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FACULTY OF MEDICINE II

STUDY PROGRAM 0912.1 MEDICINE

DEPARTMENT OF MEDICAL REHABILITATION, PHYSICAL MEDICINE AND MANUAL THERAPY

APPROVED

at the meeting of the Commission for Quality
Assurance and Curricular Evaluation

Faculty of Medicine

Protocol nr. 1 from 16.09.21

President, DhM, associate professor

Suman Serghei

APPROVED

at the meeting of the Council of the Faculty
of Medicine II

Protocol nr. 1 from 21.09.21

Dean of the faculty, DM, associate
professor

Bețiu Mircea

APPROVED

at the meeting of the Department of Medical
Rehabilitation, Physical Medicine and Manual Therapy
Protocol nr.3 from 15.09.2021

Head of Department, university professor, DhM

Pascal Oleg

SYLLABUS

DISCIPLINE MEDICAL REHABILITATION. PHYSICAL MEDICINE

Integrated studies

TYPE OF COURSE: Compulsory

Chișinău, 2021



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I. PRELIMINARIES

General presentation of the discipline: the place and role of the discipline in the formation of the specific competencies of the professional / specialty training program

Rehabilitation and physical medicine is an independent medical specialty concerned with promoting physical and cognitive functioning, of activities (including behavior), participation (including quality of life) and changes in personal and environmental factors. Thus it is responsible for the prevention, diagnosis, treatment and management of rehabilitation of people's with disability affections and comorbidities for all ages.

According to the World Health Organization (WHO), rehabilitation is "the use of all means to reduce the impact of conditions that create disabilities to enable people with disabilities to achieve optimal integration into society". Concepts of 'functioning' and 'participation' and 'contextual factors' (environmental and personal) – are basic elements in any medical rehabilitation process.

Rehabilitation can substantially reduce the negative impact of many acute or chronic conditions that can generate disabilities, in particular, the pathology of the osteo-articular system, central and peripheral nervous system, cardiovascular, respiratory and others.

The fundamental objective of medical rehabilitation is to reduce the impact of disability on individuals, in the acute, subacute and chronic period of acquired and congenital pathologies, as well as the application of various interventions for primary and secondary prophylaxy.

Rehabilitation specialists use specific tools for clinical-functional assessment and perform treatments including pharmacological, physical, technical, as well as educational and professional interventions.

The fundamental principles of medical rehabilitation as a specialty are patient-centered (personal needs), multidisciplinary teamwork, early initiation, continuity and individualization of rehabilitation treatment.

Medical rehabilitation can be practiced at various stages of medical care, including emergency hospitals, specialized rehabilitation centers / wards, outpatient physical medicine practices, spas and more.

- The mission of the curriculum (purpose) in vocational training:

The main purpose aims at knowledge components, objectives and principles of organization of medical rehabilitation assistance, its place and role in health care, of medical specialist skills in rehabilitation.

- The language (s) of teaching the discipline: romanian, russian, english.
- Beneficiaries: students of V year of study, Faculty of Medicine 1, Medicine 2, specialty Medicine.



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II. MANAGEMENT OF THE DISCIPLINE

Discipline code		S.09.O.079	
Name of the Discipline		Medical rehabilitation. Physical medicine	
Responsable for Discipline		Pascal Oleg	
Year	V	Semester	IX
Total number of hours, including:			60
Course	10	Practical work	10
Seminars	10	Personal work	30
Practical internship			-
Evaluation form	E	Number of credits	2

III. TRAINING AIMS WITHIN THE DISCIPLINE

At the end of the discipline study the student will be able to:

- *at the level of knowledge and understanding:*
 - recognize "Medical Physical Rehabilitation" as a clinical-therapeutical specialty, its place and role in the health system,
 - recognize medical rehabilitation as a complex medical, educational, social and other activity area of people with disabilities caused by various diseases, pathological conditions and traumas and the place of this discipline in the health system;
 - be familiar with the WHO recommendations on the organization of the medical rehabilitation process according to the International Classification of Functionality, Disability and Health (CIF-2005)
 - to know the principles and particularities of medical rehabilitation with methods of physical medicine of patients with dysfunctions and disabilities at different stages of treatment (hospital, ambulatory, specialized medical institutions or institutions, cabinets / wards / rehabilitation centers, spa resorts etc.);
 - Understand the methodology and particularities of assessing and evaluating the results of examinations and tests for correct diagnosis, clinical, functional and differential diagnosis, and organizing the rehabilitation process;
 - The indications and mode of therapeutic recovery and transfer of patients in specialized rehabilitation services;
 - to know the frequency, etiology and pathogenesis of therapeutic, surgical, congenital illnesses that most often cause functional disabilities;
 - to know contemporary methods of clinical, instrumental, functional laboratory evaluation of apparatus and systems, disability, ADL, quality of life, assessment and assessment of rehabilitation programs
 - to know the contemporary methods of complex treatment with means of basic physical medicine, special and help in chronic diseases, consequences of traumas with different degrees of disability;



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- to know the methods of prophylaxis of deterioration, disability and infirmity with means of physical medicine.

