Ministry of Healthcare of Ukraine
Poltava State Medical University

Department of Internal Medicine № 3 with Phthisiology

SYLLABUS

PHTHISIOLOGY
(title of the academic discipline)

compulsory academic discipline
(compulsory / selective discipline)

level of higher education	the second (master's) level of higher education
field of knowledge	22 «Healthcare»
specialty	222 «Medicine»
academic qualification	Master of Medicine
professional qualification	Medical Doctor
academic and professional program	«Medicine»
mode of study	full-time
course(s) and semester(s) of study of the discipline	IV course VII - VIII semester

Poltava – 2024

INFORMATION ABOUT LECTURERS WHO DELIVER THE ACADEMIC DISCIPLINE

Surname, name, patronymic of the lecturer (lecturers), scientific degree, academic title	Yareshko Anatolii Hryhorovych, doctor of medical sciences, professor; Vorodyukhina Alla Kyrylivna, candidate of medical sciences, associate professor; Filatova Olena Viktorivna, candidate of medical sciences, associate professor; Kulish Maryna Volodymyrivna
Profile of the lecturers	https://int-med-three.pdmu.edu.ua/team
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MAIN CHARACTERISTICS OF THE ACADEMIC DISCIPLINE

The scope of the academic discipline (module)

Number of credits / hours – 3,0 / 90,0 of which:
Lectures (hours) – 8
Seminar classes (hours) are not included in the work curriculum
Practical classes (hours) – 30
Self-directed work (hours) – 52
Type of control: final modular control

The policy of the academic discipline

The organization of the educational process under the educational component "Phthysiology" is implemented at the Department of Internal Medicine No. 3 with phthisiology of the Poltava State Medical University in accordance with the "Regulations on the Organization of the Educational Process at the Poltava State Medical University" and other current regulatory documents (https://www.pdmu.edu.ua/n-process/department-npr/normativni-dokumenti).

Conducting the educational process in the discipline "Physiology" in special conditions (martial law, quarantine during a pandemic, etc.) is carried out using distance learning technologies, in particular, lectures and practical classes are conducted using the ZOOM platform, Google Meet, Google Classroom, and others.

Applicants of higher education are obliged to fully master the knowledge, skills, practical skills and competences of the academic discipline "Physiology", adhering to the principles of academic integrity - "Regulations on Academic Integrity of Education Applicants and Employees of Poltava State Medical University" (https://www.pdmu.edu.ua/storage/sections_nv/docs_links/Sj670MBVmC9qGVuTmHU8k9ZGKuX3DlzIwRNr8pBu.pdf?_ga=2.258226506.1531052886.1673862262-1300049335.1674110252).

Observance of academic integrity involves: independent performance of educational tasks, compliance with copyright legislation, provision of reliable information about the results of initial and scientific activities. A violation of academic integrity is considered to be: academic plagiarism, self-plagiarism, falsification, writing

off, bribery. For violations of academic integrity, students may be prosecuted according to regulatory documents.

The presence of students of higher education at all types of classes is mandatory (except for good reason), lateness to classes is unacceptable!

Description of the academic discipline (summary)

"Phthisiology" is a clinical discipline, during the study of which students acquire basic theoretical knowledge on the diagnosis, treatment and prevention of tuberculosis, diagnosis of complications of tuberculosis that require emergency care, organization of medical care for patients with tuberculosis in primary, secondary and tertiary levels. Assimilation of theoretical material is accompanied by the acquisition of appropriate integrated, general and professional competencies.

Pre-requisites and post-requisites of the academic discipline (interdisciplinary links):

prerequisites - "Physiology" as an educational discipline is based on the study of human anatomy by students of higher education; histology, cytology and embryology; physiology; microbiology, virology and immunology; pathophysiology; pathomorphology; radiology; pharmacology; propaedeutics of internal medicine; propaedeutics of pediatrics; hygiene and ecology and integrates with these disciplines;

post-requisites - "Physiology" as an educational discipline involves the study of relationships with the following disciplines: internal medicine, including clinical pharmacology, clinical immunology and allergology, occupational diseases; surgery, including pediatric surgery, neurosurgery; pediatrics with neonatology and children's infectious diseases; neurology; otorhinolaryngology; ophthalmology; Infectious diseases; dermatology, venereology; emergency and urgent medical care, oncology and radiation medicine; obstetrics and gynecology; urology and formation of skills to apply knowledge of phthisiology in the process of further education and in professional activity.

