**FEDERAL STATE BUDGETARY EDUCATIONAL INSTITUTION HIGHER EDUCATION "AMUR STATE MEDICAL ACADEMY" MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION**

AGREED
Vice-Rector for Academic Affairs.

_____ N.V. Loskutova

April 17, 2025

Decision of the Central Committee of the Moscow Council
April 17, 2025

Protocol No. 7

APPROVED
by decision of the Academic Council of the Federal State Budgetary Educational Institution of Higher Education
Amur State Medical Academy of the Ministry of Health of the Russian Federation
April 22, 2025

Protocol No. 15

Acting Rector of the Federal State Budgetary Educational Institution of Higher Education Amur State Medical Academy
Ministry of Health of Russia

_____ I.V. Zhukovets

April 22, 2025

ДОКУМЕНТ ПОДПИСАН
ЭЛЕКТРОННОЙ ПОДПИСЬЮ

Сертификат: 50AB2242604E64520B52614FA420034A
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Действителен: с 15.04.2025 до 09.07.2026

# WORKING PROGRAM DISCIPLINES "MEDICAL REHABILITATION"

Specialty: 31.05.01 General Medicine
Course: IV
Semester VII
Total hours: 108 hours
Total credits: 3 credits .
Form of control: credit in the VII semester

Blagoveshchensk 2025

**The working program of the discipline is drawn up in accordance with the requirements of the Federal State Educational Standard of Higher Education - specialist in specialty 31.05.01 General Medicine, approved by the order of the Ministry of Education and Science of Russia dated 08/12/2020, No. 988 (registered with the Ministry of Justice of Russia on 08.26.2020, No. 59493), OPOP VO (2021).**

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**APPROVED at the department meeting**
**"Physical education with a course of therapeutic exercise"**
**Protocol No. 8 dated 16.04 2025**

**Head of Department, Ph.D, Associate Professor _____ F.S. Mironov**

**Conclusion of the Expert Commission on the review of the Work Programs:**
**Protocol No. 6 dated 16.04 2025 .**

**Expert of the expert commission**
**PhD, Associate Professor _____ V.S. Matyushchenko**

**APPROVED at the meeting of the Central Monitoring Committee No. 6**
**Protocol No. 6 dated 16.04 2025**

**Chairman of the CMC No. ___, Ph.D, Associate Professor _____ F.S. Mironov**

**AGREED:**
**Dean of the Faculty of Medicine, Doctor of Medical Sciences, Associate Professor**
**_____ N.G.Brush**
**« 17 » April 2025 .**

## CONTENT

# I. EXPLANATORY NOTE

## 1.1. Characteristics of the discipline

Medical rehabilitation, as a treatment method, is firmly established in the practice of children's medical and preventive institutions. This obliges the doctor to clearly navigate the various methods and means of rehabilitation - physiotherapy and exercise therapy. Therefore, knowledge of the basics of exercise therapy and physiotherapy, as important elements of non-drug prevention and treatment of various diseases, is fundamentally important in the training of future doctors.

Due to the significant increase in the number of sick children and adolescents suffering from various diseases and not tolerating drug therapy, and sometimes the lack of drugs and financial shortage, there is a need to search for effective treatment methods. In such cases, the problem can be solved by physical methods and sanatorium-resort treatment.

Physiotherapy has numerous and very diverse in therapeutic action factors that are used for the purpose of preventing and treating diseases, increasing the body's defenses. The physiological and therapeutic effect of physical factors significantly depends on the reactivity of the body, the functional state of its individual organs and systems, age, constitutional features, etc. The anatomical and physiological characteristics of the body not only significantly affect the action of therapeutic physical means, but also determine the need to comply with a number of conditions when conducting physiotherapeutic procedures. Modern knowledge in this area allows us to formulate the basic principles of prescribing physiotherapy.

Therapeutic physical training (LFK) studies the rational use of physical training tools and the changes that occur in patients with various pathologies under their influence. LFK is used in three areas: restorative, supportive and preventive therapy, with the main area being restorative treatment, reflecting the tasks of medical rehabilitation.

## 1.2. The purpose and objectives of the discipline

**The purpose of teaching the discipline:**

- To be able to reasonably apply physical methods of treatment taking into account the mechanism of action, dosage, indications and contraindications in patients with various diseases. Based on knowledge of the mechanisms of recovery and compensation of impaired functions in various diseases, teach students to prescribe physiotherapy and exercise therapy at the inpatient, outpatient and sanatorium stages of rehabilitation treatment.

**Learning objectives of the discipline:**

- to give students a complete and coherent understanding of medical rehabilitation as a subject in general, to form an understanding of the therapeutic means of exercise therapy and physiotherapy ;
- to consider the fundamental sections of general physiotherapy and exercise therapy , necessary for understanding and application in therapeutic practice;
- to provide modern ideas about physical factors;
- development of independent clinical thinking;
- deepening skills in preparing medical documentation, working with educational, scientific, reference, medical literature and official statistical reviews, including searching the Internet.

## 1.3. The place of the discipline in the structure of the main OPEP of HE

In accordance with the Federal State Educational Standard of Higher Education, the specialty 31.05.01 General Medicine discipline “Medical Rehabilitation” is one of the disciplines of the basic part, Block 1.

The total workload is 3 credits (108 hours), taught at IV course . Form of control – credit.

When presenting the lecture course of the discipline and in practical classes, the connection between the topics and sections of the program is emphasized, thereby ensuring the perception of the discipline as a single, integral science.

The discipline " Medical rehabilitation " is a subject necessary for studying specialized disciplines that are taught in parallel with this subject or in subsequent courses. Mastering the discipline " Medical rehabilitation " precedes studying the disciplines: hospital therapy, ophthalmology, hospital surgery, pediatric surgery, obstetrics and gynecology, traumatology, orthopedics, faculty surgery, urology, outpatient therapy.

The discipline " Medical rehabilitation " consists of 3 modules, which present the most important and necessary information that determines the educational process:

Module 1: General Physiotherapy

Module 2: Physical therapy

Module 3: Sports Medicine

### 1.4. Requirements for students

To study the discipline " Medical Rehabilitation " a student must have the necessary knowledge, skills and abilities.

| **Bioethics** |
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| **Knowledge:** moral and ethical standards, rules and principles of professional medical conduct, the rights of the patient and the doctor, the main ethical documents regulating the activities of the doctor. |
| **Skills:** be able to build and maintain working relationships with patients and other team members. |
| **Skills:** be able to communicate with patients and other team members |
| **Histology, embryology, cytology.** |
| **Knowledge:** General histology (the study of tissues). Embryogenesis of tissues and systems, structure and function of cells. Special histology: Nervous system, Sensory system, Cardiovascular system, Hematopoietic and immune defense system, Endocrine system, Digestive system, Respiratory system, Skin and its derivatives, Urinary system , Reproductive systems. |
| **Skills:** be able to determine age-related patterns of development of organs and systems; analyze the results of histophysiological research. |
| **Skills:** use knowledge about the structure of various organs and systems |
| **Medical biophysics** |
| **Knowledge:** Fundamentals of using physical factors for diagnostics and treatment: ultrasound, sound, electromagnetic waves, radionuclides, ionizing radiation. Physical parameters characterizing the functional state of organs and tissues: mechanical, electrical, electromagnetic, optical. Physical phenomena and processes underlying the vital activity of the organism and their characteristics. Physicochemical properties of biological tissues. Main characteristics of factors affecting the body, biophysical mechanisms of such impact. Physicochemical essence of processes occurring in a living organism at the molecular, cellular, tissue and organ levels. Functional systems of the human body, their regulation and self-regulation when exposed to the external environment in norm and pathology. |
| **Skills:** be able to use educational, scientific, popular science literature, the Internet for professional activities, work with equipment taking into account safety regulations **.** |
| **Skills:** use educational, scientific, popular science literature, the Internet for professional activities, work with equipment taking into account safety regulations **.** |
| **Anatomy** |
| **Knowledge:** Morphofunctional characteristics of the nervous system, the conduction pathways of the spinal cord and brain, the peripheral nervous system, the autonomic nervous system; the concept of segmental innervation of the body, the Zakharyin- Geda zone , the anatomical structure of the nervous system, organs of the cardiovascular, respiratory, digestive, urinary systems, their blood supply and innervation. |

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| **Skills:** be able to analyze age- and gender-related features of the structure of organs and systems. |
| **Skills:** find cutaneous projections of various organs and anatomical structures of the human body. |
| **Normal Physiology** |
| **Knowledge:** Basic properties and states of excitable tissues, mechanisms of bioelectric phenomena and their role in coding biological information. Physiological effect of direct current and light on the body. Effect of physical factors on the basic functions of the body.<br>The concept and classification of pain; features of the morpho-functional organization of the nociceptive and antinociceptive systems; mechanisms of formation of a conditioned reflex and its inhibition; mechanisms and features of the formation of the main functional systems of the body (maintaining a constant level of nutrients in the blood, arterial pressure, internal temperature, maintaining the integrity of the body, etc.). |
| **Skills:** be able to analyze the importance of regulation of biological processes in the human body on the functioning of various body systems. |
| **Skills:** distinguish physiological reactions of the body to various external stimuli. |
| **Pharmacology** |
| **Knowledge:** General pharmacology. Routes and methods of introducing drugs into the body (electrophoresis, aerosols, electroaerosols , phonophoresis , inductophoresis ). |
| **Skills:** be able to select different groups of drugs depending on the symptoms of the disease. |
| **Skills:** choose the method of administering the drug to the patient, depending on various disease factors. |
| **Propaedeutics of internal diseases** |
| **Knowledge:** collection of complaints, anamnesis of life and disease, physical examination of patients with diseases of internal organs; leading clinical symptoms and mechanisms of their occurrence in the main diseases of internal organs |
| **Skills:** be able to interpret complaints, life and disease history, physical examination data |
| **Skills:** identify changes in symptoms at different stages of the disease. |

### 1.5. Interdisciplinary links with subsequent disciplines

The knowledge and skills acquired in the discipline "Medical Rehabilitation" are necessary for studying subsequent disciplines.

| № p /p | Name of subsequent disciplines | Numbers of discipline modules required for studying subsequent disciplines | | |
|---|---|---|---|---|
| | | I | II | III |
| 1 | Hospital therapy | + | + | + |
| 2 | Ophthalmology | + | - | - |
| 3 | Hospital surgery. Pediatric surgery | + | + | + |
| 4 | Obstetrics and gynecology | + | + | - |
| 5 | Traumatology, orthopedics | + | + | + |
| 6 | Faculty surgery, urology | + | + | + |
| 7 | Outpatient therapy | + | + | + |

