
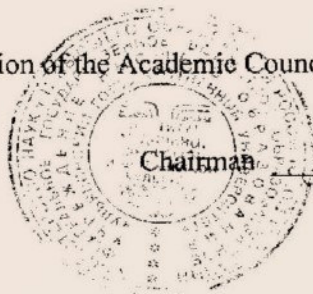


Ministry of science and high education RF Ulyanovsk State University	Form	
F-The Evaluation funds of the discipline		

**APPROVED**  
by the decision of the Academic Council of the USU Institute of Medicine,  
Ecology and Physical Culture  
June «19» 2019, № T0/210



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*(signature, signature clarification)*  
«19» of June 2019

### WORKING PROGRAM OF THE DISCIPLINE

Discipline	MEDICAL REHABILITATION
department	Medical
chair	Neurology, neurosurgery, physiotherapy and physical therapy
Course	3

The direction/ specialty 31.05.01 "General Medicine"

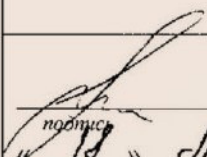
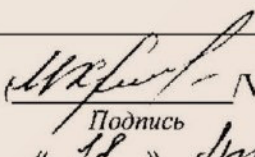
Full-time form of education


Date of introduction of the program in the educational process of USU, "01" \_\_09\_\_ 2019

The program is actualized at a meeting of the department: the protocol number \_from\_ \_\_ \_\_ 20  
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Information about the developers:

Full name	chair	Position, academic degree
Kulikova TK	Neurology, neurosurgery, physiotherapy and physical therapy	Associate Professor, Ph.D.

AGREED	AGREED
Head of the Department, realizing discipline	Head of the graduating Department
 /Mashin V.V./ Подпись « 18 » June 20 19 г.	 /Vize-Hripunova M.A./ Подпись « 18 » June 20 19 г.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

**1. DISCIPLINATION Aims and ACTIVITIES: Aims to master the discipline: "Medical rehabilitation":**

To contribute to the formation of the professional competence of a doctor in the field of medical rehabilitation through the formation of a holistic view of its current capabilities, based on an understanding of the structure and essence of the rehabilitation process.

Contribute to mastering the knowledge and skills needed to solve professional tasks

**Tasks of mastering the discipline:**

- to learn the basics of medical rehabilitation;
- Study the principles of organization and operation of medical rehabilitation departments of medical institutions, medical rehabilitation centers, sanatoriums and resorts;
- to acquire knowledge and skills in basic methods of medical rehabilitation: therapeutic physical training, physiotherapy;
- To study the basics of methods: reflexotherapy, manual therapy, psychological rehabilitation, therapeutic nutrition;
- gain knowledge and skills to assess the effectiveness of medical rehabilitation methods;
- master the rules of medical documentation;
- To acquire knowledge and skills in compiling individual medical rehabilitation programs at inpatient, outpatient, and sanatorium-resort stages of medical rehabilitation for patients with major pathologies;
- gain knowledge and skills in organizing and operating the multidisciplinary team in the conditions of the medical rehabilitation department and center;
- to acquire knowledge and skills of medical control in medical rehabilitation;
- Shape students' readiness to use the knowledge gained in their professional activities;

**2. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF OPOP:**

**2.1** The discipline "Medical Rehabilitation" refers to the Variable Disciplines Block of the mandatory variative part of the main professional educational program of higher education in the specialty "31.05.01. Medicine", developed in accordance with the Federal State Educational Standard for Higher Education (FSES ETO) training of highly qualified personnel, approved by the order of the Ministry of Education and Science of Russia № 95 of February 9, 2016...

**2.2.** Requirements for the input knowledge, skills and competences of a student necessary for its study;

**Physics, mathematics. Medical informatics. Medical Biophysics**


Know:

Basics of physical factors application 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 body's vital functions and their characteristics. The most common biophysical regularities underlying the processes occurring in the body.

Physical and chemical properties of biological tissues.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

Main characteristics of factors affecting the body, biophysical mechanisms of such impact. The physical and chemical essence of the processes taking place in a living organism on molecular, cellular, tissue and organ levels.

Functional systems of the human body, their regulation and self-regulation when exposed to the external environment in the norm and pathology.

Mathematical methods for solving intellectual problems and their application in medicine; theoretical bases of informatics, collection, storage, search, processing, transformation, distribution of information in medical and biological systems, use of information computer systems in medicine and healthcare; principles of operation and devices of equipment used in medicine, basics of physical and mathematical laws, which are displayed in medicine.

Know how:

to use educational, scientific, popular scientific literature, the Internet for professional activity, to work with the equipment taking into account the safety rules.

**Biochemistry.** As a result of mastering the discipline, the student must:

Know:

structure and biochemical properties of the main classes of biologically important compounds: proteins, nucleic acids, carbohydrates, lipids, vitamins;

basic metabolic paths of their transformation; enzymatic catalysis; basics of bioenergetics;

the role of cell membranes and their transport systems in metabolism in the human body;

The chemical and biological essence of the processes occurring at the molecular and cellular levels in the human body;

basic mechanisms for regulation of metabolic transformations of proteins, nucleic acids, carbohydrates, lipids;

Know how:

Use educational, scientific, popular scientific literature, the Internet for professional activities;

perform test tasks in any form, solve situational tasks based on theoretical knowledge.

Possess:

basic technologies of information transformation: text, tabular editors; techniques of work in the Internet for professional activity;

with the medical-functional concept apparatus.


**Anatomy.** As a result of mastering the discipline, the student must:

Know:

basics of anatomical terminology in Russian and Latin equivalents; general regularities of human body structure, structural and functional relations of body parts;

anatomical-topographic relations of organs and body parts in adults, children and adolescents; basic details of the structure and topography of organs, their systems, their main functions in different age periods;

possible variants of structure, main anomalies and defects of organs and their systems development;

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


**Know how:**

To find and feel the main bone and muscle reference points on a living person's body, to apply the projection of the main vascular and nerve bundles of human body regions; to name and demonstrate movements in the joints of the human body correctly; to use scientific literature;  
show on the images received by different imaging methods (X-rays, computed tomography and magnetic resonance imaging, etc.) organs, their parts and structural details

**Possess:**

basic technologies of information transformation: independent work with educational literature on paper and electronic media, Internet resources on human anatomy.

**Normal physiology.** As a result of mastering the discipline, the student must: **Know:**  
basic properties and states of excitable tissues, mechanisms of bioelectric phenomena;  
Structural and functional properties and peculiarities of regulation of processes for reduction of transverse and smooth muscles;  
role of different departments and structures of the CNS in regulation of somatic and visceral functions of the body. Reflexive arcs with visceral and somatic components; individual features of the organization and reflex activity of the autonomous nervous system, its participation in the formation of holistic forms of behavior;  
mechanisms of functioning and principles of regulation of endocrine cells, internal secretion glands and peculiarities of their interaction in conditions of purposeful behavior and pathology;  
The blood system and its role in the maintenance and regulation of homeostatic constants of the body, blood function, characteristics and functional features of physiological blood constants;  
The main stages and indicators of respiratory function, respiratory center and its structure, features of respiratory regulation at various loads;  
The role of proteins, fats, carbohydrates, minerals, vitamins and water in the body's vital functions;  
Physiological features of the regulation of metabolism and energy in the body in the conditions of the action of extreme environmental factors and professional activity; features and regularities of the structural and functional organization of the functions of the gastrointestinal tract;  
basic stages of urine formation and mechanisms of their regulation; basic mechanisms of heart activity regulation, heart cycle;  
physiological role of the vascular system sections, linear and volumetric velocity blood flow, neurohormonal mechanisms of regulation of vascular tone and systemic hemodynamics;  
peculiarities of the structural and functional organization of the microcirculatory channel of different regions of the healthy human body, transcapillary exchange and its regulation;  
basic morphological and functional features of the organization of various departments of sensor systems;  
mechanisms of formation of conditioned reflex and its inhibition, role in clinical practice, components of functional system of behavioral act;  
concept and classification of pain;  
peculiarities of morpho-functional organization of nociceptive and antinociceptive systems;  
mechanisms and features of the formation of basic functional systems of the body (maintaining a constant level of nutrients in the blood, blood pressure, indoor temperature, maintaining the

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

integrity of the body, etc.).

Know how:

use knowledge about:

Methodological approaches (analytical and systemic) for understanding the regularities of the holistic organism;

theories of functional systems to understand the mechanisms of self-regulation of homeostasis and the formation of useful results in adaptive activity;

properties and functions of various systems of the body in the analysis of regularities of formation of functional systems of the body of a healthy person; mechanisms of formation of specific and integrative functions;

Possess methods:

assessment of the impact of environmental factors based on changes in the functional state of the body.

general blood test evaluation; general urine

test evaluation; pulse palpation;

blood pressure measurements.

**Pathological anatomy.** As a result of mastering the discipline, the student must: Know: basic laws of development and vital functions of the human body based on the structural organization of cells, tissues and organs; histofunctional features of tissue elements; methods of their study, sexual and individual features of the structure and development of the human body;

concepts of etiology, pathogenesis, morphogenesis, disease pathomorphosis, principles of disease classification; basic concepts of general nosology;

functional systems of the human body, their regulation and self-regulation under the influence with the environment in the norm and in pathological processes; structure and functions of the immune system, its age features, mechanisms

development and functioning, basic immunodiagnostic methods, methods of immune status assessment and indications for immunotropic therapy application;

Ability to: justify the nature of the pathological process and its clinical manifestations, the principles of pathogenetic therapy for the most common diseases,

**Pathophysiology.** As a result of mastering the discipline, the student must:

Know:

functional systems of the human body, their regulation and self-regulation in the interaction with the external environment in the norm and in pathological processes; substantiate the nature of the pathological process and its clinical manifestations; principles of pathogenetic therapy of the most common diseases.

Know how:


To substantiate the nature of the pathological process and its clinical manifestations, the principles of pathogenetic therapy of the most common diseases.

**Propaedeutics of internal diseases.**

As a result of mastering the discipline, the student must:

Know:



Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

etiology, pathogenesis, diagnosis, treatment of major internal organ diseases in typical classical form

Know how:

Identify causal and investigative links of the disease development, prescribe an ethic pathogenetic treatment;  
recognize manifestations of the disease in a particular patient with dysfunction of various organs and systems.

Possess:

Methods of collecting anamnesis of the disease and anamnesis of life with the identification of risk factors for this disease

**Physical culture.**

Know:

principles of healthy lifestyle and physical development in rehabilitation

Know how:

Use physical training methods to improve health, performance and well-being.


**2.3 Disciplines for which the discipline is prior:**

- hospital therapy;
- polyclinic and emergency therapy;
- hospital surgery;
- obstetrics and gynecology;
- traumatology and orthopedics;
- neurology;
- endocrinology;
- pediatrics.