The aim and tasks of the academic discipline:

- the aim of studying the academic discipline is to familiarize students with the main problems in modern phthisiology, mastering the knowledge of the organization of medical care for patients with tuberculosis, forming the basics of clinical thinking in students, acquiring professional competencies of tuberculosis examination, differential diagnosis of tuberculosis with other diseases, prescribing treatment and providing emergency medical care in emergencies;
- the main tasks of studying the discipline are to master students' skills in diagnosing, treating and preventing tuberculosis, diagnosis of complications of tuberculosis that require emergency care, organization of medical care for patients with tuberculosis at the primary, secondary and tertiary levels.

Competences and learning outcomes in accordance with the academic and professional program, the formation of which is facilitated by the discipline (integral, general, special)

The discipline "Phthisiology" provides students with the acquisition of competencies:

- *integral:*

the ability to solve complex problems, including those of a research and innovation nature in the field of medicine. Ability to continue learning with a high degree of autonomy;

- *general:*

1. Ability to abstract thinking, analysis and synthesis.
2. The ability to learn and master modern knowledge.
3. Ability to apply knowledge in practical situations.
4. Knowledge and understanding of the subject field and understanding of professional activity.
5. Ability to adapt and act in a new situation.
6. Ability to make informed decisions.
7. Ability to work in a team.
8. Ability to interpersonal interaction.
9. Ability to communicate in a foreign language.
10. Ability to use information and communication technologies.
11. Ability to search, process and analyze information from various sources.
12. Determination and persistence in relation to assigned tasks and assumed responsibilities.
13. Awareness of equal opportunities and gender issues.
14. The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.
15. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, to use various types and forms of motor activities for active recreation and leading a healthy lifestyle.

- *special (professional):*

1. Ability to collect medical information about the patient and analyze clinical data.
2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
3. The ability to establish a preliminary and clinical diagnosis of the disease.
4. The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
5. The ability to determine the nature of nutrition in the treatment and prevention of diseases.
6. Ability to determine the principles and nature of treatment and prevention of diseases.
7. Ability to diagnose emergency conditions.
8. Ability to determine tactics and provide emergency medical care.

9. Ability to perform medical manipulations.
10. Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
11. Ability to carry out sanitary and hygienic and preventive measures.
12. Ability to plan and carry out preventive and anti-epidemic measures regarding infectious diseases.
13. Ability to carry out a work capacity examination.
14. Ability to maintain medical documentation, including electronic forms.
15. The ability to assess the impact of the environment, socioeconomic and biological determinants on the state of health of an individual, family, population.
16. Ability to conduct epidemiological and medical-statistical studies of the health of the population; processing of social, economic and medical information.
17. The ability to clearly convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular, to people who are studying.
18. Ability to develop and implement scientific and applied projects in the field of health care.
19. Compliance with ethical principles when working with patients, their relatives, and laboratory animals.
20. Observance of professional and academic integrity, bearing responsibility for the reliability of the obtained scientific results.

Program learning outcomes according to the educational and professional program, the formation of which is facilitated by the discipline:

1. Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
2. Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
3. To highlight and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
4. Collect complaints, anamnesis of life and diseases, evaluate the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 4), taking into account the age of the patient.
5. To establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of the health care institution (according to list 2).

6. Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).
7. Determine the main clinical syndrome or what causes the severity of the condition of the victim/injured (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care institution, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.
8. Determine the nature and principles of treatment of patients (conservative, operative) with diseases (according to list 2), taking into account the age of the patient, in the conditions of a health care institution, outside its boundaries and at the stages of medical evacuation, including in field conditions, on the basis of a previous clinical diagnosis, complying with the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, to be able to substantiate personalized recommendations under the supervision of the head physician in the conditions of a medical institution.
9. Determine the necessary mode of work, rest and nutrition based on the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
10. Form rational medical routes for patients; organize interaction with colleagues in their own and other institutions, organizations and institutions; to apply tools for the promotion of medical services in the market, based on the analysis of the needs of the population, in the conditions of the functioning of the health care institution, its division, in a competitive environment.
11. To perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
12. To plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.
13. Analyze the epidemiological situation and carry out mass and individual, general and local prevention of infectious diseases.
14. Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
15. Apply modern digital technologies, specialized software, and statistical data analysis methods to solve complex healthcare problems.
16. To organize the necessary level of individual safety (own and the persons one cares about) in case of occurrence of typical dangerous situations in the individual field of activity.
17. Clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.
18. Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects. Use international

Greek-Latin terms, abbreviations and clichés in professional oral and written communication.