- ***at the application level:***

- carry out the correct collection and estimation of anamnesis data;
- perform clinical examination, instrumental and functional assessments and correct assessment of patients with dysfunction, disability and disability in various diseases;
- be able to establish a clinical-functional diagnosis for the initiation of the medical rehabilitation program;
- to appreciate the functional recession, the degree of disability, the prognosis of medical and medical-social rehabilitation;
- evaluate the effectiveness of the clinical and functional medical rehabilitation program

- ***at the integration level:***

- to appreciate the importance of disability due to illness and trauma in the context of medicine, public health, socio-economic situations, quality of life;
- creatively address the problems of fundamental medicine and integrative medicine in health rehabilitation and physical medicine;
- to deduce the interrelations between the medical rehabilitation physical medicine and other fundamental and clinical-therapeutic and paramedical disciplines;
- to have the skills to implement and integrate the knowledge gained in the medical rehabilitation discipline of physical medicine with the fundamental and clinical-therapeutic disciplines;
- be able to evaluate and self-assess the knowledge in the field;
- be able to assimilate new achievements in the field of medical rehabilitation and physical medicine and integrate them with other medical and paramedical disciplines.

IV.CONDIȚIONĂRI ȘI EXIGENȚE PREALABILE

For the proper acquisition of the discipline, thorough knowledge is required in the fields of Biology, Chemistry, Biochemistry, Physics, Biophysics, Functional Anatomy, Biomechanics, Pharmacology, Morph pathology, Physiology and Pathophysiology, in Therapeutic and Surgical Internal Medicine, Neurology and Neurosurgery, Orthopedics and Traumatology, Surgery, Pediatrics, Gerontology, etc., obtained during six years of study.

In order to acquire medical knowledge and professional skills, it is necessary for the student to demonstrate communication skills, team activity, working with bibliographic resources and information means.

In clinical and practical activities the student will demonstrate respectful, caring and professional behavior in communicating with patients, family members or caregivers, as well as with medical staff.



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V. THEMES AND ESTIMATE ALLOCATION OF HOURS

Lectures, practical hours/ laboratory hours/seminars and self-training

Nr. d/o	THEME	Number of hours		
		Lectures	Practical courses	Individual work
1.	Introduction in Medical Rehabilitation and Physical Medicine.	2	4	6
2.	Methods of Rehabilitation and Physical Medicine. Physical therapy. Fiziobalneoterapia.	2	4	6
3.	Medical rehabilitation in musculoskeletal system pathology.	2	4	6
4.	Medical rehabilitation in the pathology of the cardiovascular and respiratory systems.	2	4	6
5.	Medical rehabilitation in the pathology of the nervous system.	2	4	6
Total:		10	20	30

VI. PRACTICAL WORKS PURCHASED AT THE END OF THE COURSE

THE ESSENTIAL PRACTICAL TASKS ARE:

- JOINT INSPECTION
- GONEOMETRY
- APPRECIATION OF MUSCLE STRENGTH
- APPEARANCE OF BODY ALIGNMENT
- PERFORMING EFFORT TESTS
- ASSESSMENT OF THE DEGREE OF DISABILITY

VII. REFERENCE OBJECTIVES OF CONTENT UNITS

Objectives	Content units
Chapter 1. Introduction in Medical Rehabilitation and Physical Medicine.	
<ul style="list-style-type: none"> • Understanding the basics in the field of medical rehabilitation and physical medicine (functioning / disability / participation / contextual factors) • Rehabilitation assistance in the health system. Structure of rehabilitation services. • To know the principles and particularities of medical rehabilitation with methods of physical medicine • International Classification of Functioning, Disability and Health 	<p>Introduction to medical rehabilitation and physical medicine. Definitions, brief history and conceptual framework.</p> <p>Basic concepts in medical rehabilitation - functioning and disability.</p> <p>Organizing the medical rehabilitation service.</p> <p>The White Paper of the specialty - the role and professional skills of the specialist in rehabilitation and physical medicine.</p> <p>Multidisciplinary rehabilitation team. The position and role of the rehabilitation doctor.</p> <p>Rehabilitation plan, rehabilitation goals and objectives.</p>