**3. LIST OF PLANNED RESULTS OF TRAINING BY DISCIPLINE  
(MODULE) MEDICAL REHABILITATION  
CORRELATED WITH PLANNED DEVELOPMENT RESULTS**

**CORE EDUCATION**

<b>Code and Names e realizableable competence</b>	<b>The list of planned training results by discipline (module), correlated with the indicators of competence achievement</b>
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

<p><b>OPK-11</b> Preparedness for use of medical devices, provided by the procedures of medical care.</p>	<p><b>Know:</b></p> <ul style="list-style-type: none"> <li>- Pr-z MH RF №1705n from 29.12.2012. "On the order of medical rehabilitation" (in outpatient and polyclinic conditions, in day hospitals);</li> <li>- equipment of physiotherapy rooms;</li> <li>- equipment of LFK offices.</li> </ul> <p><b>Know how: :</b></p> <p><b>Appoint and conduct physiotherapeutic procedures:</b></p> <ul style="list-style-type: none"> <li>- UFO;</li> <li>- determine UFO biodose using a biosimeter;</li> <li>- procedures for galvanization and drug electrophoresis;</li> <li>- SMT therapy;</li> <li>- variable n/h magnetic field;</li> <li>- magnetolaser therapy;</li> <li>- acupressure</li> <li>- shcherbak galvanic collar</li> <li>- Diadynamic therapy for pain syndrome.</li> <li>- to distinguish between infrared erythema and ultraviolet.</li> <li>- UHF Therapy</li> <li>- microwave therapy</li> <li>- ultrasonic therapy</li> <li>- d'Arsonval currents</li> <li>- magnetotherapy</li> </ul> <p><b>Appoint and conduct LFC procedures:</b></p> <ul style="list-style-type: none"> <li>- individual method;</li> <li>- by the small group method;</li> <li>- batchwise</li> <li>- with gymnastic clothes ;</li> <li>- on bike simulators.</li> <li>- use orthoses for the hand, ankle joint;</li> <li>- on a machine for robotic upper limb mechanotherapy;</li> <li>- on a machine for robotic mechanotherapy of the lower extremities;</li> <li>- use a robotic ergometer;</li> <li>- Biofeedback simulators for rebalancing (stabilization platform) ;</li> <li>- Biofeedback simulators for walking training;</li> <li>- simulators for increasing strength and volume of movements in the joints of limbs using the example of equipment in the center of Bubnovsky</li> </ul> <p><b>Possess:</b></p>
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

	<ul style="list-style-type: none"> <li>- the method of execution of medical documentation on physiotherapy;</li> <li>- The method of execution of medical documentation for the LFK;</li> <li>- Methods of individual rehabilitation programs with the use of rehabilitation equipment for physiotherapy, and LFK.</li> </ul>
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


<p><b>PC-14</b> Readiness to determine the need for and application of natural healing factors, medication, non-medication of ozone therapy and other techniques inpatients in need of medical rehabilitation and spa treatment</p>	<p><b>Know:</b> Foundations: Medical, social and professional rehabilitation, physiotherapy, Therapeutic physical training, Methods: electrotherapy, magnetotherapy. Therapeutic application of mechanical factors. hydrotherapy. thermotherapy. spa therapy. medical rehabilitation in the structure of sanatorium and spa care. manual therapy. reflexotherapy. psychological rehabilitation. therapeutic nutrition. Medical control in medical rehabilitation. therapeutic physical training (LFK). rehabilitation of disabled people. madrehabilitation in cardiology. madrehabilitation in pulmonology. madrehabilitation in gastroenterology and endocrinology. madrehabilitation in oncology. madrehabilitation for infectious diseases. madrehabilitation in neurology. madrehabilitation in gastroenterology and endocrinology. madrehabilitation in oncology. madrehabilitation for infectious diseases. madrehabilitation in neurology. Medical Rehabilitation in Traumatology and Orthopedics. Medical Rehabilitation in Surgery. Medical Rehabilitation in Obstetrics and Gynecology. Medical Rehabilitation in Pediatrics</p> <p><b>Know how:</b> - determine indications and contraindications to the prescription of basic medical rehabilitation equipment; - Individually select means of medical rehabilitation for the patient, taking into account his morphofunctional features and the clinical course of the disease; - to determine the sequence , compatibility of the prescribed physical therapy means, LFC, reflexotherapy, manual. therapies, psychotherapy, massage;</p>
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


<p><b>PC-4</b> ready for use social-hygienic collection methods and medico statistical</p>	<ul style="list-style-type: none"> <li>- organize the work of the multidisciplinary team in the conditions of the medical rehabilitation department and center;</li> <li>- evaluate the patient's physical development taking into account clinical and anthropometric indicators;</li> <li>- Compile and justify an individual rehabilitation program for a patient;</li> <li>- evaluate the effectiveness of a medical rehabilitation programme</li> <li>- evaluate the effectiveness of a medical rehabilitation program in a neurological clinic using the FIM functional independence scale</li> <li>- write out a physiorecept,</li> <li>- To substantiate and prescribe motor regime to a patient at inpatient, outpatient and resort stages of rehabilitation;</li> <li>- to choose, justify and conduct physical exercise samples to assess the functional state of the body of a healthy and sick person;</li> <li>- assign special exercises taking into account the existing disease;</li> <li>- to conduct with a patient separate types of physical exercises according to the classification of physical exercises adopted in the LFK;</li> <li>- to execute prescriptions of physiotherapy and therapeutic physical training in F.044/U and F.042/U.</li> </ul> <p><b>Possess:</b> Methods:</p> <ul style="list-style-type: none"> <li>- somatometrics,</li> <li>- somatoscopies,</li> <li>- spirometry,</li> <li>- dynamometry,</li> <li>- performance evaluation (Martinet's sample),</li> <li>- assessment of the patient's functional state on the FIM scale in a neurological clinic</li> <li>- electrotherapies,</li> <li>- magnetotherapy,</li> <li>- heat treatments,</li> <li>- phototherapies,</li> <li>- therapeutic gymnastics complexes skills</li> <li>- skills in individual rehabilitation programmes</li> </ul> <p><b>Know:</b></p> <ul style="list-style-type: none"> <li>- methodology of public health research with the purpose of its preservation, strengthening and restoration,</li> <li>- collection, statistical processing and analysis techniques public health information</li> <li>- leading medical-demographic indicators, characterizing public health, definition and level in dynamics,</li> <li>- cause structure and mortality rates,</li> <li>- morbidity and disability indicators, definition, characteristics, level and structure,</li> <li>- key performance indicators of the medical organization.</li> </ul>
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

<p>analysis data on performance public health</p> <p><b>PC-15</b> - willingness to train patients and their relatives main hygienic measures of health-improving character- thera, the skills of self-control of basic physiological indicators- In addition, there are a number of health promotion and health promotion activities for professionals. lactics of diseases;</p>	<p><b>Know how:</b></p> <ul style="list-style-type: none"> <li>- Calculate and evaluate key demographic indicators, characterizing the health status of the population,</li> <li>- Calculate and evaluate morbidity level and structure, deaths,</li> <li>- calculate and evaluate indicators that characterize morbidity with temporary disability,</li> <li>- calculate and evaluate indicators that characterize activity of medical organizations.</li> </ul> <p><b>Possess:</b></p> <ul style="list-style-type: none"> <li>- skills in calculating and assessing basic demographic indicators characterizing the health status of the population,</li> <li>- skills to calculate and evaluate level and structure morbidity and mortality,</li> <li>- skills in calculating and evaluating indicators that characterize morbidity with temporary disability,</li> <li>- skills in calculating and evaluating indicators that characterize activity of medical organizations.</li> </ul> <p><b>Know:</b></p> <ul style="list-style-type: none"> <li>-Bases of preventive medicine aimed at improving the health of the population of different age groups.</li> <li>- Organization and implementation of rehabilitation activities among the population,</li> <li>-Mechanism of therapeutic and rehabilitative effects of physiotherapy, sanatorium-resort treatment;</li> <li>- Mechanism of therapeutic and rehabilitative effect of therapeutic treatment physical training.</li> </ul> <p><b>Know how:</b></p> <ul style="list-style-type: none"> <li>- <i>Participate</i> in organizing and providing preventive and rehabilitation assistance to the population</li> <li>- To give recommendations on the choice of the optimal mode of motor activity depending on the morphofunctional status, to determine indications and contraindications to the prescription of therapeutic exercise, physiotherapy;</li> <li>- Apply a variety of rehabilitation measures (medical, social and professional) among the population at the most convenient time</li> <li>- common pathological conditions and damage to the body.</li> <li>- Draw up a treatment plan for the patient, taking into account the course of the disease</li> <li>- To carry out preventive measures with the population to increase the body's resistance to adverse factors</li> <li>- external environment using a variety of methods, promote healthy lifestyle.</li> </ul> <p><b>Possess:</b></p> <ul style="list-style-type: none"> <li>- The skills of teaching patients and their relatives the basic hygienic measures</li> </ul>
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


	<p>of health-improving character; on forming a healthy lifestyle.</p> <ul style="list-style-type: none"> <li>- Methods of examination of adults and adolescents, in connection with physical training and sports.</li> <li>- Methods of performing functional samples (spirometry, spirometry, electrocardiography, etc.).</li> <li>-Methods of physical performance test (six-minute walking test, etc.)</li> </ul>
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

**4. OVERALL DISCIPLINE EFFORT**


**4.1. Volume of discipline in credit units (total) 3**

**4.2. Volume of discipline by type of educational work (in hours) 72**

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

Type of training work	Number of hours ( <u>form of training face-to-face</u> )	
	Just as planned.	Including by semesters
		5
1	2	3
Contact work of trainees with faculty member according to the UP	54	54
Auditorium lessons:	54	54
lectures		
Seminars and practical exercises	54	54
laboratory work, workshops	-	-
Independent work	18	18
Form of current knowledge and control independent work: testing, counter. work, colloquium, essay, etc. (at least 2). species)	testing, situation tasks, abstract	testing, situation tasks, abstract
Coursework	-	-
Types of intermediate certification (exam, credit)	credit	credit
Only hours by discipline	72	72




Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


### 4.3. Content of the discipline (module.) Distribution of hours by topics and types of training work:

#### Full-time education form


Section and theme names	All about	Types of training sessions					Form of current knowledge control
		Auditorium sessions			Borrowing in internet free form	Self-made work	
		Lectures	Practical classes, seminars	Laboratory work, practice			
1	2	3	4	5	6	7	
<b>Section 1. Basics of medical rehabilitation.</b>		<b>Methods and means of medical rehabilitation.</b>					
<b>Theme 1.</b> 1.1 The basics of medical rehabilitation. 1.2 Basics of physiotherapy	8	0	6	-	-	2	Test assignments. Poll. Protection of the report (abstract) Evaluation of the implementation of the practical measures who skill or situational awareness
<b>Theme 2.</b> 2.1 Electrotherapy. 2.2 Magnetotherapy . .	8	0	6	-	-	2	Test assignments. Poll. Defending a report (abstract) Assessment of a practical skill or a situational solution other tasks
<b>Theme 3.</b> 3.1 Phototherapy 3.2 Therapeutic application factors mechanical	8	0	6			2	Test assignments. Poll. Protection of the report (abstract) Assessment

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


nature. 3.3 Hydrotherapy. 3.4 Thermotherapy.							of the performance of a practical skill or solution situational challenges
<b>Theme 4.</b> 4.1 Resort room therapeutics. 4.2 Medical recuperation in structure sanatorium-resort help. 4.3 Manual therapeutics. 4.4 Therapeutic nutrition.	8	0	6			2	Test assignments. Poll. Defending a report (abstract) Assessment of a practical skill or a solution to a situational problem.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