19. To plan, organize and carry out measures for the specific prevention of infectious diseases, including in accordance with the National calendar of preventive vaccinations, both mandatory and recommended. Manage vaccine residues, organize additional vaccination campaigns, including immunoprophylaxis measures.

Learning outcomes for the discipline:

after completing the study of the academic discipline, applicants of higher education must

know:

- main epidemiological indicators of the prevalence of tuberculosis;
- risk factors for tuberculosis;
- pathogenesis of tuberculosis;
- leading clinical symptoms and syndromes of tuberculosis;
- laboratory methods of tuberculosis diagnosis;
- microbiological methods of tuberculosis diagnosis;
- radiological methods of tuberculosis diagnosis;
- methods of diagnosis of latent tuberculosis infection;
- histological diagnosis of tuberculosis;
- criteria for tuberculosis activity;
- clinical classification of tuberculosis;
- primary and secondary forms of tuberculosis of different localization;
- differential diagnosis of tuberculosis with other diseases;
- regimens of antimycobacterial therapy of tuberculosis with preserved sensitivity to antibacterial drugs and chemoresistant tuberculosis;
- side effects of anti-TB drugs;
- complications of tuberculosis;
- tuberculosis prevention measures;
- infection control measures;
- features of the course of tuberculosis against the background of HIV / AIDS, gastric and duodenal ulcers, occupational dust diseases, diabetes and other diseases;
- features of tuberculosis in pregnant women and women in labor.

be able to:

- identify and identify the leading clinical symptoms and syndromes of tuberculosis;
- prescribe and analyze the results of laboratory, microbiological, radiological, histological methods of tuberculosis diagnosis;
- analyze the results of tuberculin tests and quantiferon test;
- to carry out differential diagnosis of tuberculosis with other diseases;
- establish a probable preliminary and clinical diagnosis of tuberculosis;
- prescribe treatment to patients with sensitive and chemoresistant tuberculosis and determine the results of treatment;
- prescribe preventive treatment of latent tuberculosis infection;
- diagnose and provide emergency care in emergencies in patients with tuberculosis;
- plan and implement anti-epidemic and preventive measures to prevent the spread of tuberculosis in foci of tuberculosis infection;

- determine the tactics of conducting persons subject to dispensary supervision;
- keep medical records of the patient with tuberculosis.

Thematic plan of lectures by module with an indication of the main issues considered at the lecture

Seq. No.	Title of the topic	Number of hours
Module 1. Tuberculosis		
1	Determination of the notion tuberculosis. History of phthisiology. Epidemiology of tuberculosis. Etiology and pathogenesis of tuberculosis. **Key issues:** Definition of tuberculosis as a disease. History of tuberculosis. The value of the works of Hippocrates, Avicenna, R. Laenek, R. Koch in the study of tuberculosis. The role of M.I. Pirogov, Kalmet and Guerin, S.P. Botkin, F.G. Yanovsky, O.A. Kisel, Z. Waxman, M.S. Pilipchuk, O.C. Mamolat in the development of the doctrine of tuberculosis. Epidemiology of tuberculosis in Ukraine and in the world. Etiology and pathogenesis of tuberculosis.	2
2	Diagnosis of tuberculosis. **Key issues:** Symptoms that may indicate tuberculosis. The place of laboratory methods in the detection of tuberculosis. Indications, advantages and disadvantages of microscopic diagnosis of tuberculosis. Culture methods for detection of Mycobacterium tuberculosis on liquid and dense nutrient medium. Drug sensitivity tests. Molecular genetic diagnosis of tuberculosis. Xpert MTB / RIF and GenoType MTBDRplus methods: application features, indications, advantages and disadvantages, interpretation of results. The role of radiological research methods in the diagnosis of tuberculosis. The role of instrumental and invasive methods in confirming the diagnosis. Tuberculin diagnosis. Quantiferon test.	2
3	Clinical classification of tuberculosis. Clinical forms of primary and secondary tuberculosis. **Key issues:** Clinical classification of tuberculosis. Generalized (miliary) tuberculosis. Clinical forms of primary tuberculosis: tuberculosis of unknown location, primary tuberculosis complex, tuberculosis of intrathoracic lymph nodes: pathogenesis, clinic, diagnosis, differential diagnosis, treatment, consequences. Clinical forms of secondary tuberculosis: focal, infiltrative, tuberculoma, caseous pneumonia, fibrocavernous, cirrhotic tuberculosis: pathogenesis, clinic, diagnosis, differential diagnosis, treatment, consequences. Pleurisy of tuberculous etiology: pathogenesis, clinic, diagnosis, differential diagnosis, treatment, consequences.	2
4	Treatment and prophylaxis of tuberculosis. **Key issues:** Classification of anti-TB drugs. Standard, individual, empirical regimens of tuberculosis chemotherapy. Side effects of tuberculosis chemotherapy, strategies for overcoming them. Treatment monitoring, evaluation of effectiveness. Determining the results of tuberculosis treatment. Commitment to treatment. Methods of forming and maintaining commitment. Methods of surgical treatment of pulmonary and extrapulmonary tuberculosis. The concept of foci of tuberculosis infection. Ways to break the chain of transmission of tuberculosis infection. The concept of infection control and its scope. BCG vaccination: indications,	2

