healthcare services, growing patient demands and significant developments in medical science characterise the state of the contemporary healthcare sector. These facts make the management of healthcare facilities

	increasingly challenging and complex. This course introduces students to the fundamentals and phases of strategic management, the principles of strategy development and management applied to the conditions of a healthcare facility. It analyzes the different concepts: mission - vision - mission - strategic goals - strategic plan, different forms of strategies and principles of their management. It deals with the formulation of the strategy itself, its communication, implementation of the strategy - especially from the point of view of application of appropriate means and methods used in transformation of the top goals of the enterprise as a whole to lower responsibility and process levels - and providing information feedback, i.e. verifying whether the set goals are being met. The course also includes the analysis of the business plan environment, the creation of scenarios and their application in strategic planning.		
F7PMS1TP	Team Project	KZ	2
	In the course, the student is introduced to the basic concepts of marketing and the specifics of the medical market. The course analyses individual marketing strategies and applies them to the conditions of health services provision, but also to the environment of product marketing (Medtech).		
F7PMS1VPZ	Selected Processes in Healthcare Facilities	KZ	2
F7PMS1VZ1	Public Health I.	ZK	5
F7PMS1VZ2	Public Health II.	Z,ZK	5
F7PMS1ZAD	Fundamentals of Data Analysis	KZ	2

For updated information see http://bilakniha.cvut.cz/en/FF.html
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