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Objectives	Content units
ICF DH - components and principles of application.	Interventions in Medical Rehabilitation. General principles of elaboration and content of rehabilitation programs.
Chapter 2. Methods of Rehabilitation and Physical Medicine. Physical therapy. Fiziobalneoterapy.	
<ul style="list-style-type: none"> Knowledge of methods and understanding of the principles of application of natural and artificial physical factors in medical rehabilitation. Knowledge of the basic notions of kinetology, kinetotherapy and occupational therapy. Principles of selection of physio-functional means at different stages of treatment. Knowledge of indications, contraindications and therapeutic effects of physio-functional methods. 	<p>Classification of natural and artificial physical factors.</p> <p>Definition of the notions of electrotherapy, balneology and climatology. Definition of the notion of kinetology and kinetotherapy. The components of kinetology. Means of physical therapy in medical rehabilitation. Criteria for classifying physiotherapy.</p> <p>Classification and application of spa and climate methods in medical rehabilitation.</p> <p>Therapeutic and prophylactic effects of physio-functional means.</p> <p>Principles of application of natural, artificial and physiotherapeutic physical factors for treatment and prophylactic purposes at different stages of rehabilitation</p>
Chapter 3. Medical rehabilitation in musculoskeletal system pathology.	
<ul style="list-style-type: none"> Knowledge of clinical-functional methods for global and analytical evaluation of the osteo-articular system. Application of specific functional assessment tools in locomotor system pathology. Establishing the rehabilitation objectives, selecting the optimal methods and means in the functional recovery of the various pathologies of the osteo-articular system. Knowledge of the principles of 	<p>General principles of clinical-functional evaluation of people with locomotor system pathology.</p> <p>Analytical and global functional evaluation: somatoscopic examination, joint balance, muscle testing, gait evaluation, grasping. Peculiarities of ADL appreciation and quality of life.</p> <p>Physio-functional methods in the rehabilitation of the patient with diseases of the locomotor system. Peculiarities of indication and association of physio-functional methods in relation to functional deficits, the evolutionary phase of the</p>



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Objectives	Content units
<p>multidisciplinary approach in the rehabilitation of muscular and oste-articular diseases.</p> <ul style="list-style-type: none"> Knowledge of modern technologies and methods of rehabilitation in diseases of the musculoskeletal system 	<p>disease and the mechanism of action of therapies. Medical rehabilitation programs in degenerative and inflammatory joint pathology, posture and alignment disorders of the body, post-traumatic injuries of the osteo-articular system. Primary prophylaxis interventions și secundară.</p>
<p>Chapter 4. Medical rehabilitation in the pathology of the cardiovascular and respiratory systems.</p>	
<ul style="list-style-type: none"> Understanding the general principles in the rehabilitation of patients with cardiovascular and respiratory pathology. Knowledge of global and specific functional assessment techniques of the cardiovascular and respiratory system. Knowledge of the rehabilitation stages of patients with cardiovascular diseases and the principles of rehabilitation treatment at each stage. Knowledge of the principles of application of recovery methods and techniques in diseases of the respiratory system in accordance with respiratory functional syndrome. Knowledge of the principles of multidisciplinary approach in the rehabilitation of cardiovascular and respiratory diseases. 	<p>General principles of medical rehabilitation in respiratory system pathology. Acute and chronic obstructive and restrictive syndromes. Functional assessment of the respiratory system. Clinical-functional deficits in obstructive and restrictive respiratory syndromes.</p> <p>Medical rehabilitation programs for patients with various pathologies of the respiratory system.</p> <p>Principles of medical rehabilitation of patients with cardiovascular pathology. Phases of cardiovascular rehabilitation. Clinical-functional deficits in cardiac pathology. General principles in the evaluation of clinical-functional deficiencies. Methods of functional diagnosis and selection of patients for the treatment of cardiovascular rehabilitation. Elaboration of rehabilitation programs in the pathology of the cardiovascular system.</p> <p>Complications prophylaxis and primary prevention measures.</p>
<p>Chapter 5. Medical rehabilitation in the pathology of the nervous system.</p>	



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Objectives	Content units
<ul style="list-style-type: none">• Înțelegerea fenomenului de neuroplasticitate și importanța acestuia în reabilitare neurologică.• Înțelegerea rolului echipei multi-disciplinare și intervențiilor specifice în procesul de reabilitare neurologică.• Cunoașterea particularităților de evaluare funcțională a pacienților cu afecțiuni neurologice.• Cunoașterea principiilor de recuperare a pacienților neurologici în contextul complexității procesului patologic și a complicațiilor posibile.• Cunoașterea abordărilor și metodelor moderne de reabilitare în afecțiunile sistemului nervos.	<ul style="list-style-type: none">• Understanding the phenomenon of neuroplasticity and its importance in neurological rehabilitation.• Understanding the role of the multi-disciplinary team and specific interventions in the neurological rehabilitation process.• Knowledge of the peculiarities of functional evaluation of patients with neurological disorders.• Knowledge of the principles of recovery of neurological patients in the context of the complexity of the pathological process and possible complications.• Knowledge of modern approaches and methods of rehabilitation in diseases of the nervous system.