**1.6. Requirements for the results of mastering the discipline**

| No. p /p | Code and name of competence | Code and the name of the indicator of achievement of competence | As a result of studying the academic discipline, the student must: | | |
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| | | | **Know** | **Be able to** | **To own** |
| **Universal competencies** | | | | | |
| 1 | **UK-1**<br>Capable<br>realize<br>critical analysis of problematic<br>situations based on a systems approach, to develop<br>strategy of action | **ID UK-1.1.**<br>Analyzes<br>problem situation as a system, identifying its components and the connections between them.<br>**ID UK-1.2.**<br>Identifies gaps in information needed to solve problem situations and designs processes to eliminate them .<br>**ID UK-1.3.**<br>Applies systems analysis to resolve problematic situations in professional work<br>sphere.<br>**ID UK-1.4** .<br>Uses logical and methodological tools for critical evaluation of modern concepts of a philosophical and social nature in his subject area.<br>**ID UK-1.5** .<br>Critically evaluates the reliability of information sources, works with conflicting information from different sources. | legal methods for solving intellectual problems and their application in the medical education system;<br><br>legal norms, basic principles and provisions of constitutional, civil, labor, family administrative and criminal law;<br><br>duties, rights, place of the doctor in society;<br><br>the main regulatory documents of international organizations, domestic and international professional medical associations | independently make legitimate decisions in a specific situation that arises during the implementation of the complex professional activities of a doctor;<br><br>protect the civil rights of doctors and patients;<br><br>competently, based on legal norms, qualify circumstances arising in the course of professional activities. | skills in solving situational problems in all sections of the discipline;<br><br>the main scientific methods of cognition: observation, description, measurement, experiment;<br><br>Skills in expressing an independent point of view, analysis and logical thinking, public speaking, moral and ethical argumentation, conducting discussions and round tables. |
| | **UK-2.**<br>Able to manage a project at all stages of its life cycle | **ID UK-2.1.**<br>Formulates a project task based on the problem posed and a method for solving it through the implementation of project management. | Basic rehabilitation measures to prevent the development of a number of diseases and complications.<br><br>Methods for solving the | Act in non-standard situations, bear social and ethical responsibility for decisions made<br><br>Formulate a project task | Knowledge of non-standard situations<br><br>Options for solving the tasks set to achieve the intended results |

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| | | **ID UK-2.2.**<br>Applies design to solve professional issues, has mastered methods for developing project goals and objectives, methods for assessing the duration and cost of a project, as well as the need for resources, including taking into account their replaceability .<br>**ID UK-2.3.**<br>Identifies and analyzes alternative solutions to assigned tasks to achieve intended results.<br>**ID UK-2.4.**<br>Monitors the progress of the project, makes additional changes to the project implementation plan, and clarifies the areas of responsibility of the project participants. | problem through the implementation of project management<br><br>Alternative solutions to the tasks set to achieve the intended results | based on the problem posed | Methods for developing the project's goals and objectives, methods for assessing the duration and cost of the project, as well as the need for resources, including taking into account their replaceability |
| | **UK-3.**<br>Able to organize and manage the work of a team, developing a team strategy to achieve the set goal | **ID UK-3.1.**<br>Establishes and develops professional contacts in accordance with the needs of joint activities, including the exchange of information and the development of a unified strategy; works in a tolerant manner in a team, exchanges information and develops a unified strategy.<br>**ID UK 3.2.**<br>Plans and adjusts the work of the team taking into account the interests, behavioral characteristics and opinions of team members, distributes tasks and delegates authority to team members. | information and development of a unified strategy<br><br>exchange of information and development of a unified strategy<br><br>constructive ways of resolving conflicts and contradictions in business communication | Establishes and develops professional contacts in accordance with the needs of joint activities<br><br>exchange of information and development of a unified strategy<br><br>distributes tasks and delegates authority to team members | adjusts the team's work taking into account the interests, behavioral characteristics and opinions of team members<br><br>distributes tasks and delegates authority to team members<br><br>constructive ways of resolving conflicts and contradictions in business communication |

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| | | **ID UK-3.3.**<br>Selects constructive ways to resolve conflicts and contradictions in business communication.<br>**ID UK-3.4.**<br>Organizes discussions on a given topic and discussion of the results of the team's work with the involvement of opponents to the developed ideas. | | | |
| | **UK-6.**<br>Able to identify and implement priorities for one's own activities and ways to improve them based on self-assessment and lifelong learning | **ID UK-6.1.**<br>Assesses his personal, situational, and time resources and uses them optimally to complete the assigned task.<br>**ID UK-6.2.**<br>Plans his activities within the framework of professional tasks.<br>**ID UK-6.3.**<br>Conducts critical self-analysis of the results of his/her own activities.<br>**ID UK-6.4.**<br>Determines priorities for professional growth and ways to improve one's own activities based on self-assessment according to selected criteria. | Methods for assessing personal, situational, and time resources<br><br>Criteria for self-analysis of the results of one's own activities<br><br>Methods for improving one's own activities based on self-assessment according to selected criteria<br><br>Priorities for professional growth based on selected criteria | Assess your personal, situational, and time resources<br><br>Optimally use your personal, situational, and time resources<br><br>Determine priorities for professional growth | Adjustment of professional growth priorities according to selected criteria |
| | **UK-7.**<br>Able to maintain an adequate level of physical fitness to ensure full social and professional activity | **ID UK-7.1.**<br>Observes and promotes healthy lifestyle standards in various life situations and in professional activities.<br>**ID UK-7.2.**<br>Plans his work and free time to optimally combine physical and mental stress and ensure efficiency.<br>**ID UK-7.3.** | Healthy lifestyle norms in various life situations<br><br>Healthy lifestyle standards in professional activities<br><br>Criteria for physical and mental stress | Plan your work and free time for the optimal combination of physical and mental activity<br><br>Plan your work and free time to ensure efficiency | Health-preserving technologies for maintaining a healthy lifestyle, taking into account the physiological characteristics of the body |

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| | | Selects health-saving technologies to maintain a healthy lifestyle, taking into account the physiological characteristics of the body. | | | |
| | **UK-9.**<br>Able to use basic defectological knowledge in social and professional spheres | **ID UK-9.1.**<br>Has an understanding of the principles of non-discriminatory interaction in communication in various areas of life, taking into account the socio-psychological characteristics of persons with disabilities.<br>**ID UK-9.2.**<br>Determines adequate ways of organizing joint professional activities with the participation of persons with disabilities. | Principles of non-discriminatory interaction in communication in various spheres of life<br><br>Social and psychological characteristics of persons with disabilities<br><br>Methods of organizing joint professional activities<br><br>Possible activities with the participation of persons with disabilities | Apply the principles of non-discriminatory interaction in communication in various spheres of life<br><br>Organize joint professional activities with the participation of persons with disabilities | Ideas about the principles of non-discriminatory interaction<br><br>Methods of organizing professional activities of persons with disabilities |
| **General professional competencies** | | | | | |
| | **OPK-1** .<br>Able to implement moral and legal norms, ethical and deontological principles in professional activities. | **ID OPK-1.1.**<br>Carries out professional activities in accordance with ethical standards and moral principles.<br>**ID OPK-1.2.**<br>Organizes professional activities, guided by legislation in the field of healthcare, knowledge of medical ethics and deontology.<br>**ID OPK-1.3.**<br>Has the skills of presenting an independent point of view, analysis and logical thinking, public speaking, moral and ethical argumentation, conducting discussions and round tables, | Moral and ethical standards, rules and principles of professional medical conduct, the rights of the patient and the doctor, the foundations of modern medical legislation;<br><br>Duties, rights, place of a doctor in society;<br><br>The main ethical documents of international organizations, domestic and international professional medical associations. | Carry out professional activities in accordance with ethical standards and moral principles<br><br>To organize professional activities, guided by legislation in the field of healthcare, knowledge of medical ethics and deontology.<br><br>Express an independent point of view, analyze the situation.<br>knows how to conduct a | Skills in presenting an independent point of view, analysis and logical thinking, public speaking, moral and ethical argumentation, conducting discussions and round tables, principles of medical deontology and medical ethics;<br><br>Skills in informing patients and their relatives in accordance with the requirements of |

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| | | principles of medical deontology and medical ethics. | | discussion at a high moral and ethical level, and argue his position<br><br>Build communications in accordance with the principles of medical deontology and medical ethics.<br><br>To protect the civil rights of doctors and patients of different ages . | the rules of "informed consent" and moral and ethical standards;<br><br>Skills in legal assessment of cases of improper provision of medical care (services), with violation of deontological standards and other violations of medical personnel. |
| | **OPK-3.**<br>Capable of counteracting and combating the use of doping in sports | **ID OPK-3.1.**<br>Predicts and implements measures to prevent the negative impact of doping on human health.<br>**ID OPK-3.2.**<br>Develops and implements methods for preventing the use of doping in sports.<br>**ID OPK-3.3.**<br>Analyzes and interprets conflicting information on doping issues. | Information on doping issues<br><br>The impact of doping on human health<br><br>Methods of preventing doping in sports | Take measures to prevent the negative impact of doping on human health<br><br>Development of methods for preventing the use of doping in sports<br><br>Interpret information on doping issues | Measures to prevent the negative impact of doping on human health<br><br>Implementation of methods for preventing the use of doping in sports. |
| | **OPK-5.**<br>Capable of assessing morphofunctional, physiological states and pathological processes in the human body to solve professional problems | **ID OPK-5.1.**<br>Knows the functional systems of the human body, their regulation and self-regulation when interacting with the external environment in normal conditions and during pathological processes.<br>**ID OPK-5.2.**<br>Knows the etiology, pathogenesis, morphogenesis, pathomorphosis of disease development, and the basic concepts of nosology. | Functional systems of the human body<br><br>Regulation and self-regulation of the functional systems of the human body when interacting with the external environment in the norm<br><br>Regulation and self-regulation of functional | Measure , determine the indicators of the morphofunctional, physiological state of a healthy person<br><br>Uses indicators of morphofunctional, physiological state and pathological process to examine the human body | Skills in measuring and determining indicators of the morphofunctional, physiological state of a healthy person<br><br>Making a diagnosis, prescribing treatment and monitoring its effectiveness and safety<br><br>Rules for prescribing |

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| | | **ID OPK-5.3.**<br>Knows the indicators of the morphofunctional and physiological state of a healthy person and can measure/determine them.<br>**ID OPK-5.4.**<br>Uses indicators of morphofunctional, physiological state and pathological process to examine the human body in order to establish a diagnosis, prescribe treatment and monitor its effectiveness and safety.<br>**ID OPK-5.5.**<br>Analyzes and interprets macroscopic and microscopic changes in normal and pathologically altered tissues and organs.<br>**ID OPK-5.6.**<br>Interprets the results of biopsy and surgical material studies to solve professional problems and formulate a diagnosis in accordance with the ICD. | systems of the human body when interacting with the external environment during pathological processes<br><br>Etiology, pathogenesis, morphogenesis, pathomorphosis of disease development<br><br>Basic concepts of nosology<br><br>Indicators of the morphofunctional, physiological state of a healthy person<br><br>Criteria for the effectiveness and safety of treatment<br><br>Formulation of diagnosis according to ICD | Have a diagnosis<br><br>Write out a treatment prescription<br><br>Monitor the effectiveness and safety of treatment | treatment<br><br>Rules for monitoring the effectiveness and safety of treatment |
| | **OPK-8.**<br>Capable of implementing and monitoring the effectiveness of medical rehabilitation of the patient, including the implementation of individual rehabilitation and habilitation programs for the disabled, and assessing the patient's | **ID OPK-8.1.**<br>Assesses the functional reserves and adaptive abilities of a person, reduced by the adverse impact of environmental factors and activities or as a result of illness.<br>**ID OPK-8.2.**<br>Identifies risk groups for the purpose of improving health and determining rehabilitation potential for subsequent restorative treatment and rehabilitation of patients.<br>**ID OPK-8.3.**<br>Develops and organizes a plan of | Functional reserves and adaptive abilities of a person<br><br>Measures and methods of restorative treatment and rehabilitation of patients<br><br>Medical rehabilitation activities for patients<br><br>methods (natural healing factors, physical and reflexology , exercise therapy) | Assess functional reserves and adaptive abilities of a person<br><br>To determine the rehabilitation potential and for subsequent restorative treatment<br><br>To determine the rehabilitation potential for rehabilitation of patients | Assessment of functional reserves and adaptive abilities of a person<br><br>Determination of rehabilitation potential according to various scales used to develop subsequent restorative treatment and rehabilitation of patients<br><br>Non-drug treatment methods (natural healing |

