

Odessa National Medical University
Medical faculty №2
Department of Physical Rehabilitation, Sports Medicine, Physical Training and Valeology
SYLLABUS OF ACADEMIC DISCIPLINE
«FUNDAMENTALS OF SPORTS MEDICINE»

Course scope	Faculty of Stomatology - 2.0 ECTS credits, 60 hours.
Semester, year of study	IV semester , II year
Days, time, location	According to the schedule.
Teachers	1. Iushkovska Olga. Head of the department, doctor of medical sciences, professor med_rehab@ukr.net 2. Kuhar Natalia. Ph.D., Associate Professor kuhar_nataliya@ukr.net 3. Plakida Alexander. PhD., Associate Professor. Responsible for international work, scientific work and scientific student team of the department. aplakida01@gmail.com 4. Semenenko Oleg. Assistant. Responsible for the postgraduate work of the department. osemenenko447@gmail.com 5. Filonenko Alyona. Assistant alena.filonenko@gmail.com 6. Shahnazaryan Kamo. Assistant. kamsax@rambler.ru
Contact numbers	+380(48) 723-05-68, +380 (48) 728-50-30,
E-mail	sportmed@onmedu.edu.ua
Teacher's workplace	Department of Physical Rehabilitation, Sports Medicine, Physical Training and Valeology, address: Odessa, street Olgievskaya, 4-A.
Counseling for students	Thursday - 15.00 - 17.00. Saturday - 9.00 - 12.00. Conducted by the next teacher according to the schedule of shifts. (For the period of quarantine - by E-mail of the department: sportmed@onmedu.edu.ua , as well as using Viber, Facebook and Telegram messengers and the use of the Zoom platform and / or Microsoft Teams).

COMMUNICATION

The system of organization of classes, is carried out with the help of E-mail department: sportmed@onmedu.edu.ua, as well as with the help of messengers Viber, Facebook and Telegram and the use of the platform Zoom and / or Microsoft Teams.

COURSE ANOTATION

Fundamentals of sports medicine is a clinical discipline that studies the positive and negative effects of physical activity of varying intensity (from hypo- to hyperdynamic) on the body of healthy and sick human. Sports medicine promotes the rational use of physical culture and sports for the harmonious development of man, strengthening his health, increase general and special performance and disease prevention.

Course prerequisites: based on the study by students of the Ukrainian language (in the professional direction), normal anatomy, physiology, pathological anatomy, pathophysiology, pharmacology, biochemistry, pediatric propaedeutic, general surgery, clinical anatomy and operative surgery, medical psychology, internal medicine propaedeutic, traumatology and orthopedics, obstetrics and gynecology, neurology, emergency and emergency medical care.

Post requisites of the course: provides a foundation for students to study manual therapy, cosmetology, current problems of physiotherapy, balneology and rehabilitation, information technology in medicine, and the fundamentals of reflexology.

The purpose of teaching the discipline Fundamentals of Sports Medicine is to give students the necessary knowledge, skills and abilities to use the basic forms, tools and methods of sports medicine in their future practice.

The purpose of the course Fundamentals of Sports Medicine is to teach students to use the means of physical culture in their practical activities for the rapid recovery of functions impaired during the disease or damage, increase physical performance, prevent the effects of the pathological process.

Expected results.

As a result of studying the discipline, higher education seekers must

know:

- specificity, approaches according to the bio-psycho-social model;
- physical rehabilitation (recovery and compensation) strategies and their pathophysiological basis, rehabilitation prognosis;
- The principles of patient-centeredness in physical rehabilitation and sports medicine;
- principles of physical rehabilitation organization;
- principles of goal-setting in physical rehabilitation and sports medicine;
- the rights, duties and responsibilities of a physical rehabilitation and sports medicine physician;
- rehabilitation technologies in sports medicine;
- the principles of creating and applying an individual physical rehabilitation program;
- the meaning and be able to apply the principles of effective cooperation with other health care professionals, particularly specialists in physical rehabilitation and sports medicine;
- regulations in the health care system, especially in the area of protection of patients' rights;
- principles of evidence-based medicine, particularly the principles of evidence-based medicine in physical rehabilitation and sports medicine;
- principles of medical ethics and deontology;
- current legislation and regulatory documents governing the activities of health care authorities and institutions;
- basics of law in medicine;
- performance indicators of health care institution, rehabilitation institution, dispensary supervision and medical supervision;
- general principles of diagnostics and treatment of diseases of internal organs, nervous system, principles of treatment of traumatic injuries in children and adults,
- principles and basic medical problems of transitional periods of human life;
- current legislation and principles of medical and social expertise;
- forms and methods of health education among the population;
- rules of registration of medical, rehabilitation and medico-expert documentation;
- advanced information and Internet technologies;
- modern scientific literature and scientific and practical periodicals on specialty, methods of its analysis and generalization.

