

**Odessa National Medical University**  
**Faculty of Medicine No. 2**  
**Department of physical rehabilitation, sports medicine, physical education and**  
**valeology**

**SYLLABUS OF THE EDUCATIONAL DISCIPLINE**  
**"PHYSICAL REHABILITATION AFTER INJURIES AND DISEASES"**

<b>The scope of the course</b>	4.0 ECTS credits, 120 hours.
<b>Semester, year of study</b>	IV semester, 2 year
<b>Days, time, place</b>	According to the schedule
<b>Teacher(s)</b>	1. Yushkovska Olga Gennadiivna. Head of the department, doctor of medical sciences, professor. med_rehab@ukr.net 2. Plakida Oleksandr Leonidovych. Associate Professor, Doctor of Medical Sciences. Responsible for international work, scientific work and scientific student circle of the department. aplakida01@gmail.com 3. Semenenko Oleg Valeriyovych. Assistant responsible for postgraduate work of the department. osemenenko447@gmail.com 4. Filonenko Olena Vyacheslavivna. Assistant, candidate of medical sciences. alena.filonenko@gmail.com 5. Shakhnazaryan Kamo Eduardovych. Assistant,. kamsax@rambler.ru
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<b>Workplace</b>	Department of physical rehabilitation, sports medicine, physical education and valeology, address: Odesa, str. Olgiivska, 4-A,
<b>Consultations</b>	Thursday - 15.00 - 17.00. Saturday - 9.00 - 12.00. They are conducted by the teacher on duty according to the rotation schedule. (For the quarantine period – Viber, online Zoom and/or Microsoft Teams.).

### COMMUNICATION

The system of organizing classes is carried out using the e-mail of the department: [sportmed@onmedu.edu.ua](mailto:sportmed@onmedu.edu.ua), as well as using Viber, Facebook and Telegram messengers and using the Zoom and/or Microsoft Teams platforms.

### COURSE ABSTRACT

**"Physical rehabilitation after injuries and diseases"**, as a selective educational discipline, is teaching the principles of using physical rehabilitation tools to ensure the normal course of physiological processes during injuries, diseases, and surgical interventions, for the prevention of complications, as well as for more effective recovery of athletes after injuries.

**Physical rehabilitation after injuries and diseases** - refers to the general principles of physical rehabilitation in the case of musculoskeletal disorders. Physical rehabilitation for wounds, thermal injuries, diaphyseal fractures of the bones of the upper and lower limbs, and fractures of the bones of the upper shoulder girdle. Means of physical rehabilitation for intra-articular (epiphyseal) damage to the bones of the upper and lower limbs. Physical rehabilitation at the stages of restorative treatment of traumatic dislocations. The use of physical rehabilitation tools for fractures of the pelvis and spine. Diseases of the joints and means of physical rehabilitation at the stages of restorative treatment. Physical rehabilitation after total knee and hip arthroplasty. Physical rehabilitation for upper and lower limb amputations. Peculiarities of

physical rehabilitation for sportsmen's injuries. Using physical rehabilitation tools for postural disorders, scoliotic disease, and flat feet.

**Prerequisites of the course:** are based on the study by the applicants of normal and pathological clinical anatomy, general and clinical pathological physiology, propaedeutics of internal diseases and therapy, family medicine, phthisiopulmonology, internal medicine, physical rehabilitation, which involves integration with these disciplines and forms the ability to apply knowledge in the process of further education and professional activities.

**Post-requisites of the course:** lays the foundations for students to study manual therapy, cosmetology, current problems of physiotherapy, resort science, and rehabilitation, information technology in medicine, and the basics of reflexology.

**The purpose of teaching the educational discipline "Physical rehabilitation after injuries and diseases"** is the formation of knowledge about the influence of various means of rehabilitation (exercise, physiotherapy, massage, balneotherapy, mechanotherapy, occupational therapy, etc.) on the recovery processes of patients with pathologies of the musculoskeletal system and diseases. Teaching is interdisciplinary and combines medical and biological, psychological, social, and legal components.

**The main task of studying the discipline "Physical Rehabilitation after Injuries and Diseases" is:** to provide Ph.D candidates with knowledge of the basic principles of using physical rehabilitation tools to ensure the normal course of physiological processes during injuries, diseases, and surgical interventions, for the prevention of complications, and more effective recovery of athletes after injuries, depending on the type of chosen sports direction.

**The purpose of the course "Physical rehabilitation after injuries and diseases" is:** The application of physical, manual, and instrumental research methods to assess the condition and dynamic monitoring the condition of patients with injuries and diseases (polytrauma).

**Expected results.**

As a result of studying the discipline, students of higher education should:

***A graduate student (applicant) should know:***

- The main types of injuries and diseases of ORA (polytrauma);
- The main pathological processes in injuries and diseases of ORA (polytrauma), their clinical picture;
- Methods of pre-medical care during injuries of the neck, spine, chest, limbs.