<b>Theme 5.</b> 5.1 Reflexotherapy me. 5.2 Psychologically I am rehabilitation. 5.3 Medical supervision in medical rehabilitation.	8		6	-	-	2	Test assignments. Poll. Defending a report (abstract) Assessment of a practical skill or a situational solution other tasks
<b>Theme 6.</b> 5.1 Therapeutic physical training (TMA). 5.2 Wellness methods 5.3 Rehabilitation of disabled people.	8		6	-	-	2	Test assignments. Poll. Protection of the report (abstract) Assessment of the performance of a practical skill or solution situational challenges
<b>Section 2: Medical Rehabilitation in Clinical Practice.</b>							
<b>Theme 7.</b> 7.1 Medreabitats in cardiology. 7.2 Medreabitats in pulmonology .	8		6	-	-	2	Test assignments. Poll. Protection of the report (abstract) Assessment of the performance of a practical skill or solution situational challenges

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


<b>Theme 8.</b> 8.1 Medreabitats in gastroenterolo guia and endocrinologists and. 8.2 Medreabitats in oncology.	8		6			2	
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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

8.3 Medical rehabilitation for infectious diseases. 8.4 Medreabitats in neurology.							
<b>Theme 9.</b> 9.1 Medical recuperation in traumatologies and orthopedics. 9.2 Medical recuperation in surgeries. 9.3 Medrehabilitatsi I'm in the ausher and gynecology. 9.4 Medical recuperation in pediatrics	8		6	-	-	2	Test assignments. Poll. Defending a report (abstract) Assessment of a practical skill or a solution to a situational problem.
<b>Total:</b>	72	0	54	-	-	18	

### Interactive forms of training

n/a	The name of the discipline section	Interactive forms of training	Duration (hour)
1.	Section 1. Basics of medical rehabilitation. Methods and means of medical rehabilitation. Topics: №1-№6	Working in small groups to solve situational problems. Work in small groups: "Patient physician physiotherapist." "Patient-doctor LFK."	3
2	Section 2: Medical Rehabilitation in Clinical Practice. Topics: №7-8	Working in small groups to solve situational problems. Work in small groups: "Patient - multidisciplinary team »	3
<b>TOTAL</b>			<b>6</b>

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

## **5. DYSCILINE (MODULE) CONTENT MEDICAL REHABILITATION**

### **Section 1. Basics of medical rehabilitation. Methods and means of medical rehabilitation.**

#### **Theme**

#### **1.**

#### **1.1 The basics of medical rehabilitation.**

#### **1.2 Basics of physiotherapy.**

#### **Content of the topic.**

#### **1.1. The basics of medical rehabilitation.**

1.1.1. Basic concepts

1.1.1.1. Scientific bases

1.1.1.2. Medical Rehabilitation as a Clinical Specialty

1.1.1.3. Medical rehabilitation as an academic discipline

1.1.2. History of medical rehabilitation doctrine development

1.1.3. Methodological bases of medical rehabilitation

1.1.3.1. Basic principles

1.1.3.2. Proven Medicine and Rehabilitation

1.1.3.3. Innovative rehabilitation technologies

1.1.4. Medical rehabilitation organization

#### **1.2. Basics of physiotherapy.**

1.2.1 Main provisions. Basic concepts in physiotherapy.

1.2.2 The basic principles of therapeutic application of physical factors.

#### **Theme 2.**

#### **2.1 Electrotherapy.**

#### **2.2 Magnetotherapy.**

#### **Content of the topic.**

#### **2.1 Electrotherapy.**

2.1.1. Direct current electrotherapy

2.1.2. Pulsed electrotherapy

2.1.3. Low-frequency electrotherapy

2.1.4. Medium frequency electrotherapy

2.1.5. Ultra High Frequency Therapy

2.1.6 Ultra-high frequency electrotherapy

2.2.7. Extremely high frequency therapy

#### **2.2. Magnetotherapy.**


2.2.1 Transcerebral Magnetotherapy

2.2.2 Low frequency magnetotherapy

2.2.3 High-frequency magnetotherapy

#### **Theme 3.**




Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

**3.1 Phototherapy**

**3.2 Therapeutic application of factors of mechanical nature.**

**3.3 Hydrotherapy.**

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

### **3.4 Thermotherapy**

#### **. Content of the topic.**

#### **2.3 Phototherapy.**

3.1 Infrared irradiation.

3.2 Chromotherapy.

3.2 Ultraviolet irradiation.

3.3 Laser therapy.

#### **3.1 Therapeutic application of factors of mechanical nature.**

3.1.1 Therapeutic massage.

3.1.2 Traction therapy.

3.1.3 Vibrotherapy.

3.1.4 Remote shock-wave therapy.

3.1.5 Therapeutic application of ultrasound.

3.1.6 Aerionotherapy.

3.1.7 Aerosol-therapy.

3.1.8 Haloaerosol therapy.

3.1.9 Aerophytotherapy.

#### **3.2 Hydrotherapy.**

3.2.1 Souls

3.2.2 Bathrooms .

3.2.3 Colonohydrotherapy

3.2.4 Bathhouse

#### **3.3 Thermotherapy**

3.3.1 Thermotherapy.

3.3.2 Cryotherapy.

### **Theme 4.**

#### **4.1 Spa therapy.**

#### **4.2 Medical rehabilitation in the structure of sanatorium and spa care.**

#### **4.3 Manual therapy.**

#### **4.5 Therapeutic nutrition. Content of the topic.**

#### **4.1 Spa therapy.**

4.1.1 Climatotherapy

4.1.2 Balneotherapy

4.1.3 Peloidotherapy.

#### **4.2 Medical rehabilitation in the structure of sanatorium and spa care.**


4.2.1 Sanatorium and spa treatment.

4.2.2 Medical Rehabilitation at Resorts

#### **4.3 Manual therapy.**

4.3.1 Basic concepts and principles of manual therapy.


4.3.2 Methods of manual therapy.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

#### **4.4 Medical nutrition**

4.4.1 Basics of therapeutic nutrition

4.4.2 Evaluation of nutritional status and determination of nutritional support needs.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

4.4.3 Medical nutrition in medical rehabilitation programs.

**Theme 5.**

**5.1 Reflexotherapy.**

**5.2 Psychological rehabilitation.**

**5.3 Medical supervision in medical rehabilitation. Content of the topic.**

**5.1 Reflexotherapy.**

5.1.1 Basic concepts and principles.

5.1.2 Methods of reflexotherapy

**5.2 Psychological rehabilitation.**

5.2.1 Basic concepts and principles

5.2.2 Methods of psychological rehabilitation.

5.2.3 Traditional methods

**5.3 Medical supervision in medical rehabilitation.**

5.3.1 Basic concepts and principles.

5.3.2 Types of medical control

5.3.3 Methods of evaluation of the initial level of patient adaptation reserves.

5.3.4 Standard assessment scales for integral patient assessment

**Theme 6.**

**6.1 Therapeutic physical training (PTC).**

**6.2 Wellness methods**

**6.3 Rehabilitation of disabled people. Content of the topic.**

**6.1 Therapeutic physical training (PTC).**

6.1.1 Main provisions and principles of therapeutic physical training. 6.1.1.1 Basic concepts

6.1.1.2 Principles of therapeutic use of physical exercises

6.1.2 Methods of therapeutic physical training.

6.1.2.1 Kinesitherapy.

6.1.2.1.1 Therapeutic gymnastics

6.1.2.1.2 Morning gymnastics

6.1.2.1.3 Therapeutic motor mode

6.1.2.1.4 Other forms of kinesitherapy

6.1.3 Therapeutic Walking

6.1.4 Mekhanokinesitherapy

6.1.5 Bio-controlled mechanokinesitherapy

6.1.6 Hydrokinesitherapy

6.1.7 Robotic Mechanotherapy

6.1.8 Ergotherapy


6.1.9 Sport Exercises

6.1.10 Orthezotherapy


**6.2 Wellness methods**

6.2.1 Health Assessment

6.2.2 Wellness training

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

### 6.2.3 Healthy physical methods

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

### **6.3 Rehabilitation of disabled people.**

6.3.1 Basics of rehabilitation assistance to disabled people

6.3.2 Individual rehabilitation program

6.3.3 Technical means of rehabilitation.

#### **Theme 7.**

### **7.1 Medrehabilitation in cardiology.**

### **7.2 Medrehabilitation in pulmonology.**

#### **Content of the topic.**

### **7.1 Medrehabilitation in cardiology.**

7.1.1 Myocardial infarction

7.1.2 Coronary heart disease

7.1.3 Condition after myocardial revascularization

### **7.2 Medrehabilitation in pulmonology.**

7.2.1 Pneumonia

7.2.2 Chronic obstructive pulmonary disease

7.2.3 Bronchial asthma

#### **Theme 8.**

### **8.1 Medrehabilitation in gastroenterology and endocrinology.**

### **8.2 Medrehabilitation in oncology.**

### **8.3 Medrehabilitation for infectious diseases.**

### **8.4 Medrehabilitation in neurology.**

#### **Content of the topic.**

### **8.1 Medrehabilitation in gastroenterology and endocrinology.**

8.1.1 Diseases of the operated stomach and gallbladder

8.1.2 Diabetes mellitus

### **8.2 Medrehabilitation in oncology.**

8.2.1 Main provisions and principles

### **8.3 Medrehabilitation for infectious diseases.**

8.3.1 Viral hepatitis


8.3.2 Tuberculosis

### **8.4 Medrehabilitation in neurology.**

7.5.1 Acute cerebral circulation disorder

7.5.2 Vertebrogenous diseases of the peripheral nervous system



Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

## **Theme 9.**

### **9.1 Medical rehabilitation in traumatology and orthopedics.**

### **9.2 Medical rehabilitation in surgery.**

### **9.3 Medical rehabilitation in obstetrics and gynecology.**

### **9.4 Medical rehabilitation in pediatrics Content of the topic.**

#### **9.1 Medical rehabilitation in traumatology and orthopedics.**

9.1.1 Basics of Medical Rehabilitation in Traumatology and Orthopedics

9.1.2 Syndromes formed in the post-traumatic and postoperative periods.

9.1.3. Peculiarities of rehabilitation at conservative and surgical methods of treatment of injuries and deformations of musculoskeletal system.

#### **9.2 Medical rehabilitation in surgery.**

9.2.1 Pathophysiological features of surgical trauma.

9.2.2 Medical Rehabilitation for Pulmonary Surgery

9.2.3 Medical rehabilitation during operations on abdominal cavity organs

#### **9.3 Medical rehabilitation in obstetrics and gynecology.**

9.3.1 Pregnancy with extragenital and obstetric pathology

9.3.2 Inflammatory diseases of the female genitalia...

#### **9.4 Medical rehabilitation in pediatrics.**

9.4.1 Peculiarities of medical rehabilitation of children with deformities of bone and muscular system, flat feet, respiratory diseases, gastrointestinal tract, kidney diseases.