be able to:

- identify and properly document necessary patient information to inform and incorporate the opinions of peers and other experts;
- assess and adequately respond to individual needs and changes in the health status of patients;
- to be guided by the current legislation of Ukraine on health care and regulations governing the activities of health care authorities and institutions, the organization of physical rehabilitation and sports medicine;
- improve the physical, mental functioning and activity of patients, contribute to improving their quality of life and ensure full social functioning (participation). If necessary, directly treat the patient's corresponding disease, receive rehabilitation assistance. In the case of prolonged symptoms of the disease, functioning, activity and participation must be improved using specialized methods and techniques within the framework of physical rehabilitation;
- provide emergency medical care for acute conditions, particularly those that may arise during physical rehabilitation;
- work closely with allied professionals and services;

- participate in the monitoring of public health and promote the dissemination of knowledge on the organization of physical rehabilitation among the population;
- observe the principles of medical deontology;
- plan their work and analyze their results;
- keep medical and rehabilitation documentation. Continuously improve their professional level.

COURSE DESCRIPTION

Forms and methods of teaching

The course will be set out in the form of lecture classes (10 hours.), practical classes (30 hours.), students' independent work (50 hours).

During the teaching of the discipline will be used the following teaching methods: verbal (lecture, conversation); visual (multimedia presentations, diagrams, tables); practical classes with the use of dummies; work with the textbook (independent work of students), the performance of individual independent tasks.

The content of the discipline

Part I. Medical and pedagogical control in the process of training

Theme 1: Physical medicine and sportsmen medical examination. Definition of sports medicine. Goal and objectives of sports medicine. Brief historical information about the development of sports medicine. Relationship of sports medicine with other sciences. Principles of organization of domestic sports medicine. Medical examinations of athletes and sportsmen. The task of medical examinations of physical trainers and athletes.

Medical and pedagogical control. Definition of the concept of "Physician-Pedagogical Control" (PPC). Purpose and objectives of the PPC. Forms of LPC organization. Medical and biological methods of LPC and their assessment. Anamnesis.

Clinical and biochemical methods - determination of lactic acid, inorganic phosphates and urea. Self-monitoring of athletes and physical athletes. Subjective data of self-monitoring. Objective data of self-monitoring. Peculiarities of LPC for the middle-aged and elderly people. A set of medical examinations for admission to engage in recreational physical training. Frequency of medical examinations depending on age. The formation of medical groups, taking into account the characteristics of the state of health. Motor modes in the system of health-improving physical culture: rehabilitation, general action, training, support for sports longevity.

Part II. Basics of General Pathology.

Theme 2: Basics of General Pathology. Definition of the concept of "pathology". The concept of health and disease. Causes of diseases (external and internal). Forms of diseases (acute, chronic). Theories of the origin of diseases (monocausality, conditionality, constitutionalism).

Sports pathology. General characteristics of diseases in athletes. Sports traumatism. Causes, mechanisms and prevention of sports injuries in various sports. Acute pathological conditions. Rehabilitation of sportsmen after illnesses and traumas. Motor regime during illness and recovery.

Part III. Determination and evaluation of physical development. Sports selection.

Theme 3: Physical development. Allocating students to medical groups. Research and evaluation of physical development. Definition of physical development. The goal of research and evaluation of physical development in not athletes and athletes. Factors affecting physical development.

Athletic selection. Features of physical development and physique of representatives of various sports. The purpose and tasks of sports selection and sports orientation. Age periods of the beginning of training in various sports. Development of physical qualities of representatives of various sports. Methods of sports selection and sports orientation.

Part IV. Methods for determining and assessing the functional state of the cardiovascular system. Application of functional breathing tests.

Theme 4 The S.P. Letunov's test The goal of the S.P. Letunov's three-moment combined functional test. Types of reaction of the cardiovascular system to physical load during the S.P. Letunov's test (normotonic, dystonic, hypertonic, hypotonic, reaction with stepwise increase of systolic pressure).

Orthostatic test, Buerger and Fleck tests. Cumulative changes in the myocardium during systematic exercise. "Physiological sport heart" and "pathological sport heart".

Stange, Henchy, Serkin tests Cumulative changes in the respiratory system during systematic sports training. Methods of investigation of the respiratory system. Functional breathing tests. Tests Stange, Henchy, Serkin, Rosenthal, Shafranovsky's. Purpose of use of respiratory tests. Methods of tests Stange, Henchy. Evaluation of Serkin's test.

Rosenthal's and Shafranovsky's tests Technique and evaluation of Rosenthal's and Shafranovsky's tests. Cumulative changes in the respiratory system during systematic training in sports.