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| | ability to perform work activities | medical rehabilitation measures for patients, including non-drug treatment methods (natural healing factors, physical and reflexology , therapeutic exercise).<br>**ID OPK-8.4.**<br>Interprets the results of clinical, laboratory and instrumental diagnostic methods to monitor the effectiveness of medical rehabilitation programs and assess the patient's ability to perform work activities. | Results of clinical laboratory and instrumental diagnostic methods | Prescribe non-drug treatment methods (natural healing factors, physical and reflexology, therapeutic exercise)<br><br>Take into account the results of clinical, laboratory and instrumental diagnostic methods to monitor the effectiveness of medical rehabilitation programs and assess the patient's ability to perform work activities | factors, physical and reflexology , therapeutic exercise) |
| | **OPK-9.**<br>Able to implement quality management principles in professional activities | **OPK-9.1.**<br>Analyzes and critically evaluates the quality of professional activity according to specified indicators.<br>**OPK-9.2.**<br>Develops a plan of organizational and methodological measures to achieve an appropriate level of quality of professional activity. | Professional performance indicators<br><br>Criteria for assessing the quality of professional activity according to specified indicators | Analyze the quality of professional activity according to specified indicators<br><br>Assess the quality of professional activity according to specified indicators | Skills in developing a plan of organizational and methodological measures to achieve an appropriate level of quality of professional activity. |
| 4 | **OPK-11.**<br>Capable<br>prepare and apply scientific, scientific-production, design, organizational-managerial and regulatory documentation in the healthcare system | **ID OPK 11.2.**<br>Identifies and analyzes problem situations, searches for and selects scientific, regulatory and organizational documentation in accordance with the specified goals. | Basic principles and provisions of constitutional, civil, labor , family, administrative, criminal and medical law;<br><br>Moral and ethical standards, rules and principles of professional medical conduct, the rights of the patient and the doctor, the | Identify and analyze problematic situations in regulatory documentation<br><br>Prepare medical documents, maintain primary medical records, prepare documents necessary for the exercise of the right to engage in medical activities; | skills of presentation from an independent point of view, analysis and logical thinking, public speaking;<br><br>Skills in informing patients and their relatives in accordance with the requirements of the “informed consent” |

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| | | | foundations of modern medical legislation;<br><br>Duties, rights, place of a doctor in society;<br><br>The main ethical documents of international organizations, domestic and international professional medical associations. | Use and draft regulatory and legal documents related to future professional activities.<br><br>Work with regulatory documentation. | rules;<br><br>Skills in working with legal reference systems to find the necessary legal information. |
| **Professional competencies** | | | | | |
| | **PC-5.**<br>Capable prescribe treatment to patients | **ID PC-5. 1.**<br>Draws up a treatment plan for the patient taking into account the diagnosis, age of the patient, clinical picture of the disease, presence of complications, concomitant pathology, in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on issues of providing medical care, taking into account the standards of medical care<br>**ID PC-5. 2.**<br>Prescribes medications, medical devices and therapeutic nutrition taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical recommendations, taking into account the standards of medical care<br>**ID PC-5. 3.** | Current procedures for providing medical care<br><br>Criteria for developing a patient treatment plan taking into account the diagnosis, patient age, clinical picture of the disease, presence of complications, concomitant pathology<br><br>Issues of providing medical care taking into account the standards of medical care<br><br>The use of various groups of drugs in diseases<br><br>Standards of medical care | Make a treatment plan for the patient<br><br>Assess the values of functional indicators<br><br>Prescribe medications<br><br>Provide palliative care in collaboration with specialist doctors and other health care professionals<br><br>Organize personalized treatment for the patient | Skills in prescribing treatment for a patient taking into account the diagnosis, age of the patient, clinical picture of the disease, presence of complications, concomitant pathology<br><br>Skills in organizing personalized patient treatment<br><br>Skills in organizing personalized treatment for pregnant women<br><br>Skills in organizing personalized treatment for elderly and senile patients |

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| | | Prescribes non-drug treatment taking into account the diagnosis, age and clinical picture of the disease in accordance with current procedures for the provision of medical care, clinical recommendations, taking into account the standards of medical care<br>**ID PC-5. 4.**<br>Provides palliative care in collaboration with specialist doctors and other health care workers<br>**ID PC-5. 5.**<br>Organizes personalized treatment for patients, including pregnant women, elderly and senile patients | | | |
| | **PC-6.**<br>Capable of monitoring the effectiveness and safety of the therapy being administered | **ID PC-6.1.**<br>Assesses the effectiveness and safety of the use of drugs, medical devices, therapeutic nutrition and other treatment methods<br>**ID PC-6.2.**<br>Takes into account the pharmacodynamics and pharmacokinetics of the main groups of drugs, prevents the development of adverse drug reactions, and corrects them if they occur. | Criteria for the effectiveness and safety of the use of drugs, medical devices and therapeutic nutrition and other methods of treatment<br><br>Main groups of drugs | To evaluate the effectiveness and safety of the use of drugs, medical devices and therapeutic nutrition and other methods of treatment<br><br>Prevent the development of adverse drug reactions<br><br>Make adjustments if adverse drug reactions occur | Taking into account the pharmacodynamics and pharmacokinetics of the main groups of drugs<br><br>Carrying out correction in case of adverse drug reactions |
| | **PC-8.**<br>Capable of implementing and monitoring the effectiveness of individual patient | **ID PC-8.1.**<br>Determines medical indications for carrying out medical rehabilitation or habilitation measures for disabled persons, in accordance with current procedures for the provision of | Medical indications for carrying out medical rehabilitation or habilitation measures for disabled people | Carries out medical rehabilitation activities for the patient<br><br>Provide medical care, taking into account the | Selection of medical specialists to carry out rehabilitation measures for the patient, taking into account the diagnosis and in |

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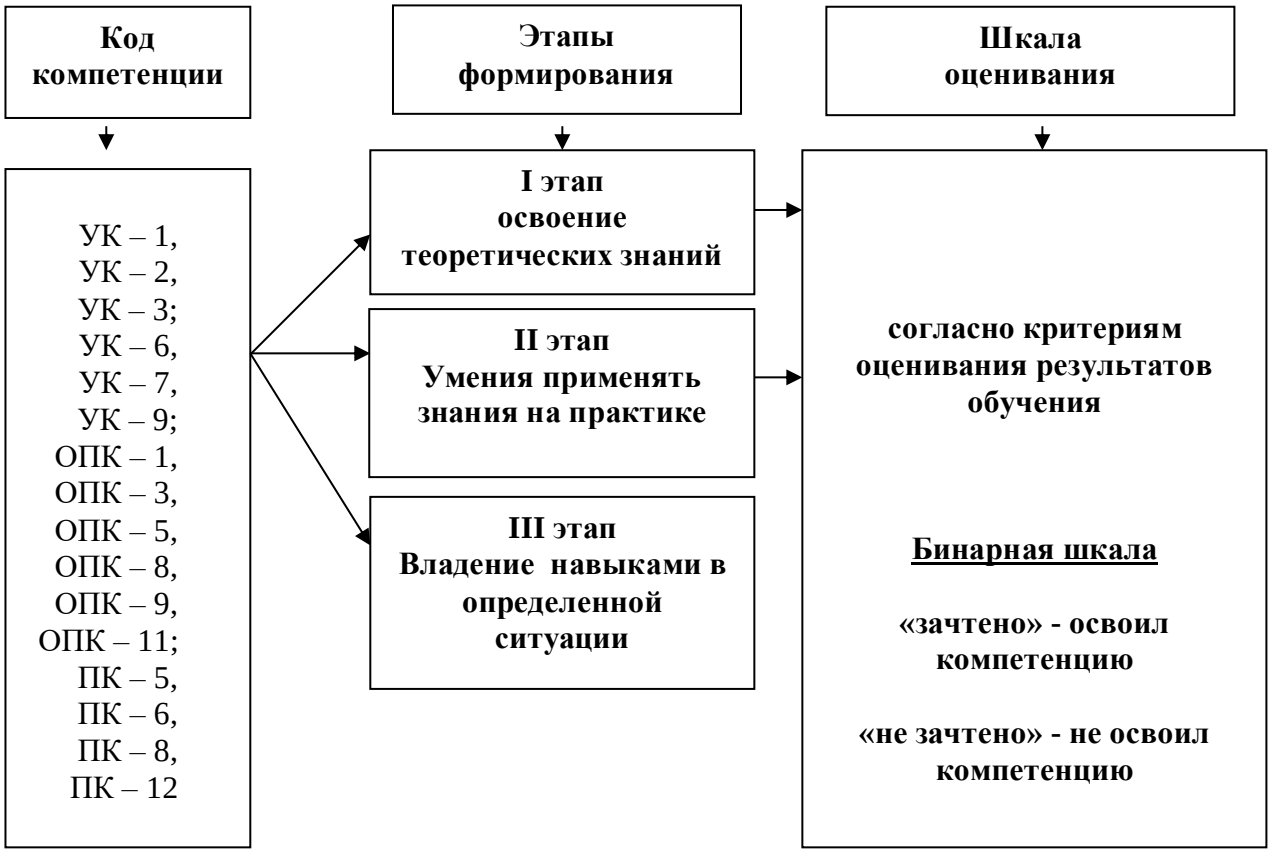
| | rehabilitation programs | medical care, clinical recommendations on issues of providing medical care, taking into account the standards of medical care<br>**ID PC-8.2.**<br>medical rehabilitation activities for the patient, in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on issues of providing medical care, taking into account the standards of medical care<br>**ID PC-8.3.**<br>Determines medical specialists to carry out rehabilitation measures for the patient, taking into account the diagnosis and in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on issues of providing medical care, taking into account the standards of medical care<br>**ID PC-8.4.**<br>Monitors and evaluates the effectiveness and safety of rehabilitation measures, taking into account the diagnosis and in accordance with current procedures for the provision of medical care, clinical recommendations (treatment protocols) on issues of providing medical care, taking into account the standards of medical care | Current procedures for the provision of medical care<br><br>Issues of providing medical care, taking into account the standards of medical care<br><br>Criteria for the selection of medical specialists to carry out rehabilitation measures for a patient<br><br>Criteria for assessing the effectiveness and safety of rehabilitation measures | standards of medical care<br><br>Determine medical specialists to carry out rehabilitation measures for the patient, taking into account the diagnosis and in accordance with the current procedures for the provision of medical care, clinical recommendations<br><br>Evaluate the effectiveness and safety of rehabilitation measures | accordance with the current procedures for the provision of medical care, clinical recommendations<br><br>Monitoring and evaluation of the effectiveness and safety of rehabilitation measures |
| | **PC-12.** | **ID PC-12.1 .** | Types of medical | Fill out documents for | Skills in preparing |

| | | | | | |
|---|---|---|---|---|---|
| | Ready to maintain medical records, including in electronic form | Fills out medical documentation, including in electronic form<br>**ID PC-12.2 .**<br>Works with personal data of patients and information constituting a medical secret<br>**PC ID - 12.3.**<br>Prepares documents when referring patients for hospitalization, consultation, spa treatment, medical and social examination | documentation<br><br>Types of documents when referring patients for hospitalization<br><br>Types of documents when referring patients for consultation, spa treatment, medical and social examination | referral for hospitalization, consultation, spa treatment, medical and social examination | documents when referring patients for hospitalization, consultation, spa treatment, medical and social examination |