***A graduate student (applicant) must be able to:***

- Apply physical, manual and instrumental research methods to assess the condition, perform dynamic monitoring of the condition of patients with injuries and diseases of ORA (polytrauma);
- Based on the received data, be able to establish a rehabilitation diagnosis;
- Apply knowledge about the causes and signs of injury during motor activity, knowledge of the characteristics of traumatic shock, its course, main signs, types and signs of bone fractures;
- Carry out transport immobilization in case of bone damage.
- Conduct physical therapy of patients/clients of various ages with complex pathological processes and disorders;
- Perform examinations of patients/clients of various nosological groups, using appropriate tools;
- Predict the results of physical therapy of patients/clients of different nosological groups and with complex progressive and multisystem pathology;
- To observe safety for the practicing specialist and the patient/client to carry out independent practical activities in the specialty.

## **COURSE DESCRIPTION**

### ***Forms and methods of teaching***

The course will be set out in the form of practical classes (60 hours.), students' independent work (60 hours).

The following teaching methods will be used during the teaching of the discipline:

**Practical classes** are provided with methodical developments for each practical class, visual teaching aids for each class (presentations, video lectures), the department's information resource, and structured skill control algorithms.

**Independent work** in the study of a selective academic discipline is ensured by methodical developments for independent work, visual teaching aids (video lectures, presentations), information resource of the department, topics of independent work, structured algorithms of skill control.

**Final control** is not carried out, the study of the discipline ends with a test at the last practical session.

#### **Content of the academic discipline**

**Topic 1.** Concept of rehabilitation. Its tasks, principles, and means.

**Topic 2.** General characteristics of means of physical rehabilitation.

**Topic 3.** Introduction to traumatology.

**Topic 4.** Physical rehabilitation for fractures of long tubular bones and bones of the shoulder girdle.

**Topic 5.** Physical rehabilitation for joint damage.

**Topic 6.** Physical rehabilitation for fractures of the spine and pelvis.

**Topic 7.** Physical rehabilitation for posture disorders and flat feet. Physical rehabilitation for joint diseases. Peculiarities of physical rehabilitation of athletes.

**Topic 8.** Physical rehabilitation in diseases of the organs of the cardiovascular system. Physical rehabilitation for diseases of the respiratory system.

**Topic 9.** Physical rehabilitation for diseases of the gastrointestinal and urinary systems and metabolic disorders.

**Topic 10.** Physical rehabilitation for diseases and injuries of the central nervous system. Physical rehabilitation for diseases and injuries of the peripheral nervous system. Physical rehabilitation for diseases and injuries of the nervous system in children.

**Topic 11.** Control of practical skills and theoretical knowledge. Credit class.

#### **List of recommended literature**

##### **Basic literature:**

1. Physical rehabilitation, sports medicine: a textbook for higher medical students. education institutions / V.V. Abramov, V.V. Klapchuk, O.B. Nekhanevich [and others]: edited by Professor V.V. Abramov and associate professor O.L. Smirnova. - Dnipropetrovsk, Zhurfond, 2014. - 456 p.: illustrations. 79.

2. Physical rehabilitation of patients with ischemic heart disease. Yushkovska O.H. Monograph / Odessa. state honey. University of Odesa: - 2010. - 224 c.

3. Physical rehabilitation: textbook /V.M. Mukhina - 3rd ed., revised. and additional - K.: Olymp. L-ra, 2009. – 488 p.: ill..

4. Marchenko O. K. Physical rehabilitation of patients with injuries and diseases of the nervous system: Study. manual. Olympic Literature, 2006. – 196 p.

5. European Physical and Rehabilitation Medicine Bodies Alliance. White Book on Physical and Rehabilitation Medicine in Europe. Eur J PhysRehabilMed 2018. - Vol.54(2). – P.125-321.

6. World Health Organization. Rehabilitation 2030: a call for action: Meeting report [Internet]. WHO; 2017. Available from: <http://www.who.int/disabilities/care/rehab-2030/en/>

7. WHO WHO global disability action plan 2014-2021 [Internet]. WHO. [cited 2014 Oct 21]. Available from: <http://www.who.int/disabilities/actionplan/en/>

8. A position paper on physical & rehabilitation medicine programmes in post-acute settings / Ward A., GutenbrunnerC., GiustiniA., DelarqueA., Fialka-Moser V., KiekensC., BerteanuM., Christodoulou N. // J Rehabil Med 2012; (44): 289–298.