Part V. Determination of aerobic and anaerobic performance. Physiological characteristics of physical training.

Theme 5. Determination of aerobic performance. Contraindications to physical exercise tests. Indices of aerobic and anaerobic (lactate) performance. Methods of aerobic and anaerobic (lactate) performance assessment. Evaluation criteria. Factors that affect aerobic and anaerobic performance. Factors that influence exercise performance. Training methods. Indicators by which physical activity is dosed. External and internal volume measures. Indices of external and internal intensity of loads. Indirect methods of determining energy expenditure during physical activity. Consequences of incorrect dosage of physical activity. Physiological load curve. Motor density of an activity.

Anaerobic (lactate) performance Indexes of anaerobic (lactate) performance. Methods of anaerobic (lactate) performance determination. Evaluation criteria. Factors influencing anaerobic performance.

Theme 6: Construction of the physiological load curve and exercise motor density. Means of recovery of ability to work (classification). Doping. Anti-doping control.

List of recommended reading

Main literature:

1. О.Г. Юшковська, Т.Ю. Круцевич, В.Ю. Середовська, Г.В. Безверхня. Самостійні заняття з фізичного виховання Методичний посібник для студентів медичних та фармацевтичних закладів. Одеса, 2011. – 269 с.

2. Санология. Основы управления здоровьем: монография / Г.Л. Апанасенко, Л.А. Попова, А.В. Магльований. – LAMBERT (Германия), 2012. - 404 с.: рис., табл.

3. Магльований А.В. Санология. Основы управления здоровьем : монография / Г.Л.Апанасенко, Л.А.Попова, А.В.Магльований. – LAMBERT (Германия), 2012.- 404 с. : рис., табл.

4. Фізична реабілітація, спортивна медицина : підручник для студ. вищих мед. навч. закладів / В. В. Абрамов, В. В. Клапчук, О. Б. Неханевич, А.В.Магльований [та ін.] ; за ред. професора В. В. Абрамова та доцента О. Л. Смирнової. – Дніпропетровськ, Журфонд, 2014. – 456 с. : іл. 79

5. Фізична реабілітація хворих на ішемічну хворобу серця. Юшковська О.Г. Монографія /Одес. держ. мед. ун-т – Одеса: – 2010. – 224 с.

6. Основы физической реабилитации: учебник для студентов вузов / О.К. Марченко. – К.: Олимп. лит., 2012. – 528 с.

7. Фізична реабілітація, спортивна медицина: підручник для студентів вищих мед. навч. закладів / В.В. Абрамов, В.В. Клапчук, О.Б. Неханевич [та ін.]: за ред. професора В.В. Абрамова та доцента О.Л. Смирнової. – Дніпропетровськ, Журфонд, 2014. – 456 с.: іл. 79.

8. Физическая и реабилитационная медицина: национальное руководство /под. редакцией Г.Н. Пономаренко. – М.: ГЭОТАР – Медиа, 2016. – 688 с.

9. Физическая реабилитация: методические рекомендации к практическим занятиям для студентов 4 курса медицинского факультета) /О.Г. Юшковская, Н.Н. Кухар, А.Л. Плакида – Одеса: «Полиграф», 2016. – 160 с.

10. 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.

11. De Lisa's. Physical Medicine and Rehabilitation / De Lisa's. – Lippincott Williams Wilkins; Fifth, North Am, 2010. – 2432 с.
12. R.L. Braddom. Physical Medicine and Rehabilitation / R.L. Braddom. – England: Elsevier Science, 2011. – 1536 с.
13. A position paper on physical rehabilitation medicine programmers in post-acute settings / Ward A., Gutenbrunner C., Giustini A., Delarque A., Fialka-Moser V., Kiekens C., Berleanu M., Christodoulou N. // J Rehabil Med 2012; (44): 289–298.
14. WHO World Report on Disability [Internet]. WHO. [cited 2014 Nov 8]. Available from: http://www.who.int/disabilities/world_report/2011/en/
15. WHO WHO global disability action plan 2014-2021 [Internet]. WHO. [cited 2014 Oct 21]. Available from: <http://www.who.int/disabilities/actionplan/en/>
16. World Health Organization. Rehabilitation 2030: a callforaction: Meeting report [Internet]. WHO; 2017. Available from: <http://www.who.int/disabilities/care/rehab-2030/en/>
17. European Physical and Rehabilitation Medicine Bodies Alliance. White Book on Physical and Rehabilitation Medicine in Europe. Eur J Phys Rehabil Med 2018. - Vol.54(2). – P.125-321.