	contraindications, technique, course of the post-vaccination period, complications. Chemoprophylaxis of tuberculosis: types, indications, methods.	
	Total	8

Thematic plan of seminar classes by module and content modules with an indication of the main issues considered at the seminar class - the working curriculum does not provide

Thematic plan of practical classes by module and content modules, specifying the basic issues, which are considered at the practical class

Seq. No.	Title of the topic	Number of hours
	Module 1. Tuberculosis ***Content module 1. General issues of tuberculosis.***	
1	The control and correction of knowledge of tuberculosis on the basic disciplines. Epidemiology, etiology, pathogenesis of tuberculosis. **Key issues:** The main epidemiological indicators (infection, morbidity, morbidity, mortality). The causative agent of tuberculosis, morphological structure, properties, types of Mycobacterium tuberculosis (MBT) and their epidemiological significance. Variability of the Office (L-forms, filter forms; persistence, reversion). Office chemoresistance: types, clinical significance. Atypical mycobacteria. Sustainability of the Office in the environment. Sources of tuberculosis infection. Isolation of mycobacteria in the environment. Risk factors for tuberculosis. Ways of tuberculosis infection, the spread of the Office in the human body. Local and general reactions to tuberculosis infection. Immunity in tuberculosis. Pathogenesis of tuberculosis. The concept of latent tuberculosis infection. Primary and secondary tuberculosis.	2
	Content module 2. Detection and diagnosis of tuberculosis.	
2	Clinical diagnosis of tuberculosis: interrogation, inspection, palpation, percussion, auscultation. Curation of patients. **Key issues:** Features of clinical examination of a patient with tuberculosis: survey (complaints, medical history, course, epidemiological history, diseases, working and living conditions), physical methods of examination: the importance of palpation, percussion and auscultation in the examination of a patient with tuberculosis.	2
3	Laboratory diagnostics of tuberculosis. Methods of detection MBT. Histological diagnostics of tuberculosis. Curation of patients. **Key issues:** Diagnostic value of changes in the general analysis of blood at patients with pulmonary tuberculosis. Microscopic diagnosis of tuberculosis. Cultural methods for the study of Mycobacterium tuberculosis on a liquid and dense nutrient medium. Drug sensitivity tests. Molecular genetic diagnosis of tuberculosis. Methods Xpert MTB/RIF and GenoType MTBDRplus: features of application, indications, advantages and disadvantages, interpretation of results. Histological signs of tuberculosis.	2
4	Methods of radiological diagnosis of tuberculosis. Curation of patients. **Key issues:** Methods of X-ray examination of patients with tuberculosis of the respiratory organs and intrathoracic lymph nodes (X-ray, tomo- and fluorography, computed	2