9. R.L. Braddom. Physical Medicine and Rehabilitation / R.L. Braddom. – England: Elsevier Science, 2011. – 1536 c.

10. WHO World Report on Disability [Internet]. WHO. [cited 2014 Nov 8]. Available from: [http://www.who.int/disabilities/world\\_report/2011/en/](http://www.who.int/disabilities/world_report/2011/en/)

11. European Union of Medical Specialists (UEMS) Section of Physical & Rehabilitation Medicine: A position paper on physical and rehabilitation medicine in acute settings./ Ward A., Gutenbrunner C., Damjan H., Giustini A., Delarque A. // J Rehabil Med. – 2010 (42): P.417–424.

12. DeLisa's. Physical Medicine and Rehabilitation / DeLisa's. – Lippincott Williams & Wilkins; Fifth, North Am, 2010. – 2432 c.

#### **Additional literature:**

1. Self-study physical education. Study guide / O.G. Yushkovska, T.Yu. Krutsevich, V.Yu. Seredovska, G.V. Topless – Odesa: Odesa. National Honey. Univ. - 302 p. – (Medical student library).

2. Gutenbrunner C., Tederko P., Grabljevec K., Nugraha B., Responding to the World Health Organization Global Disability Action Plan in Ukraine: developing a National Disability, Health and Rehabilitation Plan J Rehabil Med. – 2018 (50). – P.338–341

#### **Information resources:**

- <http://www.moz.gov.ua> – Official website of the Ministry of Health of Ukraine.

- <http://www.president.gov.ua/documents/6782015-19605> - Decree of the President of Ukraine "On intensification of work to ensure the rights of people with disabilities"

- <https://www.kmu.gov.ua/ua/npas/pro-zatverdzhennya-planu-zahodiv-iz-vprovadzhennya-v-ukrayini-mizhnarodnoyi-klasifikaciyi-funcjonuvannya-obmezhen-zhittyediyalnosti-ta-zdorovya-ta-mizhnarodnoyi-klasifikaciyi-funcjonuvannya-obmezhen-zhittyediyalnosti-ta-zdorovya-ditej-i-pidlitkiv> - Decree of the Cabinet of Ministers of Ukraine dated 27.12.2017 No. 1008-r "On approval of the plan of measures for the implementation in Ukraine of the International Classification of Functioning, Limitations of Vital Activities and Health and the International Classification of Functioning, Life Limitations and Health of Children and Adolescents"

- <http://zakon5.rada.gov.ua/laws/show/2801-12>- Law of Ukraine "Basics of Ukrainian legislation on health care"

- <http://zakon3.rada.gov.ua/laws/show/2961-15> - Law of Ukraine "On Rehabilitation of Persons with Disabilities in Ukraine"

- <http://zakon2.rada.gov.ua/laws/show/3808-12>- Law of Ukraine "On Physical Culture and Sports".

- <http://zakon4.rada.gov.ua/laws/show/1060-12> - Law of Ukraine "On Education".

- <http://www.nbu.gov.ua/> – National Library of Ukraine named after V. I. Vernadskyi.

- <http://library.gov.ua/> – National Scientific Medical Library of Ukraine.

- <http://osvita.ua/vnz/> – Higher education in Ukraine.

- <http://metodportal.com/taxonomy/term/35>–Methodical portal "Physical education".

- <http://www.tmfv.com.ua/> – magazine "Theory and Methodology of Physical Education".

#### **EVALUATION**

**Assessment of current educational activities.** Mastering of each topic is monitored in practical classes. The student's success is evaluated according to the traditional scale with grades "5", "4", "3", "2".

**At each practical lesson**, the instructor evaluates each student on a four-point system "5-4-3-2".

- **"excellent"** is given to a student who systematically worked during the semester, showed versatile and deep knowledge of the program material, is able to successfully complete the tasks provided for by the program, has mastered the content of the main and additional literature, realized the relationship of individual sections of the discipline, their importance for

the future profession, discovered creativity in understanding and using educational and program material, showed the ability to independently update and replenish knowledge; level of competence - high (creative)

- **"good"** is given to a student who has discovered a complete knowledge of educational and program material, successfully fulfills the tasks provided for by the program, has mastered the basic literature recommended by the program, has shown a sufficient level of knowledge in the discipline and is capable of independently updating and updating them in the course of further education and professional activity; level of competence - sufficient (constructive and variable)

- **"satisfactory"** is given to a student who has discovered knowledge of the basic educational and program material in the amount necessary for further study and subsequent work in the profession, copes with the tasks provided for in the program, made some mistakes in the answers on the exam and when performing exam tasks, but possesses the necessary knowledge to overcome the mistakes made under the guidance of a scientific and pedagogical worker; competence level - average (reproductive)

- **"unsatisfactory"** is given to a student who did not reveal sufficient knowledge of the main educational and program material, made fundamental mistakes in performing the tasks provided for in the program, cannot use knowledge in further training without the help of a teacher, could not master the skills of independent work; the level of competence is low (receptive-productive).