**Modules of the discipline and the code of the competence being formed**

| № p /p | Section name | Code of the competence being formed |
|---|---|---|
| 1 | General physiotherapy | UK-1,2,3,6,7,9<br>OPK-1,5,8,9,11<br>PC-5,6,8,12 |
| 2 | Physical therapy | UK-1,2,3,6,7,9<br>OPK-1,5,8,9,11<br>PC-5,6,8,12 |
| 3 | Sports medicine | UK-1,2,3,6,7<br>OPK-1,3,5,9,11<br>PC-5,6,8,12 |

**1.7. Stages of competencies formation and description of assessment scales**




**1.8. Forms of training organization and types of control**

| Form of organization of students' training | Brief characteristic |
|---|---|
| Lectures | The lecture material contains key and most problematic issues of the discipline, which are most significant in the training of a specialist. |
| Practical classes | They are intended for the analysis (reinforcement) of theoretical principles and monitoring their assimilation with subsequent application of the acquired knowledge during the study of the topic. |
| Interactive forms of education | – solving situational problems and exercises with subsequent discussion,<br>– interactive survey; |

| | |
|---|---|
| | – performing creative tasks,<br>– small group method,<br>– discussions,<br>– online course of the discipline in the Moodle system ,<br>– testing in the Moodle system . |
| Participation in the department's research work, student circle and conferences | – preparation of oral presentations and poster reports for presentation at a student club or scientific conference;<br>– writing theses and abstracts on the chosen scientific field;<br>– preparation of a literature review using educational, scientific, reference literature and Internet sources. |
| **Types of control** | **Brief description** |
| Incoming inspection | Testing theoretical knowledge and practical skills developed by the social studies program in secondary (complete) general education institutions.<br>The entrance knowledge control includes:<br>– testing in the Moodle system (test of incoming knowledge control).<br>The results of the incoming inspection are systematized, analyzed and used by the teaching staff of the department to develop measures to improve and update the teaching methods of the discipline. |
| Current control | Current knowledge control includes:<br>– checking the solution of situational problems and exercises completed independently (extracurricular independent work);<br>– assessment of the assimilation of theoretical material (oral survey and computer testing );<br>– control over the technique of performing the experiment during practical classes and drawing up the protocol;<br>– testing in the Moodle system on all topics of the discipline (tests include questions of a theoretical and practical nature);<br>– individual assignments (practical and theoretical) for each topic of the discipline being studied. |
| Intermediate certification | The midterm assessment is represented by a test that students take at the end of the first semester.<br>The test includes the following stages:<br>– assessment of knowledge of theoretical material (oral survey and interview);<br>– testing in the Moodle system (interim assessment test);<br>– testing the acquisition of practical skills and abilities;<br>– solving situational problems and exercises on each topic of the discipline studied. |

## II . STRUCTURE AND CONTENT OF THE DISCIPLINE

### 2.1. Scope of the discipline and types of educational activities

| № p /p | Types of educational work | Total hours | Semester |
|---|---|---|---|
| | | | VII |
| 1 | Lectures | 20 | 20 |
| 2 | Practical classes | 52 | 52 |
| 3 | Independent work of students | 36 | 36 |
| | **Total labor intensity in hours** | **108** | **108** |
| | **Total workload in credit units** | **3** | **3** |

### 2.2. Thematic plan of lectures and their brief content

| № p /p | Topics and content of lectures | Codes of formed competencies | Labor - cost (hours) |
|---|---|---|---|
| 1. | **The subject and tasks of physiotherapy, theoretical foundations of the influence of physical factors on the body. Features of the use of physical methods for various diseases.**<br>The subject and tasks of physiotherapy. Broad prospects for increasing their number in connection with the rapid growth of theoretical applied physics, radio electronics, electrical engineering.<br>Physiological mechanisms of action of physical agents. The influence of physical factors on the main regulatory systems of the body.<br>Unconditioned and conditioned reflexes as a result of the impact of physical agents. The importance of the works of Zakharyin G.A. in the development of spa treatment methods. Historical outline of the development of domestic physiotherapy, its flourishing in recent years. The concept of local, general and focal reaction. Changes in the influence of physical methods of influence. | UK-1,6,7<br>OPK-1,9,11<br>PC-8.12 | 2 |
| 2. | **Balneotherapy. Classification of balneological resorts, mechanism of action of balneological factors on the body. General indications and contraindications for spa treatment.**<br>The concept of resorts and sanatoriums. Classification of resorts, types of sanatoriums. Lifestyle in a sanatorium and at a resort. Physiological effect of the main resort factors.<br>Physiological state of balneological factors (therapeutic mud, sulfate, radon, silicon, iodine-bromine , sodium chloride, carbonated mineral waters).<br>Drinking treatment with mineral waters. To dwell on general contraindications that exclude referral to resorts | At K-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | 2 |

| | | | |
|---|---|---|---|
| | with various diseases. | | |
| 3. | **Electrotherapy. Direct current, alternating current. Alternating current. Mechanism of endogenous heat formation. Features of UHF, UHF, SHF, ultrasound.**<br>Physiological methods in the clinic of internal diseases. Physiological mechanisms of action of physical agents. Indications and contraindications. Classification. Methods. The influence of physical factors on the main regulatory systems of the body. | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | 2 |
| 4. | **Magnetotherapy . Light therapy. Darsonvalization. Aerosol therapy . Hydrotherapy. Heat therapy.**<br>Physiological methods in the clinic of internal diseases. Physiological mechanisms of action of physical agents. Indications and contraindications. Classification. Methods. The influence of physical factors on the main regulatory systems of the body. | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | 2 |
| 5. | **General principles of medical rehabilitation as a section of clinical medicine. Therapeutic physical training as a method of physical rehabilitation. Methods of assessing the functional state of a person. Functional tests in exercise therapy**<br>The concept of medical rehabilitation, classification. Characteristics of exercise therapy as a treatment method. Systematization of means and forms of exercise therapy. Motor modes. Mechanisms of action and classification of physical exercises.<br>Definition of the functional state of a person, the essence of functional testing. Classification of functional tests. Methodology of conducting and interpretation of results. Control methods. Types of reactions to physical activity. Physiological curve. The concept of pathological and physiological reaction. | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | 2 |
| 6. | **Principles of physical rehabilitation of patients with cardiovascular pathology at the inpatient stage of treatment.**<br>Therapeutic physical training in the rehabilitation system of patients with coronary heart disease. The main hemodynamic factors. Substantiation of the mechanisms of action of physical exercises in myocardial infarction (MI). Phases and stages of patient rehabilitation. Classification of MI severity class. Characteristics of motor modes. Complications of MI. Timing of patient activation taking into account the MI severity class. Indications and contraindications for prescribing physical exercises in myocardial infarction. | At K-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | 2 |
| 7. | **Principles of physical rehabilitation of patients with cardiovascular pathology at the outpatient and polyclinic stage of treatment.**<br>Methods for determining the functional class of coronary | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | 2 |

| | | | |
|---|---|---|---|
| | heart disease. Classification. Organization of motor regimes of patients depending on the functional class. Methods for accounting for functional capabilities. Criteria for dosing physical activity during training of varying intensity. Contraindications to DFT. | | |
| 8. | **Principles of physical rehabilitation of patients with respiratory pathology.**<br>Pathogenetic mechanisms of FVD disorders in acute and chronic lung diseases. Clinical and physiological rationale for the use of physical exercises in respiratory pathology. Features of therapeutic gymnastics (TG) methods depending on the motor regime. TG in bronchial asthma, chronic obstructive pulmonary disease, pneumonia, simple bronchitis. Indications and contraindications for use. | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | 2 |
| 9. | **History of sports medicine, its objectives and content. Normative and legal regulation in the field of sports medicine. Medical support for sports. In-depth medical examination. Criteria for admission to sports.**<br>History of sports medicine, its objectives and content. Normative and legal regulation in the field of sports medicine. Medical support for sports. In-depth medical examination. Criteria for admission to sports. | UK-1,6,7<br>OPK-1,3,11<br>PC-5,6,8 | 2 |
| 10. | **Sports injuries. Epidemiology, principles of treatment, prevention of sports injuries. The impact of professional sports on the body of athletes.**<br>Of importance for the rehabilitation process are: the prevalence of injuries in relation to other relevant variables such as sport, age group, type of injury (traumatic or overuse ), time since onset of symptoms, injury during training or competition, anatomical region and severity of injury. | UK-1,6,7<br>OPK-1,3,11<br>PC-5,6,8,12 | 2 |
| | **Total hours** | | **20** |

## 2.3. Thematic plan of practical classes

| No. p /p | Name of the topics of practical classes | Contents of practical classes | Codes being formed competencies and indicators their achievements | Types of control | Labor- bone (hours) |
|---|---|---|---|---|---|
| 1. | Theoretical foundations of physiotherapy, physioprophylaxis , organization of physiotherapy service. Galvanization, medicinal electrophoresis. Pulsed currents of medium and low frequency. | Entrance control (checking theoretical knowledge and practical skills<br>**Theoretical part:** Subject and tasks of physiotherapy. Development of physiotherapeutic care in the Russian Federation. Physioprophylaxis . Physiological mechanisms of action of physical factors. Theoretical foundations of the influence of physical factors on the body. Basics of safety engineering.<br>Physiological action of direct current. Electrosleep. Transcranial Electroanalgesia . Electrical stimulation. Diadynamic therapy . Amplipulse therapy . Fluctuation . Interference therapy . Darsonvalization. Technique and methods of galvanization and electrophoresis. Factor dosage.<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | Solving problems and exercises, testing in the Moodle system . | 5.2 |
| 2. | High frequency alternating current. Light therapy. The use of heat and cold for therapeutic purposes. | **Theoretical part:** Ultra-high frequency electric field. Microwave therapy. Magnetotherapy . Physical characteristics. Mechanism of action. Technique and method of application. Indications and contraindications. Factor dosage.<br>Therapeutic use of infrared, visible, ultraviolet and laser radiation. Physical characteristics. Mechanism of action. Technique and methods of application. Determination of biodose in different age groups. Indications and contraindications. Factor dosage. | At K-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | Frontal survey,<br>solving situational problems and exercises, testing in the Moodle system . | 5.2 |