	tomography, radioscopy). Radiological syndromes: lesions of the lung root, dissemination, infiltration, rounded shadow, cavity, fibrosis. Clinical forms of pulmonary tuberculosis in X-ray imaging.	
5	Tuberculin diagnostics (Mantoux test, test Koch). Quantiferon test. Curation of patients. **Key issues:** The concept of tuberculin. The role of tuberculin testing in the detection of latent tuberculosis infection. Mantoux test with 2 TU PPD: the purpose of production, technique, evaluation of results. The concept of "turn" of the tuberculin test. Differential diagnosis of tuberculin sensitivity in vaccinated and infected children and adolescents. Koch's test: the purpose of staging, technique of execution, evaluation of results. Quantiferon test.	2
Content module 3. Treatment and prevention of tuberculosis.		
6	Treatment of patients with tuberculosis: antimycobacterial drugs, protocols of treatment of patients with tuberculosis, pathogenetic and surgical treatment. Curation of patients. **Key issues:** Classification of anti-tuberculosis drugs, their characteristics. Categories of treatment of patients with tuberculosis. Treatment regimens for patients with active tuberculosis. Bacteriological principles of treatment of patients with chemoresistant tuberculosis. Carrying out anti-tuberculosis therapy in an outpatient setting. Methods of surgical treatment of pulmonary and extrapulmonary tuberculosis. Criteria for the treatment of patients with tuberculosis.	2
7	Prophylaxis of tuberculosis. Infection control. Curation of patients. **Key issues:** Social prevention. Sanitary prevention, its tasks. The concept of foci of tuberculosis infection. Categories of cells according to the degree of epidemiological danger, criteria for its determination. Work in the center of tuberculosis infection on tuberculosis prevention. Infection control. Specific prevention. BCG vaccination: types of vaccines, technique, contraindications, course after the vaccination period, complications. Chemoprophylaxis of tuberculosis: types, indications, methods.	2
Content module 4. Clinical classification of tuberculosis. Clinical forms of pulmonary and extrapulmonary tuberculosis. Complications of tuberculosis that require emergency care.		
8	Clinical classification of tuberculosis. Tuberculosis unknown location, tuberculosis of intrathoracic lymphatic nodes, primary tuberculosis complex: pathogenesis, clinic, diagnostics, differential diagnosis. Curation of patients. **Key issues:** Clinical classification of tuberculosis. Sections of classification that reflect the type of tuberculosis process, the main clinical forms, characteristics of the tuberculosis process and its complications, clinical and dispensary categories of patient registration, the effectiveness of treatment of patients with tuberculosis, the consequences of tuberculosis. Formulation of the diagnosis of tuberculosis according to the classification. Primary forms of tuberculosis: tuberculosis of unknown location, tuberculosis of intrathoracic lymph nodes, primary tuberculosis complex: pathogenesis, clinical manifestations, diagnosis, differential diagnosis.	2
9	Disseminated tuberculosis. Miliary tuberculosis. Tuberculosis of the nervous system and the meninges. Pathogenesis, clinic, diagnosis, differential diagnosis. Curation of patients.	2

	Key issues: Pathogenesis of disseminated pulmonary tuberculosis. Clinical variants of the course (acute (miliary), subacute, chronic) and their radiological features. Clinic, diagnosis, differential diagnosis, treatment, consequences. Miliary tuberculosis: pathogenesis, clinical variants, diagnosis, differential diagnosis, treatment, consequences. Tuberculosis of the nervous system and meninges: pathogenesis, clinic, diagnosis, differential diagnosis, treatment, consequences.	
10	Focal and infiltrative lungs tuberculosis. Caseous pneumonia. Tuberculoma of lungs. Pathogenesis, clinic, diagnostics, differential diagnostics. Curation of patients. **Key issues:** Pathogenesis, clinic and diagnosis of focal and infiltrative forms of tuberculosis. Causes of progression of focal, infiltrative tuberculosis. Differential diagnosis, treatment, consequences. The reasons for the development of caseous pneumonia, features of its course. Clinic, diagnosis, differential diagnosis, treatment, consequences. Pulmonary tuberculoma. Classification of tuberculosis. Pathogenesis, clinic, diagnosis, differential diagnosis, treatment, consequences.	2
11	Fibrousis-cavernous and cirrhotic lungs tuberculosis. Tubercular pleurisy. Pathogenesis, clinic, diagnostics, differential diagnostics, treatment. Curation of patients. **Key issues:** Fibro-cavernous and cirrhotic pulmonary tuberculosis: pathogenesis, clinical diagnosis, differential diagnosis, treatment, consequences. Tuberculous pleurisy: pathogenesis, clinical diagnosis, differential diagnosis, treatment, consequences.	2
12	Complication of tuberculosis: hemoptysis, pulmonary bleeding, spontaneous pneumothorax. Pathogenesis, clinic, diagnostics, differential diagnostics, treatment. Emergencies in patients with tuberculosis. Curation of patients. **Key issues:** Pathogenesis, clinic, diagnosis and principles of treatment of hemoptysis, pulmonary hemorrhage, spontaneous pneumothorax. Providing emergency care for pulmonary hemorrhage, spontaneous pneumothorax.	2
Content module 5. Tuberculosis in combination with other diseases.		
13	Tuberculosis of lungs in combination with other diseases: clinic, diagnosis, features of the course and treatment. **Key issues:** Features of the course of pulmonary tuberculosis combined with occupational dust diseases: clinic, diagnosis, treatment. Causes of tuberculosis in patients with HIV infection. Clinical picture, diagnosis and treatment of tuberculosis in HIV-infected people. Prevention of tuberculosis in HIV-infected people. Influence of other concomitant pathology (diabetes mellitus, pneumoconiosis, gastric and duodenal ulcer, etc.) on the course of tuberculosis: features of the course, diagnosis and treatment.	2
14*	Protection of medical history. **Key issues:** Discussion and defense of medical history.	2
15	Final module control	2
	Total	**30**