VIII. PROFESSIONAL (SPECIFIC (SC)) AND TRANSVERSAL (TC) COMPETENCES AND STUDY OUTCOMES

• Professional skills (specific) (PS)

- Understanding the notions of disability, participation and functioning in approaching patients with various diseases.
- Knowledge of the basic principles of medical rehabilitation.
- Understanding the competencies of the rehabilitation specialist.
- Knowledge of the particularities of organizing the medical rehabilitation service at different stages
- Knowledge of functional deficiencies in patients with diseases of the nervous, locomotor, cardiovascular and respiratory systems.
- Knowledge of physical medicine methods with therapeutic and prophylactic potential for various diseases.
- Knowledge of the principles in establishing the specific goals and objectives for the elaboration of the rehabilitation program.

• Transversal skills (TS)

- Understanding the concept of multidisciplinary in the specialty of medical rehabilitation.
- Development of cooperation skills within the multidisciplinary team.
- Development of communication skills with patients with functional deficiencies and disabilities.
- Understanding contextual factors (personal and environmental) in assessing and rehabilitating disability.



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- Efficient use of information sources for assisted professional training in the field of medical rehabilitation (Internet portals, specialized software applications, databases, online courses, etc.).
- Knowledge of the recommendations for hospitalization in rehabilitation medical units, chronic and palliative care for people with disabilities.

• Study outcomes

- To understand the concept and principles of the Medical Rehabilitation specialty, the concept of Disability, ICF-WHO, according to the World Disability Report, the White Paper of the Specialty in Europe
- Apply the principles of the Medical Rehabilitation specialty in the areas of competence of the specialty.
- To know the peculiarities of the medical rehabilitation specialty in Republic of Moldova, the specifics of physiotherapy, balneology and kinetic therapy.
- Possess the methods of clinical, functional, neurophysiological evaluation, musculoskeletal evaluation, echography, gait and balance assessment.
- Know the main interventions and specific procedure in Medical Rehabilitation.
- To know the management of Medical Rehabilitation in musculoskeletal disorders;
- To know the management of medical rehabilitation in central and peripheral nervous system disorders.
- To know the principles and management of Medical Rehabilitation under other degenerative conditions of disability: in children, elderly, cardio-pulmonary, bone and joint diseases.

IX. STUDENT'S SELF-TRAINING

Nr.	Expected product	Implementation strategies	Assessment criteria	Implementation terms
1.	Working with information sources	Study the lecture or the material in the manual to the topic carefully. Selection of thematic questions that require reflection on the subject. To get acquainted with the list of additional information sources on the topic. Select the source of additional information for that theme. Wording of generalizations and conclusions regarding the importance of the subject.	Ability to extract the essentials; interpretative skills; the volume of work	Throughout the module
2.	Working with electronic information sources	Study of electronic material on the subject. Selecting information.	Ability to extract the essentials; the volume of work	Throughout the module



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3.	Preparing and supporting presentations	Selection of the theme of the presentation, setting the presentation plan, setting the terms of realization. Establishing the PowerPoint presentation components - topicality, practical applications, bibliography. Fellow reviews. Professor Review.	The volume of work, the degree of penetration in the essence of presentation, elements of creativity, personal attitude formation, coherence of exposure and scientific correctness, graphic presentation, presentation method.	Throughout the module
4.	Case Study	Presentation and analysis of the clinical case with reference to current bibliographic sources. Situation problems.	Consecutive sequence. Capacities for clinical analysis of the problem. Rationale for assessment and rehabilitation methods. Demonstrate understanding of the problem, ability to formulate conclusions and recommendations.	Throughout the module

X. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

- **Teaching and learning methods used**

The discipline of Medical Rehabilitation and Physical Medicine is taught in classical manners: with lectures and practical works. At the lectures, the theoretical course will be read by the course holders. In practical seminars and lessons, students will study concrete clinical examples demonstrating the role of the rehabilitating physician examining, testing, evolving and appreciating the patient in order to establish functional diagnosis, rehabilitation program, selection of functional physical rehabilitation means - kineto-physio-balneotherapy, massage, occupational therapy, manual, associated or combined treatment methods, the determination of specialized treatment, the prevention of physical-functional deconditioning, the installation of immobilization syndromes, the psycho-emotional disorders, the reduction of the risks of the installation of severe disability, the vicious compensation and the medical conduct aimed at increasing the potential for activity and participation of the patient. In the clinic the students attend the morning conferences of the doctors, the weekly visits, the presentation and discussion of the serious patients and the patients presented for surgical interventions. The teaching of the Medical Rehabilitation and Physical Medicine discipline uses different didactic methods, oriented towards the efficient acquisition and achieving the objectives of the didactic process. In the theoretical lessons, along with traditional methods: „Brainstorming”, „Diagrama VENN”, „SWOT”, „Gândește-perechi-prezintă”, „Interogarea multi-procesuală”, „Cubul”, „Interviul în trei trepte”, „Discuția ghidată”, „Studiu de caz clinic”, „Simularea”, „Harta conceptuală”, „Graficul T”, „Fișa de autoevaluare: Am aflat /A fost dificil să înțeleg /Vreau să aflu”.

Forms of individual activity are used in practical work. For the deeper acquisition of the material, different semiotic systems are used (scientific language, graphic and computerized language),



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teaching materials (films, presentations, tables, diagrams, clinical, paraclinical and functional examination bulletins, rehabilitation equipment). Information technologies, search and communication applications (databases and electronic information technologies, online communication platforms) are used in lessons and extra-curricular activities.

- ***Applied teaching strategies / technologies (specific to the discipline)***

Teaching technologies: "Exposition", "Conversation", "Synthesis", "Argumentative Discourse", "Brainstorming", "VENN Diagram", "SWOT", "Think-Pairs-Presents", "Multi-Procedural Interrogation", "Cube", "Three-step interview", "Guided discussion", "Clinical case study", "Simulation", "Concept map", "T chart", "Self-assessment sheet: I found out / It was difficult to understand / I want to know".

- ***Assessment methods (* formative)***

Current: *frontal and / or individual control through*

- Oral tests
- Written tests
- Evaluation of the presentation of the clinical case
- Participation in discussions
- Evaluation of the PowerPoint project / presentation
- Self-assessment sheets

Final: *test - grid, examination*

Method of mark rounding at different assessment stages

Intermediate marks scale (annual average, marks from the examination stages)	National Assessment System	ECTS Equivalent
1,00-3,00	2	F
3,01-4,99	4	FX
5,00	5	E
5,01-5,50	5,5	
5,51-6,0	6	
6,01-6,50	6,5	D
6,51-7,00	7	
7,01-7,50	7,5	
7,51-8,00	8	C
8,01-8,50	8,5	
8,51-8,00	9	
9,01-9,50	9,5	B
9,51-10,0	10	
		A

The average annual mark and the marks of all stages of final examination (computer assisted, test, oral) - are expressed in numbers according to the mark scale (according to the table), and the final mark obtained is expressed in number with two decimals, which is transferred to student's record-book.



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Absence on examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.

XI. RECOMMENDED LITERATURE:

A. Compulsory:

1. Randall Braddom. Treatise on Physical Medicine and Rehabilitation, Edition IV, translation into Romanian. Bucharest Publishing House 2015. ISBN: 978-973-0-198869-0, 1575p.
2. White Paper of the Specialty of Physical Medicine and Rehabilitation in Europe, Ed. Under the auspices of UEMS 2006, translated into Romanian. Carol Davila University Publishing House. ISBN 973- 708-025-4, 83p.
3. Georgiana-Ozana Tache. Guide to physical medicine and medical recovery. Publisher: SCRIPTA 2010. ISBN: 973-9161-87-1. 288p.

B. Additional

1. Ioan Sorin Stratulat et al. Physical means used in physical medicine and rehabilitation- 2 Volumes + CD. . Gr. T. Popa Publishing House U.M.F. Iasi 2020. ISBN 978-60694797-6-6, 600p.
2. Iaroslav Kiss. Physio-kinetotherapy and medical recovery in musculoskeletal disorders. ISBN: 973-39-0604-9. 284p.
3. Walter Frontera Julie Silver Thomas Rizzo. Essentials of Physical Medicine and Rehabilitation 4th Edition. Musculoskeletal Disorders, Pain, and Rehabilitation. Elsevier 2018. ISBN: 9780323549479. 1023 p.
4. Епифанов В.А. Основы Реабилитации. Гэотар Медиа Москва 2020. ISBN 978-5-9704-3434-5 416. 416p.