9.4.2 The age of prescription of physical methods of treatment.

## **6. TOPICS FOR PRACTICAL TRAINING**

### **Section 1. Basics of medical rehabilitation. Methods and means of medical rehabilitation.**

#### **Theme 1.**

#### **1.1 The basics of medical rehabilitation.**

#### **1.2 Basics of physiotherapy.**

(Form of holding - practical training).

**Questions on the topics of the section** (for discussion in the class, for self-study).

#### **1.1. Fundamentals of medical rehabilitation (MR).**

1.1.1. Basic concepts

1.1.1.1. Scientific bases

1.1.1.2. Medical Rehabilitation as a Clinical Specialty

1.1.1.3. Medical rehabilitation as an academic discipline


1.1.2. History of medical rehabilitation doctrine development

1.1.3. Methodological bases of medical rehabilitation

1.1.3.1. Basic principles

1.1.3.2. Proven Medicine and Rehabilitation

1.1.3.3. Innovative rehabilitation technologies

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

#### 1.1.4. Medical rehabilitation organization

1.1.4.1 Legal basics and peculiarities of medical rehabilitation organization in the Russian Federation: Federal Law of 21.11.2011 № 323-FZ "On the basics of health protection of citizens of the Russian Federation" Art. 40.

Pr-z MH RF №1705n from 29.12.2012. "On the order of medical rehabilitation" (in outpatient and polyclinic conditions, in day hospitals).

Order of the Ministry of Labor of Russia from 03.09.2018 N 572n "On approval of the professional standard" Specialist in Medical Rehabilitation".

1.1.4.2 Basic provisions of medical, social and professional rehabilitation.

1.1.4.3 Structure of the medical rehabilitation department in the polyclinic, hospital, rehabilitation center, health resort complex.

1.1.4.4 Stages of medical rehabilitation.

1.1.4.5 Modern concept of disease consequences on three levels.

1.1.4.6 International Classification of Functioning (ICF - ICF), Disability and Health (WHO, 2007) and its importance in medical rehabilitation

1.1.4.7 Criteria of patient's vital activity parameters of their evaluation.

1.1.4.8 The concept of disability.

1.1.4.9 Rehabilitation diagnosis, rehabilitation potential and rehabilitation prognosis.

Individualized rehabilitation program (IPP). Definition of the concept, goals, principles of implementation of IPD.

1.1.4.10 Methodological approaches to compiling IPR of patients and disabled persons: formation of rehabilitation program, complex application of medical and non-drug technologies: physiotherapy, therapeutic physical training, massage, therapeutic and preventive nutrition, manual therapy and, psychotherapy, reflexotherapy and methods with the use of natural therapeutic factors, as well as the means that adapt the environment to the functional capabilities of the patient and (or) functional capabilities of the patient to the environment, including through the use of medication.

1.1.4.11 Algorithms of compiling IPR and medical rehabilitation: diagnostics of the patient's clinical condition; formation of the purpose of the program rehabilitation measures, assessment of risk factors for rehabilitation measures; factors limiting the implementation of rehabilitation measures; morphological parameters; functional reserves of the organism; state of higher mental functions and emotional sphere; violation of everyday and professional skills; restrictions on activity and participation in private and public life events significant for the patient; environmental factors affecting the outcome rehabilitation process, appointment of means and methods

1.1.4.12 Organization and specifics of the multidisciplinary team.

1.1.4.13 Routing of patients in the process of medical rehabilitation.

1.1.4.13 Methods to evaluate the effectiveness of made-rehabilitation. Activity scales used in madrehabilitation.

1.1.4.14 Contraindications for rehabilitation activities


### **1.2. Basics of physiotherapy.**

1.2.1 Basic provisions in physiotherapy.

1.2.1.1 Basic concepts in physiotherapy.

1.2.1.1.1 Physiotherapy.

1.2.1.1.2 Categories of physiotherapy: therapeutic physical factors, physical method

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

therapies. The method of physiotherapeutic procedure.

1.2.1.1.3 Subject of study

1.2.1.1.4 Physical methods

1.2.1.1.5 The laws of physiotherapy

1.2.1.2 . The basic principles of therapeutic application of physical factors.

1.2.1.2.1 The principle of unity of syndromic-pathogenetic and clinical-functional approaches.

1.2.1.2.2The principle of individual treatment by physical factors.

1.2.1.2.3The principle of the course of treatment by physical factors.

1.2.1.2.4The principle of optimal treatment by physical factors.

1.2.1.2.5The principle of complex treatment with physical factors.

1.2.1.2.6The principle of dynamic treatment by physical factors.

1.2.1.3 General contraindications for physiotherapy.

## **Theme 2.**

### **2.1 Electrotherapy.**

### **2.2 Magnetotherapy.**

(Form of holding - practical training).

**Questions on the topics of the section** (for discussion in the class, for self-study)

**2.1 Electrotherapy.** Therapeutic effect. Therapeutic effects. Indications.

Contraindications. Parameters.

2.1.1. Direct current electrotherapy: galvanization, drug electrophoresis

2.1.2 Pulsed electrotherapy of central exposure: electrosonotherapy, transcranial electrostimulation

2.1.3. Pulsed electrotherapy of peripheral action: diadynamic therapy, short pulse electroanalgesia.

2.1.4. Low frequency electrotherapy: amplipulse therapy, myoelectric stimulation, interference therapy

2.1.5 Mid-frequency electrotherapy: local darsonvalization, ultrathonotherapy

2.1.6 Ultra High Frequency Therapy

2.1.7 Ultra-high frequency electrotherapy: decimetrewave therapy (DMV-therapy), centimetrewave therapy (SMV-therapy), extremely high frequency therapy (EHF-therapy).

**2.2 Magnetotherapy.** Therapeutic effect. Therapeutic effects. Indications.

Contraindications. Parameters.

2.2.1. Transcerebral magnetotherapy.

2.2.2. Pulsed magnetotherapy.

2.2.3 Low frequency magnetic therapy: alternating low frequency electromagnetic field (LFF), pulsating magnetic field (PMP).

2.2.4 High-frequency magnetic fields (MF)

## **Theme 3.**


### **3.1 Phototherapy**

### **3.2 Therapeutic application of factors of mechanical nature.**

### **3.3 Hydrotherapy.**

### **3.4 Thermotherapy.**

**The form of the event is a practical exercise.**

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

**Questions on the topics of the section** (for discussion in the class, for self-study)

**3.1 Phototherapy.** Therapeutic action. Therapeutic effects. Indications. Contraindications. Parameters.

3.1.1 Infrared radiation.

3.1.2 Chromotherapy.

3.1.3 Ultraviolet radiation: Long, Middle, Shortwave. Irradiation of blood with short-wave spectrum of ultraviolet radiation (autotransfusion of irradiated blood - AUFOC).

3.1.4 Laser radiation: red and infrared. Intravenous blood irradiation with laser (FOCK).

**3.2 Therapeutic application of factors of mechanical nature.** Therapeutic effect.

Therapeutic effects. Indications. Contraindications. Parameters.

3.2.1 Therapeutic massage.

3.2.2 Traction therapy.

3.2.3 Vibrotherapy.

3.2.4 Remote shock-wave therapy.

3.2.5 Therapeutic application of ultrasound.

3.2.6 Medicinal Ultrafonophoresis.

3.2.7 Aerionotherapy.

3.2.8 Aerosol-therapy. Modern equipment. Medicinal substances used for aerosol therapy.

3.2.9 Haloaerosol therapy.

3.2.10 Aerophytotherapy.

**3.3 Hydrotherapy.** Therapeutic action. Therapeutic effects. Indications.

Contraindications. Parameters.

3.3.1 Showers: low, medium and high pressure; indifferent, warm and hot shower, contrast shower, underwater shower massage.

3.3.2 Baths: fresh baths (warm, cold), contrast baths. Aromatic baths. Gas baths.

3.3.3 Colonhydrotherapy.

3.3.4 Baths: steam bath, dry air bath (sauna).

**3.4 Thermotherapy.** Therapeutic action. Therapeutic effects. Indications.

Contraindications. Parameters.

3.4.1 Thermotherapy: paraffin-ozokeritotherapy.

3.4.2 Cryotherapy: water-containing cryoagents: ice cubes, cryopacks, cryoapplicators, hypothermal thermal pads; cold metal junction of thermoelectric contact of apparatus, gases or their mixtures (chloroethyl, carbon dioxide, nitrogen and air), cold pencils. General cryotherapy (extreme cryotherapy).

**Theme 4.**

**4.1 Spa therapy.**

**4.2 Medical rehabilitation in the structure of sanatorium and spa care.**


**4.3 Manual therapy.**

**4.4 Therapeutic nutrition.**

The form of the event is a practical exercise.

**Questions on the topics of the section** (for discussion in the class, for self-study)

**4.1 Spa therapy.** Therapeutic action. Therapeutic effects. Indications.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

Contraindications. Options.

4.1.1 Climatotherapy: aerotherapy, speleotherapy, air baths, heliotherapy, thalassotherapy.

4.1.2 Balneotherapy. Mineral waters for outdoor use: sodium chloride baths, iodine-bromine baths, mineral and gas baths, carbon dioxide baths, hydrogen sulphide baths, radon baths. Drinking mineral waters: total mineralization, ionic composition and the presence of biologically active components, natural dining rooms, medical-dining room and therapeutic mineral waters. Chemical composition and physical properties of mineral water by the formula Kurlov M: G. Methods of reception of mineral waters.

4.1.3 Peloidotherapy. Classification of therapeutic muds by origin of sulfide and silt, sapropel, peat, seamy muds.

#### **4.2 Medical rehabilitation in the structure of sanatorium and spa care.**

4.2.1 Sanatorium and spa treatment.

4.2.1.1 Definition of sanatorium and spa treatment. The procedure for organizing sanatorium and spa treatment

4.2.1.2 Categories of citizens referred to sanatorium and spa treatment

4.2.1.3 Types of spa organizations: balneological clinic, mud cure clinic, health resort polyclinic, health resort for children, including children with parents, health resort prevention, health camp year-round.

4.2.1.4 Sanatorium, as the main type of therapeutic and preventive organization at the resort. Medical profile of the sanatoriums

4.2.1.5 Principles of work of the sanatorium and resort organization. Regimes of therapeutic and health-improving activities in the spa organization: gentle, gentle-training and training, their content.

4.2.1.6 Selection and referral of patients to sanatorium treatment, documentation.

4.2.2 Medical rehabilitation at resorts.

4.2.2.1 Main provisions.

4.2.2.2. Rehabilitation programs in sanatoriums, as forms of treatment in specialized (rehabilitation) departments of sanatoriums after inpatient treatment of patients with disabilities on free vouchers.

4.2.2.3. The main tasks of medical rehabilitation in the sanatorium.

4.2.2.4 Procedure for issuing vouchers for treatment of patients

4.2.2.5. Documents when sent for treatment (rehabilitation) in a sanatorium, which are issued to the patient.

4.2.2.6. The list of diseases, after which patients are sent for treatment in rehabilitation departments of sanatoriums at the expense of social insurance.