| | | | | | |
|---|---|---|---|---|---|
| | | Cryotherapy. Hypothermia. Paraffin, ozokerite, therapeutic mud. Mechanism of action. Technique and method of application. Indications and contraindications. Technique and method of application.<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | | | |
| 3. | Impact of mechanical factors. Treatment with modified air environment. Hydrotherapy. Balneotherapy. Spa treatment. | **Theoretical part:** Vibrotherapy. Ultrasound therapy. Mechanism of action. Technique and method of application. Indications and contraindications. Factor dosage.<br>Aeroion o - and aerosol therapy . The teachings of A.L. Chizhevsky . Properties of medicinal aerosols. Mechanism of action. Technique and methods of application. Indications and contraindications. Dosage of the factor.<br>Hydrotherapy. Baths, showers. Mechanism of action. Technique and methods of application. Indications and contraindications. Classification of resorts. Climatic, balneological, mud resorts. Therapeutic means of resorts. Heliotherapy, aerotherapy, climatotherapy, thalassotherapy, balneotherapy, mud therapy. General indications and contraindications for sending patients to a resort.<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | Frontal survey, solving situational problems and exercises, testing in the Moodle system .<br>Filling in procedural cards. Filling in a health resort card and book. | 5.2 |
| 4. | Therapeutic physical training as a method of physical rehabilitation. Fundamentals of the therapeutic physical training methodology. | **Theoretical part:** General principles of medical rehabilitation. Exercise therapy as a treatment method, characteristics of the method. Means and forms of exercise therapy. Movement modes at the stages of physical rehabilitation. Classification of physical exercises. Basic principles of exercise selection and their dosage. Mechanisms of action of physical exercises. Indications and contraindications for prescription.<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | Frontal survey, solving situational problems and exercises, testing in the Moodle system . | 5.2 |

| | | | | | |
|---|---|---|---|---|---|
| 5. | Principles of physical rehabilitation of patients with cardiovascular pathology | **Theoretical part:** Definition and classification of ischemic heart disease (IHD). Substantiation of the mechanisms of action of physical exercises in myocardial infarction (AMI). The main factors of hemodynamics. Phases and stages of patient rehabilitation. Classification of the severity class of AMI. The target setting and content of motor modes at the inpatient stage of rehabilitation. Complications of AMI. Timing of patient activation taking into account the severity class of AMI. Organization of motor modes of patients with IHD at the outpatient stage of treatment. Methods for determining the functional class (FC) of IHD. Bicycle ergometric test, methodology. Interpretation of results Criteria for dosing physical training, everyday loads and principles of labor rehabilitation in IHD depending on the FC. Indications and contraindications for prescribing physical exercises in IHD.<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | Frontal survey, solving situational problems and exercises, testing in the Moodle system | 5.2 |
| 6. | Principles of physical rehabilitation of patients with acute and chronic lung diseases. | **Theoretical part:** Pathogenetic mechanisms of FVD disorders in acute and chronic lung diseases. Clinical and physiological rationale for the use of physical exercises in respiratory pathology. Features of exercise therapy methods depending on the motor regime. Exercise therapy in bronchial asthma, chronic obstructive pulmonary disease, pneumonia, simple and purulent bronchitis. Indications and contraindications for use.<br>Checking the acquisition of competencies (testing, interviews on theoretical issues of the discipline or situational tasks)<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | UK-1,2,3,9<br>OPK-5,8,9,11<br>PC-5,6,8,12 | Frontal survey, solving situational problems and exercises, testing in the Moodle system | 5.2 |
| 7. | Organization of work of medical and sports center. Work of medical station of sports facility. | **Theoretical part:** Organization of work of medical and sports center. Work of medical center of sports facility.<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | At K-1,6,7<br>OPK- 1,3,11<br>PC-5,6,8,12 | Frontal survey, solution of situational tasks and exercises, | 5.2 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | testing in the Moodle system | |
| 8. | Examination methods in sports medicine | **Theoretical part:** Methods of examination in sports medicine<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | UK-1,6,7<br>OPK-1,3,11<br>PC-5,6,8,12 | Frontal survey, solving situational problems and exercises, testing in the Moodle system | 5.2 |
| 9. | Sports Team Doctor: Qualification Requirements and Job Duties. Packing a Sports Doctor's Suitcase | **Theoretical part:** Sports team doctor: qualification requirements and job responsibilities. Packing a sports doctor's suitcase<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing | UK-1,6,7<br>OPK-1,3,11<br>PC-5,6,8,12 | Frontal survey, solving situational problems and exercises, testing in the Moodle system | 5.2 |
| 10. | Post-exercise recovery measures for athletes. | **Theoretical part:** Post-load recovery measures for athletes.<br>**Practical part** : drawing up diagrams, designing a workbook. Solving situational problems, testing<br>protection of the educational medical history ( filling out the patient card, drawing up a rehabilitation program ). | UK-1,6,7<br>OPK-1,3,11<br>PC-5,6,8,12 | Frontal survey, solving situational problems and exercises, testing in the Moodle system | 5.2 |
| **Total hours** | | | | | 52 |

### 2.4. Interactive forms of learning

In order to activate students' cognitive activity, interactive teaching methods (interactive surveys, computer simulations, discussions, analysis of educational medical history, etc.) and participation in educational and research work of the department are widely used in practical classes.

| No. p /p | Topic of the practical lesson | Labor intensity in hours | Interactive form of learning | Labor intensity in hours, in % of the lesson |
|---|---|---|---|---|
| 1. | Theoretical foundations of physiotherapy, physioprophylaxis, organization of physiotherapy service. Galvanization, medicinal electrophoresis. Pulsed currents of medium and low frequency. | 5.2 | Interactive survey | 35 minutes (0.8 hours) / 14.9% |
| 2. | High frequency alternating current. Light therapy. The use of heat and cold for therapeutic purposes. | 5.2 | "case studies" situational tasks | 35 minutes (0.8 hours) / 14.9% |
| 3. | Impact of mechanical factors. Treatment with modified air environment. Hydrotherapy. Balneotherapy. Resort medicine | 5.2 | Brainstorming | 35 minutes (0.8 hours) / 14.9% |
| 4. | Therapeutic physical training as a method of physical rehabilitation. Fundamentals of the therapeutic physical training method | 5.2 | Method of modeling a specific practical situation with a discussion of the algorithm for prescribing physiotherapy | 35 minutes (0.8 hours) / 14.9% |
| 5. | Principles of physical rehabilitation of patients with cardiovascular pathology . | 5.2 | Round table | 35 minutes (0.8 hours) / 14.9% |
| 6. | Principles of physical rehabilitation of patients with acute and chronic lung diseases. | 5.2 | Discussion<br>Clinical analysis with discussion of the algorithm for prescribing exercise therapy | 35 minutes (0.8 hours) / 14.9% |
| 7. | Principles of physical rehabilitation of patients with myocardial infarction at the outpatient-polyclinic stage of treatment. | 5.2 | Method of modeling a specific practical situation | 35 minutes (0.8 hours) / 14.9% |
| 8. | Principles of physical rehabilitation of patients with respiratory | 5.2 | Simulation exercises | 35 minutes (0.8 hours) / 14.9% |

| | | | | |
|---|---|---|---|---|
| | pathology. | | | |
| 9. | History of sports medicine, its objectives and content. Normative and legal regulation in the field of sports medicine. Medical support for sports. In-depth medical examination. Criteria for admission to sports. | 5.2 | "Defective task", a clinical situation with pre-planned errors in tactics | 35 minutes (0.8 hours) / 14.9% |
| 10. | Sports injuries. Epidemiology, principles of treatment, prevention of sports injuries. The impact of professional sports on the body of athletes. | 5.2 | "case studies" situational tasks | 35 minutes (0.8 hours) / 14.9% |

### 2.5 Criteria for assessing students' knowledge

The assessment of learning outcomes is carried out in accordance with the “Regulations on the system for assessing the learning outcomes of students of the Federal State Budgetary Educational Institution of Higher Education Amur State Medical Academy of the Ministry of Health of Russia.

The basis for determining the level of knowledge, skills, and abilities are the assessment criteria - completeness and correctness:

- correct, precise answer;
- correct but incomplete or imprecise answer
- incorrect answer; no answer.

When assigning marks, the classification of errors and their quality are taken into account:

- gross errors;
- similar errors;
- minor errors; shortcomings.

The success of students in mastering the topics of the discipline " Medical Rehabilitation " is determined by the quality of mastering knowledge, skills and practical abilities; the assessment is given on a five-point scale: "5" - excellent, "4" - good, "3" - satisfactory, "2" - unsatisfactory.

**Evaluation criteria**

| Quality of development | Mark on a 5-point scale |
|---|---|
| 90 - 100% | "5" |
| 80 - 89% | "4" |
| 70 - 79% | "3" |
| less than 70% | "2" |

**Incoming inspection**

Conducted at the first lesson, includes: solving problems and exercises; testing in the Moodle system https://educ-amursma.ru/mod/quiz/view.php?id=11142

The test control includes 100 questions on the courses history, social and humanitarian foundations of medicine, and economics studied in the first year.

**Current control**

Current control includes initial and final control of knowledge.

Initial control **is** carried out by the teacher at the beginning of each lesson in the form of a frontal survey, solving problems and exercises.

Final control – includes control over the technique of performing the experiment and drawing up the protocol , written work on options, testing in the Moodle system https://educ-amursma.ru/course/view.php?id=282

The final grade during the current knowledge assessment is given on the day of the lesson, as the arithmetic mean result for all types of activities provided for in the given lesson of the discipline's work program.

**Criteria for assessing the oral response**

- ✓ **"5" -** is earned by a student who has demonstrated a comprehensive, systematic and deep knowledge of the curriculum material, the ability to freely complete tasks provided by the program, has mastered the main and is familiar with the additional literature recommended by the program. Awarded for the depth and completeness of mastery of the content of the educational material, in which the student can easily navigate, for the ability to combine theoretical questions with practical ones , express and justify their judgments, correctly and logically present the answer; allows up to 10% of erroneous answers during testing.
- ✓ **"4" -** is earned by a student who has demonstrated full knowledge of the educational program material, successfully completes the tasks provided in the program, and has mastered the basic literature recommended in the program. The student has fully mastered the educational material, is oriented in it, and correctly states the answer, but the content and form have some inaccuracies; when testing, allows up to 20% of erroneous answers.
- ✓ **"3"** - is given to students who made mistakes in their answers during the exam and when completing exam tasks, but who have the necessary knowledge to correct them under the guidance of a teacher ; during testing, up to 30% of erroneous answers are allowed.
- ✓ **"2"** is given to a student who has discovered gaps in their knowledge of the basic educational program material, has made fundamental mistakes in completing the tasks provided for by the program , and has made more than 30% of incorrect answers during testing.

**Assessment criteria for the practical part**

- ✓ **"5" -** the student has fully mastered the practical skills and abilities provided for by the course work program, correctly selects the treatment method. All parameters, localization and time are selected correctly or the student makes inaccuracies in prescribing treatment, with the correct choice of method and parameters; for the performance of practical skills, the student is given a grade in case of correct implementation of the procedure technique for a patient treated in the physiotherapy, therapy departments or the technique is performed with errors, with the correct choice of method parameters; the card is filled in according to the requirements, all parameters, localization and time are selected correctly. A full description of the rationale for using the method for this patient is given;
- ✓ **"4" -** the student has fully mastered the practical skills and abilities provided for by the course work program, but allows for some inaccuracies. The treatment method has been chosen correctly, but the parameters of the applied method do not correspond to the given patient; the technique has been performed correctly, but the parameters for the given patient have not been determined; the student allows for inaccuracies in the appointment of the procedure, with the correct choice of method and parameters. The description of the rationale for using the

procedure contains inaccuracies, incomplete or the treatment method is chosen correctly, but the parameters do not correspond to the given patient. The rationale for use is not complete;

- ✓ **"3" -** the student has only some practical skills and abilities. There is no description of the rationale for using the procedure or the treatment method is chosen correctly, but the parameters do not correspond to the given patient. The rationale for use is not complete;
- ✓ **"2"** - the treatment method was chosen incorrectly; the technique was performed incorrectly; the student makes gross errors in prescribing the procedure, choosing the method and parameters.