Additional literature:

1. Улащик В.С. Общая физиотерапия: учебник /В.С. Улащик И.В. Лукомский – Минск, 2010.
2. Пономаренко Г.Н. Физические методы лечения: справочник. – 4-е изд., перераб. и доп. – СПб., 2011.
3. Пономаренко Г.Н. Физиотерапевтическая помощь в медицинских организациях – СПб., 2012.
4. Организация физиотерапевтической помощи: методическое пособие / под ред. Г.Н. Пономаренко. – СПб., 2013. – 136 с.
5. Пономаренко Г.Н. Основы молекулярной физиотерапии. /Г.Н. Пономаренко, В.С. Улащик – СПб., 2014. – 288 с.
6. Самостійні заняття з фізичного виховання. Навчальний посібник / О.Г. Юшковська, Т.Ю. Круцевич, В.Ю. Середовська, Г.В. Безверхня. – Одеса: Одес. Нац. Мед. ун-т., 2014 – 302 с. – (Б-ка студента-медика).
7. Физиотерапия. Классический курс /под ред. С.Б. Портера: пер. с англ. под ред. Г.Н. Пономаренко. – СПб.: Человек, 2014. – 761 с.
8. Епифанов В.А. Медицинская реабилитация /В.А. Епифанов, Е.Е. Ачкасова – М.: ГЭОТАР-Медиа, 2015. – 672 с.
9. Физическая терапия в реабилитации больных ишемической болезнью сердца: метод. рекомендации. – М.: НОРФРМ, 2015. – 40 с.
10. Спортивная медицина: Учебник для студентов ВУЗ физического воспитания и спорта / Л.Я-Г. Шахлина, Б.Г. Коган, Т.А. Терещенко, В.П. Тищенко, С.М. Футорный; под ред. Л.Я-Г. Шахлиной. – Киев: Наукова думка, 2016. – 452 с.: ил.
11. 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

Informational resources

- <http://www.mon.gov.ua> Офіційний сайт Міністерства освіти і науки, молоді та спорту України.
- <http://zakon2.rada.gov.ua/laws/show/3808-12> Закон України «Про фізичну культуру і спорт».
- <http://zakon4.rada.gov.ua/laws/show/1060-12> Закон України «Про освіту».
- <http://www.nbuv.gov.ua/> – Національна бібліотека України імені В.І. Вернадського.
- <http://library.gov.ua/> – Національна наукова медична бібліотека України.

- <http://osvita.ua/vnz/> – Вища освіта в Україні.
- <http://metodportal.com/taxonomy/term/35>– Методичний портал «Фізичне ВИХОВАННЯ».
- <http://www.tmfv.com.ua/>– журнал «Теорія та методика фізичного виховання».
- <http://www.breath.ru/v.asp?articleid=937> калькулятор калорій онлайн
- www.universalinternetlibrary.ru/book/medzina3/0.shtml

EVALUATION CRITERIA

Assessment of students' independent work

Independent work of students, which is provided in each topic, along with the classroom work, is evaluated during the current control topics in the form of theoretical testing.

Assessment of individual assignments of the student

Completion of an individual assignment is credited to the student only after successfully defending it in the practical session. Depending on the quality of performance and defense of the individual task the student may receive the traditional grades of "5", "4", "3" and "2".

The current control

The current control involves 100% delivery of control standards and tests from independent work (DLS), the students of the group with the obligatory assessment of all components of classes - test control, control standards. 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).

Individual assignment assessment

The completion of an individual assignment is credited to a student only after his successful defense in a practical lesson. Depending on the quality of performance and defense for an individual task, a student can receive traditional marks "5", "4" and "3".

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

The final control of the mastery of the discipline in the form of credits is assessed on a two-point scale:

- **"passed"** is given to a student who has completed the curriculum of the discipline, has no academic debt;

level of competence - high (creative)

- **"not passed"** is given to a student who has not completed the curriculum of the discipline, has academic debt (average score below 3.0 and / or missing classes), the level of competence is low (receptive-productive).

Assessment of academic progress

Assessment of student progress in the discipline is a rating and exhibited on a multi-point scale as the sum of points for the current control of knowledge and has a definition of the system of UST and the scale adopted in Ukraine.

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

Credit

Credit is awarded to students who have fully attended classroom training sessions in the discipline, provided by the curriculum and when assessing each control test, received marks on the traditional 4-point scale (2,3,4,5) and have completed all types of work provided by the curriculum. Students who have a score on the traditional 4-point scale (2) and have not completed all types of work required by the curriculum do not receive credit. Students who have not completed all types of work provided by the curriculum for a valid reason are made adjustments to the individual curriculum and allowed to work off the academic debt by a certain deadline. At the end of the study of the discipline current progress is calculated as the average score of all scores received by the student on a traditional scale, rounded to two (2) decimal places after the decimal point.

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:

Average score for the discipline	Score on a 200-point scale
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 "Fundamentals of Sports 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.