#### **4.3 Manual therapy.**

4.3.1 Basic concepts and principles of manual therapy.


4.3.2 Indications and contraindications to prescribe manual therapy.

4.3.3 Parameters and methods of treatment in manual therapy: massage movements, mobilization; manipulation.

4.3.4 Myo-fascial release.

#### **4.4 Therapeutic nutrition.**

4.4.1 Basics of therapeutic nutrition

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

- 4.4.1.1 Law of energy adequacy of nutrition, law of quality (plastic) 4
- 4.4.1.2 The law of enzymatic activity, the law of biotic adequacy, the law of adherence to a meal regime.
- 4.4.2 Assessment of nutritional status and determination of nutritional support needs
- 4.4.2.1 Indicators of Complex Nutrition Assessment of the Ministry of Health and Social Development of Russia № 330 of 05.08.2003.
- 4.4.2.2 Criteria of protein-energetic insufficiency: mild, medium, severe degree of insufficiency
- 4.4.2.3 Medical nutrition in medical rehabilitation programs.
- 4.4.2.4 Standard Diet, Power Mode

## **Theme 5.**

### **5.1 Reflexotherapy.**

### **5.2 Psychological rehabilitation.**

### **5.3 Medical supervision in medical rehabilitation. Form of conducting - a practical exercise.**

**Questions on the topics of the section** (for discussion in the class, for self-study)

### **5.1 Reflexotherapy.**

#### 5.1.1 Basic concepts.

5.1.1.1 Modern ideas about the mechanisms of action of reflexotherapy.

5.1.1.2 Notions of Meridians and Biologically Active Points (BAT).

5.1.1.3 Ancient Chinese concept of Chen-ju therapy . BAT Classification. Five standard points on the meridian, the principles of their use, the principles of making a reflexive prescription.

5.1.1.4 Modern methods of reflexotherapy. Physiopuncture. Therapeutic action.

Therapeutic effects. Indications. Contraindications. Parameters .

5.1.1.5 Computer electric pulse scanning.

### **5.2 Psychological rehabilitation.**

#### 5.2.1 Basic concepts and principles

##### 5.2.1.1 Psychological Correction

5.2.1.2 The main tasks of psychological rehabilitation.

5.2.1.3 Basic principles of psychological rehabilitation. Therapeutic effects. Indications. Contraindications.

5.2.1.4 Methods of psychological rehabilitation.

5.2.1.5 Traditional methods. Apitherapy. Ampelotherapy, Hirudotherapy.

Psammotherapy. Oenotherapy. Phytotherapy .

### **5.3 Medical supervision in medical rehabilitation.**


#### 5.3.1 Basic concepts.

5.3.1.1 Aims and objectives of medical control

5.3.1.2 Types of medical control their content.

5.3.1.3 Diagnostics of the patient's physical development and functional state.



Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

- 5.3.2.2 Features of the choice of physical activity mode.
- 5.3.2.2.1 Test 6 minute walk
- 5.3.2.2.2 Evaluation of the patient on the Borg scale.
- 5.3.2.2.3 Heart rate control. Maximum allowable Heart Rate during exercise depending on age. AD Dynamics during Exercise
- 5.3.2.2.4 Estimation of load value by dynamics of body weight
- 5.3.2.2.5 Sample Martinet. Types of reactions to physical activity based on sample results
- 5.3.2.2.6 Sub-maximum ergometer bicycle test
- 5.3.2.2.7 Test recommended by WHO to determine the physical performance of athletes and athletes PWC170.
- 5.3.2.2.8 Determination of Respiratory Motion Frequency
- 5.3.2.2.9 Determination of lung vital capacity (LVC).
- 5.3.2.2.10 Samples with breath hold. Sample of the Strange. Sample Genchi
- 5.3.2.2.11 Carpal dynamometry
- 5.3.2.2.12 Drawing up the physiological curve of the lesson
- 5.3.2.2.13 Estimation scales for the integral assessment of the patient's condition. Standard: severity assessments for acute and chronic diseases (APACHE III), quantitative pain scale (NPRS), physiological index (PI), respiratory index (PI), respiratory index (PI). index (ResI).
- 5.3.2.2.14 The importance of medical supervision in medical rehabilitation.

## **Theme 6.**

### **6.1 Therapeutic physical training (PTC).**

#### **6.2 Wellness methods**

#### **6.3 Rehabilitation of disabled people.**

The form of the event is a practical exercise.


**Questions on the topics of the section** (for discussion in the class, for self-study)

### **6.1 Therapeutic physical training (TMA).**

6.1. Main provisions and principles of therapeutic physical training.

6.1.1 Main provisions. Organization of LFK in the Russian Federation: Prospect of the Ministry of Health of Russia from 20.08.2001 № 337 "About measures for further development and improvement of sports medicine and therapeutic physical training". The subject of the LFK. The object of study of the LFK. Medical documentation in the departments, offices of the LFK (f. 0.42/u).

6.1.2. Principles of therapeutic physical training. Principles of therapeutic use of physical exercises. The principle of active participation of the patient in physical training. The principle of individuality of physical activity. Principle of regularity of physical exercises. The principle of adequacy of physical activity. The principle of gradualness and sequence of increase of physical activity.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

## 6.2. Methods of therapeutic physical training.

### 6.2.1 Kinesitherapy.

6.2.1.1 Methodology of kinesotherapy. Types of exercises. Mechanisms of action of physical exercises on the organism: formation of integrated motor reflexes, correction of the central nervous system tone, formation of temporary and permanent compensation, development of new compensatory reactions, stimulating action of physical exercises on various systems of the organism, restoration of trophics, increase of reactivity and resistance to pathogenic factors of the environment. Therapeutic effects: Tonic, trophostimulating, reconstructive, compensatory. Indications for kinesitherapy. Contraindications. Dosage of kinesitherapy. Classification of physical exercises.

6.2.1.2 Variety of forms of kinesitherapy. Proprioceptive Neuromuscular Facilitation (PNF, Kabat method). Method Bobat. Voith method. Passive suspension systems. Active stretch-systems.

6.2.1.3 Therapeutic gymnastics as a form of kinesotherapy. The method of performing therapeutic gymnastics. Introduction, main and final parts. The curve of physiological load during therapeutic gymnastics. Types of exercises used in water and final part of LH complex.

6.2.1.4 Morning gymnastics as a form of kinesotherapy. Goal and objectives. Indicative set of exercises in the morning gymnastics.

6.2.1.5 Therapeutic motor mode as a form of kinesotherapy. Therapeutic effects: training, corrective, toning, compensatory. Motor modes in hospital, their content. Criteria for transfer from one motor regime to another. Functional tests performed during transfer from one motor mode to another. Therapeutic motor modes in sanatoria.

6.2.2. Therapeutic walking. Types of therapeutic walking. Dosed physical activity during normal and Nordic walking. Indications, contraindications


6.2.3 Mechanokinesitherapy. Movement on motorized simulators. Therapeutic effects. Indications. Contraindications. Parameters.

6.2.4 Bio-controlled mechanokinesitherapy. Therapeutic effects. Locomotor-corrective, tonic, metabolic. Indications. Contraindications. Computerized training simulators (HUBER, IMOOVE, etc.) Features of training methods. Indications. Contraindications.

6.2.5 Hydrokinesitherapy. Therapeutic effects. Tropho-, myo-stimulating, toning, locomotor-correcting, actoprotective. Indications. Contraindications. Parameters. Therapeutic swimming. Aqua-gymnastics. Aqua-step. Aquafitness, dosing procedures. Indications, contraindications.

6.2.6 Robotic mechanotherapy. Therapeutic effects. Locomotor-correcting, tropho- and myo-stimulating. Indications. Contraindications. Parameters. Robots classified by principle of action: robots and end effects (Mit-Manus, ARM Guide, MIME), exoskeletons: robots for walking training (Gait trainer GT II). Erigo vertical robot, ANYMOV vertical robot, Lokomat computerized robot and VR robots: CAREN robot. Robots-compensators CON-TREX, Biodex. The principles of dosing physical activity in robotics.

6.2.7 Ergotherapy. Mechanisms of action. Parameters: patient occupation. Types of employment. Strategies of ergotherapy: - developing (recovery).

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

broken function) and compensatory (replacement of the lost function). Labor operations. Therapeutic effects. Motor-corrective, tonic, psycho-stimulating, actoprotective. Evaluation of the efficiency of the course of procedures on the International Functioning Classification Scales - ICF. Indications and contraindications.

6.2.8 Sports exercises. Therapeutic effects. Motor-corrective, psycho-stimulating. Parameters. Types: Skiing. Medium and heavy load mode. Swimming. Mode of medium and heavy load. Swimming breaststroke or any other way without taking your hands out of the water. Volleyball. Big tennis. Table tennis. Badminton.

6.2.9 Orthezotherapy. Orthezotherapy tasks. Therapeutic effects. Locomotor-correcting, myotonic, myorelaxing. Indications. Contraindications. Parameters. Types of orthoses. Static orthoses (passive tires) Dynamic orthoses. Functional orthoses. Active-passive tires. Bio-controlled tires in rehabilitation. Robotic orthoses for joints. Date of use of orthoses.

## **6.2. Wellness methods**

### 6.2.1 Health Assessment

6.2.1.1 Health and its diagnosis. Energy potential assessment by IPC indicator (Maximum oxygen consumption). Kerdo vegetative index (Autonomic Equilibrium Coefficient by A.M. Wayne,).

6.2.1.2 Somatic health and methods to assess the functional and morphological properties of the body. Growth weight factor (Kettle index). Life index. Double work. Sample of Martine-Kushelevsky. Physical performance of a person. Calculation of the IPC.

6.2.2 Wellness training. Healthy physical activity and adaptation mechanisms.

#### 6.2.2.1 Physical activity parameters

6.2.2.2 Structure of the health training. Phases of training. Frequency of training. General endurance training, dosing.

6.2.2.3. Wellness training in modern wellness programs. Aerobics (rhythmic gymnastics). Step Aerobics (using step-platform), fitball aerobics (aerobics on fitballs). Fitness (aerobics on fitballs). Wellness.

#### 6.2.3. Healthy physical methods.

6.2.3.1 Methods. Static Stimulants. Protective. Actoprotective methods

6.2.3.2 Methods. Non-specialty-specific

## **6.3 Rehabilitation of disabled people.**

6.3.1 The basics of rehabilitation assistance to disabled people.


6.3.1.1 Three-dimensional concept of evaluation of disease consequences (according to WHO recommendations, 1989).

6.3.1.2 The tasks of medical and social expertise.

6.3.1.3 The main directions of rehabilitation of disabled people. "Medical and social rehabilitation". Professional rehabilitation. Social rehabilitation

6.3.2 Individual rehabilitation program for a disabled person.

6.3.2.1 A complex of optimal rehabilitation measures for a disabled person in an individual program. The form of the individual program of rehabilitation of the disabled, Ministry of Health and Social Development of Russia from 04.08.2008 № 379n. Sections of IPR.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

6.3.2.2 Evaluation of the results of the rehabilitation conducted.

6.3.3 Technical means in rehabilitation of disabled people.

6.3.3.1 A new socially oriented model of life restrictions implemented by WHO.

6.3.3.2 TCP Main Feature

## **Section 2: Medical Rehabilitation in Clinical Practice.**

### **Theme 7.**

#### **7.1 Medrehabilitation in cardiology.**

#### **7.2 Medrehabilitation in pulmonology.**

(Form of holding - practical training).