**Evaluation criteria for the study medical history (individual medical rehabilitation program)**

- ✓ **"5"** - registration of the medical history according to the requirements, is given in the case of correct implementation of the procedure methodology and correct filling out of the appointment card for the patient and drawing up a rehabilitation program for the patient being treated in the physiotherapy department (office).
- ✓ **"4" -** in the educational medical history, the student makes inaccuracies in the choice of methodology and filling out the appointment card for the patient and drawing up a rehabilitation program for the patient being treated in the physiotherapy department (office).
- ✓ **"3" -** the medical history is filled with errors, written in illegible handwriting, is uninformative, there are inaccuracies in the choice of the procedure method and filling out the appointment card for the patient and drawing up a rehabilitation program for the patient being treated in the physiotherapy department (office).
- ✓ **"2" -** the medical history is filled out with gross errors, written in illegible handwriting, is uninformative, there are gross errors in the execution of the procedure, lack of knowledge of the procedure and incorrect completion of the patient's prescription card and the preparation of a rehabilitation program for a patient being treated in the physiotherapy department (office).

**Criteria for assessing independent extracurricular work:**

- ✓ the level of student mastery of the educational material;
- ✓ the completeness and depth of general educational concepts, knowledge and skills on the topic being studied, to which this independent work relates;
- ✓ development of universal and general professional competencies (ability to apply theoretical knowledge in practice).
- ✓ the problems were solved correctly, the exercises were completed, and the test assignments were answered accurately – “passed”.
- ✓ Problems were not solved correctly, exercises were not completed correctly, test questions were not answered accurately – “failed”.

**Working off disciplinary debts**

If a student misses a class for a valid reason, he/she has the right to make it up and receive the maximum grade provided for by the course work program for that class. A valid reason must be documented.

If a student misses a class for an unjustified reason or receives a "2" mark for all activities in the class, he/she is required to make it up. In this case, the mark received for all activities is multiplied by 0.8.

If a student is excused from a class at the request of the dean's office (participation in sports, cultural and other events), then he is given a grade of "5" for this class, provided that he submits a report on the completion of mandatory extracurricular independent work on the topic of the missed class.

**Assessment criteria for midterm assessment**

Midterm assessment (credit) is designed to assess the degree of achievement of planned learning outcomes upon completion of the study of a discipline and allows for an assessment of the level and quality of its mastery by students .

The students' success in mastering the discipline is assessed on a 5-point scale: "5" – excellent, "4" – good, "3" – satisfactory, "2" – unsatisfactory.

- ✓ **"Excellent" -** for the depth and completeness of mastery of the content of the educational material, in which the student easily navigates, for the ability to combine theoretical questions with practical ones , express and justify their judgments, correctly and logically present the answer; when testing, allows up to 10% of erroneous answers. Practical skills and abilities provided for by the working program of the discipline are fully mastered.
- ✓ **"Good" -** the student has fully mastered the educational material, is oriented in it, correctly states the answer, but the content and form have some inaccuracies; during testing allows up to 20% of erroneous answers. Completely practical skills and abilities provided by the working program of the discipline, but allows some inaccuracies
- ✓ **"Satisfactory"** - the student has mastered the knowledge and understanding of the main provisions of the educational material, but presents it incompletely, inconsistently, does not know how to express and justify his/her judgments; during testing, allows up to 30% of erroneous answers. Has only some practical skills and abilities.
- ✓ **"Unsatisfactory"** - the student has fragmented and unsystematic knowledge of the educational material, is unable to distinguish between the main and secondary, makes mistakes in defining concepts, distorts their meaning, presents the material in a disorderly and uncertain manner, and makes more than 30% of erroneous answers during testing. Performs practical skills and abilities with gross errors.

A student can claim to receive an "excellent" grade automatically if he/she has won a prize in disciplinary or interdisciplinary Olympiads (university, regional) and has an average grade for the current academic performance of at least 4.8 points **.** A student can refuse the "automatic" grade and take the test together with the group on a general basis.

**Interim certification is carried out in 3 stages:**

1. Test control in the "Moodl e " system. https://educ-amursma.ru/mod/quiz/view.php?id=11141
2. Completion of the practical part of the discipline in full: involves attending all practical classes and completing assignments. Based on the assessments of the current control of knowledge, skills, and abilities in practical classes, the average score of current academic performance is calculated, which is recorded in the educational (electronic) journal. The average score of the current knowledge control is taken into account during the midterm assessment.
3. Delivery of practical skills (control of the level of development of competencies). Includes 10 options, containing 10 practical questions each.

**Assessment criteria for midterm assessment**

| **Stages** | **Mark out of 5 point scale** | **Binary scale** |
|---|---|---|
| Test control in the Moodle system | 3-5 | **passed** |
| Complete completion of the practical part of the course | 3-5 | |

| | | |
|---|---|---|
| Delivery of practical skills (control of the formation of competencies) | 3-5 | |
| Test control in the Moodle system | 2 | **not credited** |
| Complete completion of the practical part of the course | 2 | |
| Delivery of practical skills (control of the formation of competencies) | 2 | |

**2.6. Independent work of students: in-class and out-of-class.**

The organization of independent classroom work of students is carried out with the help of methodological instructions for students, which contain educational goals, a list of the main theoretical questions for study, a list of practical work and the methodology for conducting it, instructions for the presentation of the results obtained, their discussion and conclusions, assignments for self-control with standard answers, a list of recommended literature.

From 1/4 to 1/2 of the practical lesson time is allocated for independent work of students: conducting research, recording results, discussing them, formulating conclusions, completing individual assignments. The preparatory stage, or the formation of an approximate basis for actions, begins for students outside of class time when preparing for the practical lesson, and ends in class.

All subsequent stages are carried out in class. The stage of materialized actions ( solving problems using an algorithm or without an algorithm, with an unknown answer in advance) is carried out independently. The teacher, if necessary, provides consultation, provides assistance and simultaneously monitors the quality of students' knowledge and their ability to apply existing knowledge to solve assigned problems.

| | **Topic of the practical lesson** | **Time for student preparation for the lesson** | **Form of extracurricular independent work of a student** | |
|---|---|---|---|---|
| | | | **Mandatory and the same for all students** | **At the student's choice (abstract on topics)** |
| 1 | Theoretical foundations of physiotherapy, physioprophylaxis, organization of physiotherapy service. Galvanization, medicinal electrophoresis. Pulsed currents of medium and low frequency. | 3 | Physioprophylaxis of viral infections. Tablet. Writing a physiotherapy prescription on the topic. Writing a physiotherapy prescription on the topic. Filling out a procedure card. | Creating a computer presentation, spreadsheet, tablet or abstract review |
| 2 | High frequency alternating current. Light therapy. The use | 3 | Effect of EMF on the body. Table. Writing a physiotherapy prescription on the topic. Writing a physiotherapy prescription on the topic. Filling | Creating a computer presentation, spreadsheet, tablet or abstract review |

| | | | | |
|---|---|---|---|---|
| | of heat and cold for therapeutic purposes. | | out a procedure card. | |
| 3 | Impact of mechanical factors. Treatment with altered air environment. Hydrotherapy. Balneotherapy. Resort medicine | 3 | Rehabilitation programs for various diseases. Presentation. Writing a physiotherapy prescription on the topic. Writing a physiotherapy prescription on the topic. Filling out a procedure card. | Creating a computer presentation, spreadsheet, tablet or abstract review |
| 4 | Therapeutic physical training as a method of physical rehabilitation. Fundamentals of the therapeutic physical training method | 3 | Review of basic and additional literature. Drawing up a protocol of medical and pedagogical observations, drawing up a physiological curve. Writing recommendations (health prescription). Determining a medical group for physical education classes. Assigning physical training programs. Drawing up a medical report and a “Health” prescription. | Creating a computer presentation, spreadsheet, tablet or abstract review |
| 5 | Principles of physical rehabilitation of patients with coronary heart disease. | 3 | Review of basic and additional literature. Tablet. Filling out a resort card and book. Filling out a resort card and book. Writing a physiotherapy prescription on the topic. Filling out a procedure card. | Creating a computer presentation, spreadsheet, tablet or abstract review |
| 6 | Principles of physical rehabilitation of patients with acute and chronic lung diseases. | 3 | Review of basic and additional literature. Determining the volume of the patient's motor activity during the day. Filling out reporting documentation (protocols for determining the functional state of the patient's body). Filling out protocols for the VNP. | Computer presentation, tablet, table |
| 7 | Principles of physical rehabilitation of patients with myocardial infarction at the outpatient-polyclinic stage of treatment. | 3 | Review of basic and additional literature. Determining the volume of the patient's motor activity during the day. Filling out reporting documentation (protocols for determining the functional state of the body). Filling out protocols for the virtual physical examination. | Computer presentation, tablet, table |

| | | | | |
|---|---|---|---|---|
| 8 | Principles of physical rehabilitation of patients with respiratory pathology. | 3 | Review of basic and additional literature. Determining the volume of the patient's motor activity during the day. Filling out reporting documentation (protocols for determining the functional state of the body). Filling out protocols for the VNP | Computer presentation, tablet, table |
| 9 | History of sports medicine, its objectives and content. Normative and legal regulation in the field of sports medicine. Medical support for sports. In-depth medical examination. Criteria for admission to sports. | 3 | Review of basic and additional literature Determining the volume of motor activity of the patient during the day. Filling out reporting documentation (protocols for determining the functional state of the body). Filling out protocols of the HPN | Computer presentation, tablet, table |
| 10 | Sports injuries. Epidemiology, principles of treatment, prevention of sports injuries. The impact of professional sports on the body of athletes. | 3 | Review of basic and additional literature. Drawing up protocols for determining the functional state of the patient. Determining the volume of motor activity during the day. | Computer presentation, tablet, table |
| | **Labor intensity in hours** | **30 hours** | **30 hours** | **6 hours** |
| | **Total labor intensity in hours** | | **36 hours** | |

### 2.7. Research (project) work

Research (project) work students (NIRS) is a mandatory section of the discipline and is aimed at the comprehensive formation of universal and general professional competencies of students. NIRS involves the study of specialized literature and other scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge, participation in scientific research, etc. The topics of NIRS are determined by students independently or in consultation with the teacher.

**List of recommended research paper topics:**

- The influence of EMF on the human body.
- Use of mineral waters for gastrointestinal diseases.

- Ontogenesis of the musculoskeletal system .
- Principles of physical rehabilitation in patients with metabolic syndrome .