In the practical lesson, test control can also be used (10 tests - 10 minutes), which are evaluated as follows:

1. 9-10 correct answers - "5"
2. 7-8 correct answers - "4"
3. 5-6 correct answers - "3"
4. less than 5 correct answers - "2"

***Assessment of students' independent work***

Independent work of students, which is provided for in the topic along with classroom work, is evaluated during the current control of the topic in the corresponding practical lesson.

***Evaluation of an individual task***

Completion of an individual task is credited to the student only after successfully defending it in a practical session. Depending on the quality of performance and defense for an individual task, a student can receive traditional grades of "5", "4" and "3".

**The final control of mastering the discipline** is carried out upon their completion. The evaluation of the student's success in the discipline is a rating and is presented on a multi-point scale as the sum of points for the current control of knowledge and is defined according to the ECTS system and the scale adopted in Ukraine.

<b>The total amount of points in the discipline for all types of learning activities</b>	<b>National Scale Score</b>
From 170 to 200 points	Excellent (A) (excellent performance with only a small number of errors)
From 155 до 169 points From 140 до 154 points	Very good (B) (above average with several errors) Good (C) (generally correct execution with a certain number of significant errors)
125-139 <b>111 (min) - 124</b>	Satisfactory (D) (not bad, but with a significant number of shortcomings) Enough (E) (performance meets minimum criteria)
60-110 1-59	Unsatisfactory (FX) (reusable) Unsatisfactory (F) (with compulsory re-examination of the discipline)

### **Assessment of discipline**

The evaluation of the student's success in the discipline is a rating and is presented on a multi-point scale as the sum of points for the current control of knowledge and is defined according to the ECTS system and the scale adopted in Ukraine.

### **Evaluation of the student's independent work**

The material for students' independent work, which is provided in the topic of the practical lesson simultaneously with the classroom work, is evaluated during the current control of the topic in the corresponding classroom lesson. Evaluation of topics that are assigned to independent study and are not included in the topics of classroom training sessions are monitored during the final module control.

### **Assessment of individual student work**

The number of points for the student's individual work does not exceed 4 points. Points for individual work are added to the sum of points for the student's current educational activity. Points for individual work can be obtained by students who wrote and reported essays on recommended topics using additional literature and won prizes for participation in the discipline Olympiad among students of their university and higher educational institutions of Ukraine.

### **Converting a traditional discipline grade to a multi-point scale**

Of special methodological importance is the question of converting the result of the student's study of the discipline on a 200-point scale and further ranking on a rating scale (ECTS). It is necessary for implementation of academic mobility of students, providing a student with an opportunity to continue training in this discipline, at another university or in another country. The resulting average score for the discipline allows for conversion to a grade on a 200-point scale.

#### **Example:**

<b>Average score for the discipline</b>	<b>Score on a 200-point scale</b>
5,0	200
4,38	X

$$X = (4,38 \times 200) : 5 = 175 \text{ points}$$

### **COURSE POLICY**

#### **Deadline and recompilation policy**

Deadline and retake policy

All missed classes must be completed. A student who has missing practical classes must handle them independently (without receiving points!).

The student prepares answers to questions on the topic of the missed lesson, which are indicated in the methodological developments of the department. During independent work, the student must prepare the topics of the classes provided for by the methodological developments of the department.

Some, the most difficult and incomprehensible for the student questions can be asked to the teacher at the beginning of the missed lesson.

#### **During the practicum, the student must have:**

- lecture notes;
- diagrams, drawings, provided in the process of independent work of the student;
- short outline, which reflects the basic factual material of the topic.

#### **Academic Virtue Policy**

- independent performance of all works, tasks, forms of control, provided by the working program of the discipline "Physical and Rehabilitation Medicine";
- reference to the sources of information when using ideas, developments, statements, information;
- observing the rights of the legislation on copyright and related rights;

- providing reliable information about the results of own educational (scientific, creative) activities, used research methods and information sources.

**Attendance and Lateness Policy**

Attendance in all types of classes is mandatory. Tardiness for all types of classes is prohibited.

**Mobile devices**

During all types of classroom activities (lectures, practical classes), as well as control activities (final practical classes, exams), the use of micro headphones, phones, smartphones, tablets is prohibited.

During distance learning in conditions of special epidemic regime (adaptive quarantine), Zoom and / or Microsoft Teams platforms are used.

**Behavior in the classroom**

Behavior in the classroom during all types of training sessions (Lectures, practical sessions) must be appropriate for a medical student.

Teachers and students should be in medical gowns and caps, during full-time classes in conditions of special epidemic regime (Adaptive Quarantine) - in properly dressed protective medical masks or respirators.