**Questions on the topics of the section** (for discussion in the class, for self-study).

#### **7.1 Medrehabilitation in cardiology.**

7.1.1 A model of cardio rehabilitation in Russia.

7.1.2 Standard of Medical Care for Patients with Acute Myocardial Infarction Pr-z of the Ministry of Health and Social Development of the Russian Federation of 06.09.2005, 1 548.

7.1.3 Groups of patients who are shown medical rehabilitation.

7.1.4 Steps of activity in patients with myocardial infarction in hospital conditions.

7.1.5 Steps of activity in patients with myocardial infarction in the outpatient clinic, the resort.

7.1.6 Tasks of madrehabilitation at myocardial infarction. Kinesiotherapy. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Contraindications. Evaluation of the effectiveness.

7.1.7 Tasks of made-rehabilitation at ISF.

7.1.8 Characteristics of functional classes of patients with CHD. Kinesiotherapy. Dosage of physical activity, depending on the functional class. Regimes of therapeutic swimming. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Evaluation of the effectiveness. Contraindications.

7.1.9 Tasks of rehabilitation of operated patients with CHD. Condition after cardiac revascularization. Kinesiotherapy. The principles of dosing physical activity. Physical treatment methods. Psychotherapy. Therapeutic nutrition. Contraindications. Evaluation of the effectiveness.


7.1.10 Tasks of rehabilitation in hypertension. Standards of primary health care for primary arterial hypertension (hypertension) approved by Order of the Ministry of Health of the Russian Federation from 9.11.202, № 708n. Kinesiotherapy, dosing of physical activity... Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Contraindications. Evaluation of the effectiveness.

#### **7.2 Medrehabilitation in pulmonology.**


7.2.1 Fundamentals of pulmonary rehabilitation in the Russian Federation, The procedure for providing medical care to patients in the profile of "pulmonology" approved by Order of the Ministry of Health of the Russian Federation from 15.11.2012. №916н.

7.2.2 Rehabilitation tasks for pneumonia. Kinesiotherapy. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Contraindications. Evaluation of the effectiveness.

7.2.3 Goal and objectives of madrehabilitation of patients with COPD. Standards of medical care for patients with COPD (chronic obstructive pulmonary disease). Stages of development of chronic obstructive pulmonary disease. System of functional classes of patients with COPD.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

Physical methods of treatment. Kinesiotherapy. Psychotherapy. Medical nutrition.  
.Contraindications. Criteria for effectiveness.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

7.2.4 Rehabilitation tasks for patients with bronchial asthma. Kinesiotherapy, principles of dosage of physical activity. Special breathing exercises. Psychotherapy. Therapeutic nutrition. Criteria for effectiveness. Contraindications.

## **Theme 8.**

### **8.1 Medrehabilitation in gastroenterology and endocrinology.**

#### **8.2 Medrehabilitation in oncology.**

#### **8.3 Medrehabilitation for infectious diseases.**

#### **8.4 Medrehabilitation in neurology.**

(Form of holding - practical training).

**Questions on the topics of the section** (for discussion in the class, for independent .

### **8.1 Medrehabilitation in gastroenterology and endocrinology.**

8.1.1 Basics of madrehabilitation in gastroenterology. Tasks of madrehabilitation in gastroenterology. The order of rendering medical aid to the population, Prez of Ministry of Health of the Russian Federation from 12.11.2012г, 906H. The order of rendering medical aid to the population by profile "gastroenterology"

8.1.2 Medical rehabilitation in case of the operated stomach and gallbladder disease. Physical methods of treatment. Kinesiotherapy. Psychotherapy. Therapeutic nutrition.

8.1.3 Basics of madrehabilitation in endocrinology. Tasks of madrehabilitation in endocrinology. Pr-z of the Ministry of Health of the Russian Federation № 899n from 12.11.2012. The procedure for providing medical care to adults in the field of "endocrinology".

8.1.4 Diabetes mellitus, major syndromes. Indications and contraindications for prescription of madrehabilitation. Physical methods of treatment. Kinesiotherapy. Psychotherapy. Therapeutic nutrition. Criteria for effectiveness.

8.1.5 The basics of madrehabilitation in oncology. Kinesiotherapy. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Social rehabilitation. Efficacy criteria.

8.1.6 Basics of madrehabilitation for infectious diseases.

8.1.6.1 Tasks Madrehabilitation for viral hepatitis. Kinesiotherapy. Psychotherapy. Therapeutic nutrition. Efficacy criteria.


8.1.6.2 Tasks of made-rehabilitation for tuberculosis. The procedure of providing medical assistance to the population, Pr-z of the Ministry of Health of the Russian Federation from 15.11.2012г, 932H. on the approval of the Procedure for the provision of medical care to patients with tuberculosis. Basic syndromes in tuberculosis. Physical methods of treatment. Kinesiotherapy. Psychotherapy. Therapeutic nutrition. Efficacy criteria.

8.1.7 Medrehabilitation in neurology. The world model of neurorehabilitation. Organization of neurorehabilitation in the Russian Federation: Prez MH RF № 926n. and № 928n. "The procedure for providing medical care to adults in case of diseases of the nervous system and the provision of medical care to patients with acute cerebral blood circulation disorders. Groups of patients shown for medical rehabilitation. Contraindications for made-rehabilitation.

8.1.8 Medical rehabilitation in case of acute cerebral blood circulation disorder (ACBD). Pathophysiological features of OSMK. Tasks of medical rehabilitation. Treatment with position. Early verticalization. Correction of swallowing disorders. Ontogenetic kinesitherapy. Kinesitherapy. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Efficacy criteria.

8.1.9 Medical rehabilitation for vertebrogenous diseases of peripheral nervous system. Pathophysiological features of peripheral nervous system diseases.



Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

systems. Major disease syndromes. Tasks of rehabilitation. Kinesitherapy. Physical methods of treatment. Reflexotherapy. Manual therapy. Psychotherapy. Therapeutic nutrition. Contraindications for madrehabilitation. Criteria for effectiveness. Contraindications for madrehabilitation.

## **Theme 9.**

### **9.1 Medical rehabilitation in traumatology and orthopedics.**

#### **9.2 Medical rehabilitation in surgery.**

#### **9.3 Medrehabilitation in obstetrics and gynecology.**

#### **9.4 Medical Rehabilitation in Pediatrics**

(Form of holding - practical training).

**Questions on the topics of the section** (for discussion in the class, for self-study).

### **9.1 Medical rehabilitation in traumatology and orthopedics.**

9.1.1 Basics of medical rehabilitation in traumatology and orthopedics. The procedure for providing medical care in the field of traumatology and orthopedics. Pr-z Mz RF from 12.11.2012g. № 901n. On approval of the order. Rendering medical care to the population by profile.

"Traumatology and Orthopedics": Indications and contraindications for the appointment of medical rehabilitation. Pathophysiological basis of injuries of the bone-muscular system. Methods of therapeutic process in case of musculoskeletal system injuries. Syndromes formed in the post-traumatic and postoperative periods.

9.1.2 Tasks of madrehabilitation connected with damage or operation of the support and motor apparatus. Features of rehabilitation in conservative and surgical methods of treatment of injuries and deformities of the musculoskeletal system. Physical methods of treatment. Kinesiotherapy. Psychotherapy. Therapeutic nutrition. Social rehabilitation. Criteria for effectiveness. Contraindications.

### **9.2 Medical rehabilitation in surgery.**

9.2.1 Basics of medical rehabilitation in surgery. The procedure for providing medical assistance to the population in the field of "surgery". Pr-z Mz RF from 15.11.2012. Pathophysiological features of surgical trauma. Indications and contraindications for prescription of medical rehabilitation.

9.2.2 Features of madrehabilitation during lung operations. Kinesiotherapy. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Social rehabilitation. Criteria of effectiveness. Contraindications.


9.2.3 Features of madrehabilitation during operations on abdominal cavity organs. Kinesiotherapy. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Social rehabilitation. Criteria for effectiveness. Contraindications.

### **9.3 Medrehabilitation in obstetrics and gynecology.**

9.3.1 The basics of medical rehabilitation in obstetrics and gynecology. The procedure for providing medical care in the field of "obstetrics and gynecology". Pr-z Mz RF from 01.11.2012. № 572H. Indications and contraindications for prescription of medical rehabilitation. The most common extragenital diseases in pregnancy.

9.3.2 Features of madrehabilitation in pregnancy with extragenital and obstetric pathology: pregnant women with arterial hypertension; pregnant women with heart defects; pregnant women with kidney disease; pregnant women with diabetes; stress urinary incontinence in pregnant women. Individual rehabilitation programs. Criteria for effectiveness in pregnancy with extragenital and obstetric pathology.

9.3.3 Threat of pregnancy termination. Individual rehabilitation programs.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

Criteria for effectiveness.

9.3.4 Features of madrehabilitation for inflammatory diseases of the female genitalia. Pathophysiological bases of inflammatory processes in female genitals. Indications and contraindications for madrehabilitation. Kinesiotherapy. Physical methods of treatment. Psychotherapy. Therapeutic nutrition. Criteria for effectiveness.

#### **9.4 Medical Rehabilitation in Pediatrics**

9.4.1 Medical rehabilitation in pediatrics. The procedure for providing medical care in the profile of paediatrics. Pr-z Mz RF from 16.04.2012. № 366H. "On approval of the procedure for the provision of pediatric care. Indications and contraindications for the appointment of medical rehabilitation. Features of physiology of the child's body.

9.4.2 Psychotherapeutic preparation of the child to methods of madrehabilitation.

Features of physiotherapy in childhood.

9.4.3 Leading medical rehabilitation equipment in children with severe deformities of the bone and muscular system due to predominantly static deformities (flat feet, posture disorders, scoliosis, muscle imbalance, and muscle hypertonicity).

9.4.4 Leading madrehabilitation facilities for children with respiratory diseases.

9.4.5 Leading madrehabilitation facilities for children with gastrointestinal diseases

9.4.6 Age terms of prescription of physical rehabilitation methods.


**7. LABORATOR PRACTICUM** - This type of work is not provided for by the UP.

**8. TEMATIC OF CURSE, CONTROL WORKS** - *This type of work is not provided for by the TOR*

#### **9. REPERTOIRE SUBJECT**

1. The basics of medical rehabilitation.
2. Medico-social and professional rehabilitation
3. International Classification of Functioning, Disability and Health (ICF) as the basis for the work of a multidisciplinary team
4. Contents of the Order of the Ministry of Health of the Russian Federation №1705n from 29.12.2012. "On the procedure for medical rehabilitation" (in outpatient and polyclinic conditions, in day hospitals).
5. Contents of the Order of the Ministry of Labor of Russia from 03.09.2018 N 572n "On approval of the professional standard "Specialist in medical rehabilitation".
6. Basics of physiotherapy.
7. Constant and pulsed currents in physiotherapy
8. Ultra-high frequency and ultra-high frequency therapy in physiotherapy
9. Magnetotherapy.
10. Infrared, chromotherapy and ultraviolet irradiation in physiotherapy
11. Laser therapy.
12. Therapeutic massage
13. Aerosol therapy haloaerosol therapy, aerophytotherapy.
14. Hydrotherapy.
15. Thermootherapy.
16. Spa therapy.
17. Medical rehabilitation in the structure of sanatorium and spa care.




Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

18. Manual therapy.
19. Therapeutic nutrition.
20. Basics of reflexotherapy.
21. Wellness methods
22. Therapeutic physical training (PTC) in the system of medical rehabilitation
23. Rehabilitation of disabled people.
24. Kinesotherapy in medical rehabilitation.
25. Medrehabilitation in cardiology.
26. Medrehabilitation in pulmonology.
27. Medrehabilitation in gastroenterology and endocrinology.
28. Medrehabilitation for infectious diseases.
29. Medrehabilitation in neurology.
30. Medical rehabilitation in traumatology and orthopedics.
31. Medical rehabilitation in surgery.
32. Medrehabilitation in obstetrics and gynecology.
33. Medical Rehabilitation in Pediatrics


**Requirements for writing an abstract:** the abstract should reflect the set goals and objectives, as well as reveal the issue under study, combining capacity and conciseness. The volume of the abstract is 10-12 sheets of typewritten text, 1-2 sheets - introduction, 8-10 - main material, 1-2 - conclusion. The list of literature is given in accordance with the standard requirements.

## 9. LIST OF QUESTIONS TO BE TAKEN OFFSETS


1. The concept of rehabilitation and medical rehabilitation. Indications and contraindications to the prescription of medical rehabilitation equipment. Policy documents on providing rehabilitation assistance to patients: Prez MH RF № 1705n from 29.12.2012. "On the procedure of medical rehabilitation. (in outpatient and polyclinic conditions, in day hospitals).
2. Conducting rehabilitation activities at various stages of the rehabilitation process. List the factors that limit the implementation of rehabilitation measures; Form the purpose and objectives of rehabilitation measures.
3. Formation of a rehabilitation program, integrated use of drug and non-medical therapy. Evaluation of the effectiveness of rehabilitation measures and their prognosis.
4. Research and evaluation of daily activities. Scale of functional independence (FIM), scale Bartel, Katz. Concept of functional class. Organization and operation principles of a multidisciplinary team.
5. International classification of operation, restrictions Life and Health (MKF). The structure of the classification, its importance in the work of the multidisciplinary team.
6. Principles of development of an individual rehabilitation program (IPP). Evaluation of rehabilitation measures efficiency.
7. Modern means and technologies of LFK. Classification of physical

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


- exercises used in LFK. Mechanisms of therapeutic effect of movements. Principles of prescription of LFC Indications and contraindications for prescription of LFC products.
8. Forms and methods of conducting classes LFK, the principles of dosing physical exercises in LFK classes Schemes of building complexes of therapeutic gymnastics Motor modes at various stages of rehabilitation.
  9. Organizational structure of LFK departments and offices. Medical documentation of the offices of the LFK. (f.0.42/u). The concept of the subject of reflexotherapy (RT). The mechanisms of action of reflexotherapy. Classification of the methods of classical reflexotherapy Classification of physiopuncture methods of reflexotherapy.
  10. Theoretical foundations of physiotherapy. Definition and subject of study of physiotherapy. Classification of physical factors. Physiological mechanisms of physical factors action. Theoretical foundations of the influence of physical factors on the body in the light of the latest achievements in biophysics, biochemistry and physiology.
  11. The concept of local, reflex-segmentary and general reaction of the body to the action of physical factors. Basic principles of therapeutic application of physical factors. General contraindications to the use of physiotherapy.
  12. Peculiarities of physiotherapy application in elderly people. Peculiarities of physiotherapy application in children.
  13. Organization of physiotherapeutic service. Organization of work of the physiotherapy department, office. Safety technology in carrying out physiotherapeutic procedures. Medical documentation of physiotherapy offices, departments. Forms of accounting documentation. Ф. 0/44.
  14. Galvanization. Characterization and physiological effect of direct current. Methods of treatment. Therapeutic effects. Indications and contraindications. Modern devices and treatment parameters.
  15. Medicinal electrophoresis. Principles of administration of medicinal substances into the body by means of direct current. Therapeutic effects of drug electrophoresis. Indications and contraindications. Features of the method of drug electrophoresis. Mechanism of action. Therapeutic effects. Indications and contraindications. Technique and methods of procedures. Parameters and devices. Name the features and advantages of the method of drug electrophoresis over other methods of administration of drugs.
  16. Pulsed electrotherapy of peripheral action, general characteristics. Diadynamotherapy. Physical characteristics and mechanism of action applied current. Therapeutic effects. Indications and contraindications. Technique and method of procedures execution. Parameters and devices.
  17. Amplipulsterapia. Physical characteristics and mechanism of action applied current. Therapeutic effects. Indications and contraindications. Technique and method of procedures execution. Parameters and devices.
  18. Average frequency electrotherapy with AC high voltage: local darsonvalization. Physical characteristics of the current. Mechanism of action. Therapeutic effects. Indications and contraindications. Technique and method of procedures execution. Parameters and devices.
  19. Variable electric field of ultra-high frequency: UHF - therapy. Physical characteristics of the electric field used for therapeutic purposes.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

- component of the electromagnetic field. Oscillatory and thermal components of the mechanism of healing effect of UHF vibrations, regularities of energy distribution in tissues,
20. The main therapeutic effects of UHF - therapy. Indications and contraindications, devices, parameters of therapeutic effect. Methods of procedures depending on the stage of the pathological process, dosing procedures.
  21. Electromagnetic fields. Microwave ultra-high frequency therapy. Name the physical characteristics of DMV and SMV therapy methods. What is the reason for the penetration of microwave influences? Which method is larger - DMV or SMV therapy? Why? In what tissues is the maximum heat release in microwave therapy? Justify the curative effects of microwave and DMV therapy. Name indications and contraindications for their prescription.
  22. The main therapeutic effects of DMV therapy, indications and contraindications, parameters of therapeutic effect, methods of procedures depending on the stage of the pathological process.
  23. Centimeter-wave, millimeter-wave therapy. Physical characteristics of acting factors. Oscillatory and thermal components of the mechanism of therapeutic action of microwave - oscillations. The main therapeutic effects of centimeter-wave, millimeter-wave therapy, parameters of therapeutic effect, methods of procedures depending on the stage of the pathological process. Name indications and contraindications for their prescription.
  24. Magnetic fields: Variable low frequency magnetic field: PMP therapy. Mechanisms of formation of the main therapeutic effects, indications and contraindications, devices, parameters of therapeutic effects, the main types of used low-frequency magnetic fields. Methods of treatment procedures and choice of treatment mode, dosing of variable low-frequency magnetic fields ? What is the influence of low-frequency magnetic fields on liquid crystal structures of the membrane and cytoplasm of cells? Explain the significance of changes in these structures for cell function.
  25. High frequency magnetic therapy: inductothermy. Mechanisms of heat formation in the body under the action of high and ultra-high frequency magnetic field oscillations, energy distribution patterns in tissues. The main therapeutic effects, indications and contraindications, devices, parameters of therapeutic effect, methods of procedures depending on the stage of the pathological process, dosing. Physical characteristics of the fields. Mechanism of action. Therapeutic effects. Methods of treatment. Parameters. Indications and contraindications. Apparatuses.
  26. Ultraviolet irradiation for therapeutic purposes. The main types of ultraviolet radiation (long-medium and shortwave) their brief characteristics. Physical and chemical effects of UVB fabrics. Mechanisms of biological and therapeutic and preventive action, indications and contraindications. Parameters of therapeutic effect, devices for UVO.
  27. Methods and basic schemes of general UFO. PUVA - therapy. Methods of treatment. UVO of blood. Principles of dosimetry of UVO, biodose, types of biodosimeters. Compatibility with other types of light therapy and electrotherapy.
  28. Application with therapeutic purpose of laser irradiation. Laser therapy. Physical characteristics of monochromatic, coherent radiation. Physico- .

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


- chemical effects of laser radiation on biological tissues. Laws of energy distribution in tissues at laser radiation action and basic mechanisms of its biological action. The main biological effects, indications and contraindications, devices, parameters of therapeutic action, methods of procedures their dosing and compatibility with other methods of physiotherapy.
29. Medicinal Ultrafonophoresis, the main features and benefits of introducing drugs with ultrasound, dosing procedures.
  30. Therapeutic massage. Types of massage. Anatomical foundations and mechanisms of the physiological action of massage, indications, contraindications, rules of massage, characteristics of the main techniques, performance technique.
  31. Aeroiono-, aerosol-therapy. Physical characteristics of the applied factors. Mechanisms of therapeutic action. Therapeutic effects. Technique and methods of procedures. Indications and contraindications for use Medicinal substances used in aerosol therapy.
  32. Hydrotherapy. Showers, baths, baths. Characteristics of methods, therapeutic effects, indications, contraindications for prescription, dosing methods, treatment methods. Give a classification of water procedures depending on the temperature of the water used. Give a brief description of the main types of shower procedures.
  33. Balneotherapy. Definition and classification of mineral waters. Theories of mineral waters origin, their composition. General principles of therapeutic use of mineralized water.
  34. What is the mechanism of action of baths with sodium chloride? Justify the cardiotropic action of carbon dioxide baths. What is its direction? Explain the value of water temperature for vascular effects of carbon dioxide baths.
  35. Mechanism of action of radon baths. What factors are the therapeutic effects of radon baths? List the main indications for prescribing radon baths.
  36. Application of heat for therapeutic purposes. Thermotherapy. Physiological foundations of therapeutic use of coolants. Paraffinotherapy. Physical properties of paraffin, mechanism of therapeutic action, indications and contraindications, methods of procedures, dosing principles, compatibility with other methods of physiotherapy, safety during procedures.
  37. Peloidotherapy - therapeutic muds, definition, composition, physical and chemical properties, classification. Origin of therapeutic muds. Physical and chemical factors of curative action of a mud - mechanical, thermal, chemical and biological. Mechanisms of physiological action and medical effects of peloidotherapy. Indications and contraindications for mud treatment.
  38. Climatotherapy. The main methods of climatotherapy. Indications and contraindications for use. Balneotherapy. The basic methods of balneotherapy. Indications and contraindications for prescription.
  39. List the main types of sanatorium and resort facilities. Is it possible to locate the sanatoriums outside the resort? What is the reason for the specialization of sanatoriums?
  40. Integrated rehabilitation programs for patients with myocardial infarction at the inpatient stage of rehabilitation.
  41. Comprehensive rehabilitation programs for myocardial infarction patients at the sanatorium stage of rehabilitation.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		


42. Comprehensive rehabilitation programs for acute and chronic pneumonia patients at the polyclinic stage of rehabilitation
43. Comprehensive rehabilitation programs for patients with bronchial asthma, bronchoectatic disease.
44. Comprehensive rehabilitation programs for patients with spinal discomfort, flat feet
45. Comprehensive rehabilitation programs for spinal osteochondrosis patients
46. Comprehensive rehabilitation programs for patients with fractures of limbs
47. Comprehensive rehabilitation programs for ischemic stroke patients
48. Comprehensive rehabilitation programs for diabetes mellitus patients.
49. Comprehensive rehabilitation programs for patients with lung operations
50. Comprehensive rehabilitation programmes for patients with chronic inflammatory diseases of the genitals in women
51. Methods of conducting the sample of the rod, Genche, orthostatic sample. Determination of physical performance by Harvard step test. The basic principles of evaluation of the FR and its relationship with health indicators.
52. Types of health training. Clinical effects of wellness training.
53. Characterization of low, medium, high rehabilitation potential. Rehabilitation forecast. Evaluation of the effectiveness of rehabilitation measures on a scale of FIM (Functional Independence Scale).
54. Justification of rehabilitation means and methods. Criteria of disability.
55. Basic principles of medical rehabilitation. Indications and contraindications.
56. Categories of life activities. Types of disabling effects of the disease. Basic concepts in rehabilitation: stages of rehabilitation, rehabilitation diagnosis, rehabilitation potential, rehabilitation prognosis, functional classes.
57. Diadynamotherapy. Therapeutic effects, indications, contraindications to the prescription technique and methods of procedures.
58. Scheme of the complex therapeutic gymnastics. The principles of dosing of physical exercises. Indications and contraindications for prescription of LFK.
59. Classification of kinesotherapy means. Characteristics of kinesotherapy means.
60. External and internal application of mineral waters. Method of treatment, indications and contraindications.