**Criteria for assessing students' research (project) work:**

- the material on the results of the research in the report is presented in detail, the specialized literature is well-developed, scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge is studied - "passed".
- the material on the results of the research in the report is not presented accurately enough, the special literature is poorly studied, the scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge is not studied - "failed".

## III . EDUCATIONAL, METHODOLOGICAL, MATERIAL, TECHNICAL AND INFORMATIONAL SUPPORT OF THE DISCIPLINE

### 3.1. Primary literature


1 Ponomarenko, G. N. Medical rehabilitation / G. N. Ponomarenko. - 2nd ed., revised and enlarged. - Moscow: GEOTAR-Media, 2021. - 368 p. - ISBN 978-5-9704-5945-4. - Text: electronic (date accessed: 05/04/2021). - Access mode: http://www.studmedlib.ru/book/ISBN9785970459454.html

2 Medical rehabilitation / Epifanova A. V. - Moscow: GEOTAR-Media, 2020. - 736 p. - ISBN 978-5-9704-4843-4. - Text: electronic (access date: 05/04/2021). - http://www.studmedlib.ru/book/ISBN9785970448434.html


### 3.2. Further reading


1 Epifanov, V. A. Medical and social rehabilitation of patients after a stroke / Epifanov V. A., Epifanov A. V., Glazkova I. I. [and others]. - Moscow: GEOTAR-Media, 2021. - 352 p. - ISBN 978-5-9704-6033-7. - Text: electronic (access date: 05/04/2021). - http://www.studmedlib.ru/book/ISBN9785970460337.html

2 Ponomarenko, G. N. Medical rehabilitation. Guide to practical classes: study guide / edited by G. N. Ponomarenko. - Moscow: GEOTAR-Media, 2021. - 240 p. - ISBN 978-5-9704-6023-8. - Text: electronic (date accessed: 05/04/2021). - http://www.studmedlib.ru/book/ISBN9785970460238.html

3 Epifanov, V. A. Medical and social rehabilitation after infectious diseases / V. A. Epifanov, N. D. Yushchuk, A. V. Epifanov [and others]. - Moscow: GEOTAR-Media, 2020. - 560 p. - ISBN 978-5-9704-5915-7. - Text: electronic (access date: 05/04/2021). - http://www.studmedlib.ru/book/ISBN9785970459157.html


### 3.3 Educational and methodological support of the discipline prepared by the staff of the department

**Electronic and digital technologies:**

1. Online course on the subject "Medical Rehabilitation" in the EIS FGBOU VO Amur State Medical Academy ( https://educ-amursma.ru/course/view.php?id=282 ).

Characteristics of modules in electronic information and educational course

| Educational | Controlling |
|---|---|
| Theoretical (lecture) material, scientific and educational films | Methodological recommendations for students on independent extracurricular work. |
| Methodological recommendations for students for practical classes. Methodological recommendations for solving problems and exercises on the topics of the discipline. | List of recommended topics for abstracts and guidelines for abstract design. |

### 3.4. Equipment used for the educational process

| Item No. | Name | Quantity |
|---|---|---|
| | **Workshops No. 1,2,3** | |
| 1 | Tables | 16 |
| 2 | Tablets | 4 |

| | | |
|---|---|---|
| 3 | Albums | 4 |
| 4 | Tools | 4 |
| 5 | Teacher's desk | 3 |
| 6 | Desks for students | 15 |
| 7 | Couch | 1 |
| | **Educational and methodological room** | |
| 8 | Computer | 1 |
| 9 | Printer | 1 |

**3.5. Professional databases, information and reference systems, electronic educational resources.**

| Resource name | Resource Description | Access | Resource address |
|---|---|---|---|
| **Electronic library systems** | | | |
| "Student Consultant" Electronic library of the medical university. | For students and teachers of medical and pharmaceutical universities. Provides access to electronic versions of textbooks, teaching aids and periodicals. | library, individual access | http: //www .studmedlib.ru/ |
| "Doctor's Consultant" Electronic Medical Library. | The materials posted in the library have been developed by leading Russian specialists based on modern scientific knowledge (evidence-based medicine). The information has been prepared taking into account the position of the scientific and practical medical society (world, European and Russian) in the relevant specialty. All materials have undergone mandatory independent review. | library, individual access | http://www.rosmedlib.ru /cgi-bin/mb4x |
| PubMed | Free search system in the largest medical bibliographic database MedLine. Documents medical and biological articles from specialized literature, and also provides links to full-text articles. | library, free access | http: //www.ncbi.nlm.nih. gov/pubmed/ |
| Oxford Medicine Online. | A collection of Oxford medical publications, bringing together over 350 titles into a single, cross-searchable resource. Publications include The Oxford Handbook of Clinical Medicine and The Oxford Textbook of Medicine , the electronic versions of which are constantly updated. | library, free access | http://www.oxfordmedicine.com |

| | | | |
|---|---|---|---|
| Human Biology Knowledge Base | Reference information on physiology , cell biology , genetics , biochemistry , immunology , pathology . (Resource of the Institute of Molecular Genetics of the Russian Academy of Sciences .) | library, free access | http://humbio.ru/ |
| Medical online library | Free reference books, encyclopedias, books, monographs, abstracts, English-language literature, tests. | library, free access | http://med-lib.ru/ |
| **Information systems** | | | |
| Russian Medical Association | Professional Internet resource. Objective: to facilitate the implementation of effective professional activities of medical personnel. Contains the charter, personnel, structure, rules of entry, information about the Russian Medical Union. | library, free access | http://www.rmass.ru/ |
| Web-medicine | The site presents a catalog of professional medical resources, including links to the most authoritative subject sites, journals, societies, as well as useful documents and programs. The site is intended for doctors, students, employees of medical universities and scientific institutions. | library, free access | http: //webmed.irkutsk.ru/ |
| **Databases** | | | |
| World Health Organization | The site contains news, statistics on countries that are members of the World Health Organization, fact sheets, reports, WHO publications and much more. | library, free access | http://www.who.int/ru/ |
| Ministry of Science and Higher Education of the Russian Federation | The website of the Ministry of Science and Higher Education of the Russian Federation contains news, newsletters, reports, publications and more. | library, free access | http://www.minobrnauki.gov.ru |
| Ministry of Education of the Russian Federation. | The website of the Ministry of Education of the Russian Federation contains news, newsletters, reports, publications and much more. | library, free access | https://edu.gov.ru/ |

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|---|---|---|---|
| Federal portal "Russian education" | A single window for access to educational resources. This portal provides access to textbooks on all branches of medicine and health care. | library, free access | http: //www .edu.ru/ http://window.edu.ru/catalog/?p rubr=2.2.81.1 |
| **Bibliographic databases** | | | |
| BD "Russian Medicine" | It is created in the Central Scientific and Methodological Library and covers the entire collection, starting from 1988. The database contains bibliographic descriptions of articles from domestic journals and collections, dissertations and their abstracts, as well as domestic and foreign books, collections of institute proceedings, conference materials, etc. Thematically, the database covers all areas of medicine and related areas of biology, biophysics, biochemistry, psychology, etc. | library, free access | http://www.scsml.rssi.ru/ |
| eLIBRARY.RU | Russian information portal in the field of science, technology, medicine and education, containing abstracts and full texts of more than 13 million scientific articles and publications. The eLIBRARY.RU platform provides electronic versions of more than 2,000 Russian scientific and technical journals, including more than 1,000 open access journals. | library, free access | http://elibrary.ru/defaultx.asp |
| Portal Electronic library of dissertations | Currently, the Electronic Library of Dissertations of the Russian State Library contains more than 919,000 full texts of dissertations and abstracts. | library, free access | http://diss.rsl.ru/?menu=disscatalog/ |
| Medline.ru | Medical and biological portal for specialists. Biomedical journal. Last updated February 7, 2021. | library, free access | http://www.medline.ru |

### 3.6 . Licensed and freely distributed software used in the educational process.

| **I. Commercial software products** | | |
|---|---|---|
| 1. | Operating system MS Windows 7 Pro | License number 48381779 |
| 2. | Operating system MS Windows 10 Pro, MS Office | AGREEMENT No. 142 A dated December 25, 2019 |

| | | |
|---|---|---|
| 3. | MS Office | License number: 43234783, 67810502, 67580703, 64399692, 62795141, 61350919 |
| 4. | Kaspersky Endpoint Security for Business Advanced | Agreement No. 977/20 dated 12/24/2020 |
| 5. | 1C: PROF University | LICENSE AGREEMENT No. 2191 dated 15.10.2020 |
| 6. | 1C: PROF Library | LICENSE AGREEMENT No. 2281 dated 11.11.2020 |
| **II. Freely distributed software** | | |
| 1. | Google Chrome | Freely distributed<br>Distribution conditions:<br>https://play.google.com/about/play-terms/index.html |
| 2. | Yandex Browser | Freely distributed<br>License Agreement for the Use of Yandex Browser Programs<br>https://yandex.ru/legal/browser_agreement/ |
| 3. | Dr.Web CureIt! | Freely distributed<br>License Agreement:<br>https://st.drweb.com/static/new-www/files/license_CureIt_ru.pdf |
| 4. | OpenOffice | Freely distributed<br>License:<br>http://www.gnu.org/copyleft/lesser.html |
| 5. | LibreOffice | Freely distributed<br>License:<br>https://ru.libreoffice.org/about-us/license/ |

### 3.7. Resources of the information and telecommunications network "Internet"

- Amur State Medical Academy Library. Access mode: https://amursma.ru/obuchenie/biblioteki/biblioteka-amurskoy-gma/
- Electronic library system "Student consultant". Access mode: http://www.studmedlib.ru/cgi-bin/mb4x
- Electronic library of medical literature. Access mode: https://www.books-up.ru/ru/entrance/97977feab00ecfbf9e15ca660ec129c0/
- Journal Attending physician https :// www . lvra c h . ru
- Consul Medicum https://www.face b ook.com/Conmedru/
- Federal Electronic Medical Library of the Ministry of Health of the Russian Federation http://w w w.femb.ru

- Website of the Russian Respiratory Society http://sp u lmo.ru
- Website of the Russian Society of Cardiology http://scardio.ru
- Clinical guidelines of the Russian Gastroenterological Association http://www.gastro.ru/index.php/kliniche s kie-rekomendatsii-rga/22-lechenie-khronicheskogo-zapora-u-vzroslykh-patsientov-2017
- Websites of the Russian Ministry of Health:
- Standards of specialized medical care https://www.rosminzdrav.ru/ministry/6 1 /22/stranitsa-979/stranitsa-983/2-standarty-spetsializirovannoy-meditsinskoy-pomoschi
- Procedures for providing medical care to the population of the Russian Federation https://www.rosminzdrav.ru/ministry/61/4/s t ranitsa-857/poryadki-okazaniya-meditsinskoy-pomoschi-naseleniyu-rossiyskoy-federatsii
- Clinical guidelines http://cr.ros m i n zdrav.ru / #!/rubricator/adults

## IV . ASSESSMENT TOOLS FUND

### 4.1. Current test control (input, initial, output), final.

#### 4.1.1 Examples of entrance control test tasks (with standard answers)

Test assignments are located in the Moodle system.
Access mode: https://educ-amursma.ru/mod/quiz/view.php?id=11142
Total number of tests – 100.