## 10. TRAINEES' INDEPENDENT WORK


Full-time education form

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

<b>Section and theme names</b>	<b>Type of independent work</b> <i>(elaboration of training material, problem solving, essay, report, control work, preparation for passing the test, exam, etc.).</i>	<b>Volume in hours</b>	<b>Form of control</b> <i>(checking of problem solving, abstract, etc.).</i>


Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

<b>Section #1. The basics of medical rehabilitation. Methods and means medical rehabilitation.</b>			
<b>Theme 1.</b> 1.1 The basics of medical rehabilitation. 1.2 Basics of physiotherapy	Description of educational material, problem solving, writing a synopsis for the class, essay, report, preparation for passing the exams	2	Checking the solution of problems, essay, abstract.
<b>Theme 2.</b> 2.1 Electrotherapy. 2.2 Magnetotherapy	Develop Training materials, writing a synopsis for the class, problem solving, essay, report, design f.044/ on preparation for the set-off	2	Check Problem solutions, fitoherapeutic recipes, abstract, synopsis.
<b>Theme 3.</b> 3.1 Phototherapy 3.2 Therapeutic application of factors of mechanical nature. 3.3 Hydrotherapy. 3.4 Thermoherapeutic.	Description of educational material, lectures, writing a synopsis for the class, problem solving, essay, report, design f.044/ preparing to take a credit.	2	Check Problem solutions, fitoherapeutic recipes, abstract, synopsis.
<b>Theme 4.</b> 4.1 Resort room therapeutics. 4.2 Medical recuperation in structure health resort help. 4.3 Manual therapeutics. 4.4 Therapeutic nutrition.	Develop Training materials, lesson summary writing, solution tasks, abstract, report,	2	Check solutions tasks, abstract, synopsis.
<b>Theme 5.</b> 5.1 Reflexotherapy. 5.2 Psychological rehabilitation. 5.3 Doctor control in medical rehabilitation.	Develop Training materials, writing a synopsis for the class, problem solving, essay, report,	2	Check solutions tasks, abstract, synopsis.
<b>Theme 6.</b>	Description education	2	Check solutions


Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

5.1 Therapeutic physical training (TMA). 5.2 Wellness methods 5.3 Rehabilitation of disabled people.	materials, writing a synopsis for the lesson, problem solving, abstract, report, design f.042/ preparing to take a credit.		tasks, abstract, synopsis.
<b>Section 2: Medical Rehabilitation in Clinical Practice.</b>			
<b>Theme 7.</b> 7.1 Medrehabilitation in cardiology. 7.2 Medrehabilitation in pulmonology.	Develop Training materials, writing a synopsis for the lesson, problem solving, abstract, report, design f.042/a, f.044/a, personalized rehabilitation (IPR) preparation for the set-off.	2	Checking the solution of problems, essay, abstract.
<b>Theme 8.</b> 8.1 Medrehabilitation in gastroenterology and endocrinology. 8.2 Medrehabilitation in oncology. 8.3 Medrehabilitation for infectious diseases. 8.4 Medrehabilitation in neurology.	Develop Training materials, writing a lesson summary, problem solving, essay, report, design f.042/a, f.044/a, personalized rehabilitation (IPR) preparation for passing a credit.	2	Checking the solution of problems, essay, abstract.
<b>Theme 9.</b> 9.1 Medical rehabilitation in traumatology and orthopedics. 9.2 Medical rehabilitation in surgery. 9.3 Medrehabilitation	Develop Training materials, writing a synopsis for the class. Registration f.042/u, f.044/u, problem solution, abstract, report.	2	Checking the solution of problems, essay, abstract.

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

in obstetrics and gynecology. 9.4 Medical Rehabilitation      B pediatrics.			
Total .		18	

Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

## 11. EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT OF THE DISCIPLINE

### a) List of recommended literature.

#### Basic:

1. Epifanov A. V., Achkasov E., Epifanov V. A. Medical rehabilitation: textbook Moscow: GOTAR - Media, 2015.
2. Ponomarenko G. N., Physical and rehabilitation medicine. National Manual [Electronic Resource] / edited by G. N. Ponomarenko - M. : GOTAR-Media, 2017. - 512 c. - ISBN 978-5-9704-4181-7 - Access Mode: <https://www.rosmedlib.ru/book/ISBN9785970441817.html>.
3. Epifanov A. V. Medical rehabilitation [Electronic resource] / A. V. Epifanov, E. E. Achkasov, V. A. Epifanov. - Moscow: GOTAR-Media, 2015. - – 672 c. - Access Mode: <http://www.studentlibrary.ru/book/ISBN9785970432488.html>.


#### Additional:

1. Epifanov V.A., Therapeutic physical training / V.A. Epifanov, A.V. Epifanov - M. : GOTAR-Media, 2017 - 656 p. - ISBN 978-5-9704-4257-9 - Text : electronic // EBS "Student adviser" : [site]. - URL : <http://www.studentlibrary.ru/book/ISBN9785970442579.html>
2. Ponomarenko G.N., General physiotherapy : a textbook / G.N. Ponomarenko. - 5th ed., transcript and additional - M. : Gotar-Media, 2014 - 368 p. - ISBN 978-5-9704-3167-2 - Text : electronic // EBS "Student Advisor" : [site]. - URL : <http://www.studentlibrary.ru/book/ISBN9785970431672.html>
3. Kotenko K. V., Back pain : diagnosis and treatment / K. V. Kotenko [et al.] - M. : GOTAR-Media, 2016 - 528 p. - ISBN 978-5-9704-3861-9 - Text : electronic // EBS "Student Advisor" : [site]. - URL : <http://www.studentlibrary.ru/book/ISBN9785970438619.html>
4. Epifanov V.A., Medical Rehabilitation for Diseases and Damages of the Urinary System / Epifanov V.A., Korchzhkina N.B. - M. : GOTAR-Media, 2019 - 528 p. - ISBN 978-5-9704-5267-7 - Text: electronic // EBS "Student adviser": [site]. - URL : <http://www.studentlibrary.ru/book/ISBN9785970452677.html>

#### Educational and methodical:

1. Sagidova S. A. Means of therapeutic physical culture in respiratory diseases : teaching-method. manual / Sagidova Svetlana Aleksandrovna, M. V. Balykin; ULGU, IMEiFK. - Ulyanovsk : ULGU, 2015
2. Kulikova, T.K. Main principles of prescription of physiotherapeutic methods of treatment : Method of recommendation / T.K. Kulikova, G.S. Kamayeva /- Ulyanovsk : Ulyanovsk State University, 2000,-20s.

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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

## b) software

name
PCA Consultant Plus
NEB RF
EBS IPRBooks
AIBS "MegaPro"
Microsoft Windows operating system
"MyOffice Standard."

## c) Professional databases, information and reference systems:

### 1. Electron-library systems:

1.1. **IPRbooks** [Electronic Resource]: library system / group of companies I.P.R.Media . - Electron. dan. - Saratov , [2019]. - Access mode: <http://www.iprbookshop.ru>.

1.3. **Student adviser** [Electronic resource]: electronic library system / Politekhresurs Ltd . - Electron. dan Moscow, 2019] . - Access mode: <http://www.studentlibrary.ru/pages/catalogue.html>.

2. **ConsultantPlus** [Electronic resource]: reference legal system. /Company "Consultant Plus" - Electron. given. - Moscow : Consultant Plus, [2019].

3. **Database of periodicals** [Electronic resource] : electronic journals / IVIS Ltd . - Electron. dan Moscow, 2019 ] . - Access mode: <https://dlib.eastview.com/browse/udb/12>.

4. **National Digital Library** [Electronic resource]: digital library . - Electron. dan Moscow, 2019 ] . - Access mode: <http://www.studentlibrary.ru/pages/catalogue.html>  
<https://нэб.рф>.

### 6. Federal information and educational portals:

6.1. Information system [Single window of access to educational resources](http://window.edu.ru). Access mode: <http://window.edu.ru>.

6.2. <https://e.lanbook.com/> Federal portal [Russian Education](http://www.edu.ru). Access mode: <http://www.edu.ru>.


### 7. Educational resources of ULGU:

7.1. Electronic Library of ULGU. Access mode : <http://lib.ulsu.ru/MegaPro/Web>.

7.2. Educational portal of ULGU. Access mode : <http://edu.ulsu.ru>.

Agreed:

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Russian Ministry of Science and Higher Education Ulyanovsk State University	Form	
F-working discipline program		

## 12. LOGISTICAL SUPPORT OF DISCIPLINE:

Audiences for lectures, practical classes, for current control and interim certification are equipped with furniture, the training board is equipped with multimedia equipment to provide information to a large audience.

Rooms for independent work are equipped with computer equipment with the ability to connect to the "Internet" and provide access to electronic information and education environment, electronic library system.

The training rooms are equipped with computer equipment with the possibility of connecting to the Internet and providing access to electronic information and educational environment, electronic library system.

Physiotherapy and LFK rooms are equipped. Equipment of rehabilitation halls of Bubnovsky Center.

The list of equipment used in the educational process is indicated in accordance with the information on material and technical support and equipment of the educational process, placed on the official website of ULGU in the section "Information about educational organization".


## 13. SPECIAL CONDITIONS FOR STUDENTS WITH DISABILITIES

In case of need, students with disabilities (at the request of the student) may be offered one of the following options for perception of information taking into account their individual psychophysical characteristics:

- for the visually impaired: in printed form in enlarged font; in the form of an electronic document; in the form of an audio file (translation of training materials into audio format); in printed form in Braille; individual consultations involving a typhoon translator; individual assignments and consultations;

- for the hearing impaired: in printed form; in the form of an electronic document; video materials with subtitles; individual consultations involving a sign language interpreter; individual assignments and consultations;

- for people with musculoskeletal disorders: in printed form; in the form of an electronic document; in the form of an audio file; individual tasks and consultations.

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Developer Associate Professor Kulikova T.K.

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