(choose one correct answer)

1. THE GLEN OF THE SCULATOR FOR ARTICULATION WITH THE HUMERUS IS LOCATED
1) on the acromion
2) on the upper corner of the shoulder blade
3) on the coracoid process
4) on the lateral angle of the scapula

2. LIGAMENTS CONNECTING THE VERTEBRAL ARCHES
1) yellow ligaments
2) anterior longitudinal ligament
3) posterior longitudinal ligament
4) nuchal ligament

3. LIGAMENTS THAT STRENGTHEN THE SHOULDER JOINT
1) coracoacromial ligament
2) coracoclavicular ligament
3) superior transverse ligament of the scapula
4) coracoid - shoulder ligament

Answer standards: 1-4; 2-1; 3-4.

#### 4.1.2 Examples of initial control tasks (with standard answers)

- the nature of the occurrence of high frequency alternating current,
- the nature of the origin of light,
- distribution of energy in the solar spectrum, units of measurement,
- the nature of heat and cold,
- change in the properties of living tissues under the influence of physical factors

#### 4.1.3 Examples of test tasks for final control (with standard answers)

Test assignments are located in the Moodle system.
Access mode: https://educ-amursma.ru/mod/quiz/view.php?id=11141
Total number of tests – 100.

1. DURING ELECTROSLEEP THERAPY, THE INHIBITION PHASE IS CHARACTERIZED BY:
1) activation of cortical processes

2) normalization of blood pressure
3) tachycardia
4) a decrease in the intensity of rhythms of bioelectrical activity of the brain

2. PREFORMED ENVIRONMENTAL FACTORS INCLUDE:
1) water
2) peloids
3) landscape
4) magnetic fields

3. THE BEST CONDUCTORS OF CURRENT ARE:
1) lymph
2) tooth enamel
3) bone
4) muscles

Answer standards: 1-4; 2-4; 3-1.

**4.1.4 Examples of test tasks for the final assessment (with standard answers)**

Test assignments are located in the Moodle system.
Access mode: https://educ-amursma.ru/mod/quiz/view.php?id=11141
Total number of tests – 200.

1. CONTRAINDICATIONS FOR GALVANIZATION ARE:
1) trauma and diseases of the periodic nervous system
2) neurasthenia and neuroses
3) chronic inflammatory processes
4) acute purulent processes

2. THE REDUCTION OR COMPLETE ABSENCE OF SIDE EFFECTS DURING DRUG ELECTROPHORESIS IS DUE TO:
1) shallow penetration of drugs
2) slow elimination of drugs
3) direct current prevents side effects
4) medicinal substances are in an inactive state

3. THE MAIN INSPIRATORY MUSCLES INCLUDE:
1) Thoracoabdominal diaphragm
2) Muscles of the abdominal wall
3) Muscles of the glottis
4) External intercostal muscles

Answer standards: 1-4; 2-3; 3-1.

**4.2 Situational tasks, exercises**

**Example #1.** Patient H., 14 years old. Diagnosis: acute bronchitis in the stage of fading exacerbation. 8th day from the onset of the disease. Complaints: weakness, rare cough with a small amount of serous sputum, auscultation reveals isolated dry wheezing in the lungs. The goal of physiotherapy: anti-inflammatory, desensitizing, bronchospastic effect. Prescribe the

necessary technique and write out the procedure.

**Answer:** Purpose: 5% calcium electrophoresis. The electrode with the area 250 смunder the hydrophilic pad of which sheets of filter paper moistened with a calcium chloride solution are placed, is located in the interscapular region and connected to the anode. The second electrode of the same size is placed transversely on the anterior surface of the chest and connected to the cathode. Current strength 5-10 mA, 20 min, daily, No. 10-15.

**Example No. 2.** Patient N., 25 years old. Is being treated in the neurological department with the diagnosis: mixed-type neurocirculatory dystonia, moderate severity, exacerbation. The patient's condition is satisfactory. She had not previously done physical exercise.

1. Assign a motor mode
2. Contents of the regime.

**Answer:**

1. Ward regime
2. Formation of compensations, tonic effect. Active movements of medium and large muscle groups, initial position - lying and sitting, diaphragmatic breathing, average tempo, active movements in medium muscle groups, ratio of respiratory and general developmental 1/2.

**Example No. 3.** Patient N., 4 years old, Diagnosis: chronic tonsillitis. Prescribe the necessary method and write out the procedure prescription.

**Answer:** UF irradiation in the treatment of chronic tonsillitis. The patient is in a sitting position on a chair. A pre-sterilized removable tube with an oblique cut is installed on the irradiator and inserted into the mouth, directing the beam of rays first to one tonsil, and then to the other. The irradiation dose is 1-2 biodoses (1-2 min). Irradiation is carried out daily or every other day. The course of treatment is 3-5 irradiations.

### 4.3 List of practical skills that a student should have after mastering the discipline.

1. Make a table of Russian resorts with the methods used at the resorts.
2. Be able to fill out a health resort book.
3. Prescribe a physiotherapy prescription for a child depending on age with various pathologies.
4. To be able to determine the biodose of UV radiation in children.
5. Calculate the biodose depending on the change in distance.
6. Be able to prescribe electrosleep therapy
7. Be able to release general UV radiation.
8. Be able to prescribe diadynamic therapy for pain syndrome.
9. Be able to distinguish infrared erythema from ultraviolet erythema.
10. Be able to let go of the laser therapy procedure
11. Be able to let go of the UHF therapy procedure
12. Be able to let go of the microwave therapy procedure
13. Be able to let go of ultrasound therapy
14. Be able to release Darsonval currents
15. Be able to prescribe magnetic therapy
16. Discontinue magnetic therapy for pain.
17. Be able to prescribe amplipulse therapy
18. Be able to release galvanization longitudinally.
19. Be able to release galvanization transversely.
20. Prescribe a galvanic collar according to Shcherbak.

21. Prescribe a paraffin application for neurological pathology in newborns.
22. Prescribe mineral water for a child with gastritis depending on age.
23. Prescribe drinking mineral water for gastrointestinal diseases.
24. Be able to prescribe inhalation therapy for bronchopulmonary pathology.
25. Know how to dose air baths.
26. Know how to dose sunbathing.
27. Be able to prescribe mud therapy
28. Be able to prescribe aerosol therapy using mineral water.
29. Provide an express assessment of the health level. Determine the level of physical condition of the subject using the calculation formula. Reporting forms of educational documentation: protocols with conclusions on the level of health and UFS.
30. Select, justify and conduct tests with physical activity to study the functional capabilities of the subject, having mastered the technique of conducting functional tests: Ruffier index, Martinet test.
31. Provide a medical opinion on the functional state of the body of the person being examined, recording any violations identified.
32. Justify and prescribe a motor regimen for the patient in accordance with his condition, the period of the disease, and the physical and functional characteristics of the patient's body.
33. Will prescribe special exercises taking into account the existing disease and the functional characteristics of the patient's body.
34. Conduct medical observation of the patient's reaction to the load, taking into account the effectiveness of the therapeutic exercise procedure.
35. Determine the type of reaction to physical activity. The concept of pathological and physiological reactions.
36. Identify visual signs of fatigue and their severity.
37. To determine the increase in the main functional indicators of the patient's body in the main part of the therapeutic exercise procedure to the initial ones and its adequacy to the motor regime.
38. To determine the main functional indicators of the patient after the end of the pulmonary hypertension procedure and the period of their recovery.
39. Make appropriate adjustments to the exercise therapy procedure if the response to the completed load is insufficient or inadequate.

### 4.4 List of questions for the test

1. Subject and tasks of physiotherapy. Development of physiotherapeutic care in the Russian Federation.
2. Physioprophylaxis and rehabilitation.
3. Physiological mechanisms of action of physical factors Theoretical foundations of the influence of physical factors on the body in light of the latest achievements in biophysics, biochemistry and physiology.
4. The concept of local, focal and general reaction.
5. Basics of safety engineering.
6. Physiological action of direct current. Galvanization. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
7. Principles of introducing medicinal substances into the body by means of direct current. Medicinal electrophoresis. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
8. Electrosleep. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
9. Transcranial electroanalgesia. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.

10. Electrical stimulation. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
11. Diadynamic therapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
12. Amplipulse therapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
13. Fluctuation. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
14. Interference therapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
15. Darsonvalization. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
16. Ultra-high frequency electric field. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
17. Microwave therapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
18. Magnetotherapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
19. Light therapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
20. Cryotherapy. Hypothermia. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
21. Paraffin, ozokerite, therapeutic mud. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
22. Vibrotherapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
23. Ultrasound therapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
24. Aeroiono- and aerosol therapy. Properties of medicinal aerosols. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
25. Hydrotherapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
26. Balneotherapy. Mechanism of action. Therapeutic effects. Indications, contraindications. Method of application. Dosage principles.
27. Classification of resorts. Climatic, balneological, mud resorts.
28. Medical means of resorts. Heliotherapy, aerotherapy, climatotherapy, thalassotherapy, balneotherapy, mud therapy.
29. General indications and contraindications for sending patients to a resort.
30. Functional tests of the cardiovascular and respiratory systems and their importance in assessing physical condition, selecting and justifying physical training programs.
31. Physiological curve of pulse and blood pressure under load. External signs of fatigue observed during exercise.
32. Criteria for the correct conduct of classes.
33. General principles of therapeutic physical training, means, forms, methods of its application for patients at the inpatient and outpatient stages of rehabilitation.
34. Classification of physical exercises. Basic principles of selection of exercises and their dosage.
35. Mechanisms of action of physical exercises.
36. Indications and contraindications for the use of physical exercises.
37. Principles of constructing a therapeutic gymnastics procedure.
38. Features of methods of therapeutic gymnastics for acute and chronic lung diseases.

Indications and contraindications for the appointment of therapeutic gymnastics.

39. Justification of the mechanisms of action of physical exercises on blood circulation.
40. Selection and justification of particular methods of therapeutic physical training for diseases of the cardiovascular system. Criteria for dosing physical loads during training of varying intensity.
41. Indications and contraindications for prescribing physical exercises for myocardial infarction.
42. Physical performance of patients and physical culture means for its maintenance and improvement.
43. Selection and justification of particular methods of therapeutic physical training for hypertension and neurocirculatory dystonia. Criteria for dosing physical loads during training of varying intensity.
44. Indications and contraindications for the prescription of physical exercises for hypertension and neurocirculatory dystonia.
45. Physical performance of patients and physical culture means for its maintenance and improvement.
46. Clinical and physiological rationale for the use of therapeutic exercise in lung diseases.
47. Determination of the severity class of AMI.
48. Motor modes in AMI. Target setting and content.
49. Principles of activating patients with acute myocardial infarction at the inpatient stage.
50. Main hemodynamic factors.
51. Clinical and physiological rationale for the use of exercise therapy in ischemic heart disease.
52. Objectives of rehabilitation measures for coronary heart disease at the outpatient stage of treatment.
53. Definition of FC IHD, classification.
54. Contraindications to DTF in ischemic heart disease.
55. Principles of rehabilitation measures for patients with coronary heart disease at the outpatient stage depending on the severity class.
56. 6-minute test. Interpretation of results.
57. Principles of rehabilitation depending on the results of the 6-minute test.
58. The main pathogenetic mechanisms of FVD impairment in lung diseases.
59. Drainage positions and exercises depending on the pathological focus. Contraindications for use.