Note: * - a topic on which there must be a positive assessment.

Self-directed work

Seq. No.	Title of the topic	Number of hours
1	**Preparation for practical classes** – theoretical preparation and development of practical skills	14
2	**Elaboration of topics that are not included in the classroom lesson plan:**	
	1. Instrumental and invasive methods in the diagnosis of tuberculosis. **Main questions:** The role of endoscopic examination methods in the diagnosis of tuberculosis: types, indications, contraindications, performance technique. Spirography: indications, performance technique, evaluation of results. Biopsy: types, indications, contraindications, performance technique.	2
	2. Functional methods of examination of tuberculosis patients. **Main questions:** Functional methods of examination of patients with tuberculosis. Indications and contraindications for spirography. Characteristics of indicators of the respiratory function of the lungs. Definition of hidden respiratory failure.	2
	3. Tuberculosis of the upper respiratory tract and bronchi: classification, clinic, diagnosis, treatment. **Main questions:** Pathogenesis and pathological anatomy of tuberculosis of the bronchi, trachea and upper respiratory tract. Classification. Clinic. Diagnostics. Treatment.	2
	4. Tuberculous spondylitis, tuberculosis of other bones and joints: clinic, diagnosis, treatment. **Main questions:** Pathomorphogenesis of tuberculosis of bones and joints. Classification. Tuberculous spondylitis. Tuberculosis of the bones and joints of the limbs. Tuberculosis of flat bones. Tuberculous-allergic synovitis. Clinic. Diagnostics. Treatment.	2
	5. Tuberculous mesadenitis, tuberculous peritonitis and intestinal tuberculosis: clinic, diagnosis, treatment. **Main questions:** Clinic, diagnosis, treatment of tuberculous mesadenitis, tuberculous peritonitis and tuberculosis of the intestines.	2
	6. Tuberculosis of the kidneys and urinary tract: clinic, diagnosis, treatment. **Main questions:** Kidney tuberculosis. Tuberculosis of the ureter. Tuberculosis of the urinary bladder. Tuberculosis of the urethra. Clinic, diagnosis, treatment.	2
	7. Tuberculosis of the male genital organs: classification, clinic, diagnosis, treatment.	2

	Main questions: Prostate tuberculosis (tuberculous prostatitis). Tuberculosis of seminal vesicles (tuberculous vesiculitis). Tuberculosis of the epididymis (tuberculous epididymitis). Testicular tuberculosis (tuberculous orchitis). Tuberculosis of the seminal duct. Clinic. Diagnostics. Treatment. 8. Tuberculosis of the female genital organs: classification, clinic, diagnosis, treatment. **Main questions:** Tuberculous salpingitis, salpingoophoritis. Tuberculosis of the uterus (tuberculous endometritis). Combined lesion of the uterus and appendages. Tuberculosis of the cervix. Tuberculosis of the external genitalia. Clinic. Diagnostics. Treatment. 9. Tuberculosis of the eyes: classification, clinic, diagnosis, treatment. **Main questions:** Tuberculosis of the accessory eye apparatus. Tuberculosis of the anterior part of the eye. Tuberculosis of the back of the eye. Tuberculosis of the retina and its vessels. Tuberculosis of the optic nerve. Clinic. Diagnostics. Treatment. 10. Tuberculosis of the skin and peripheral lymph nodes: classification, clinic, diagnosis, treatment. **Main questions:** Tuberculosis of the skin and subcutaneous tissue. Tuberculosis of peripheral lymph nodes. Clinic. Diagnostics. Treatment.	2 2 2
3	**Writing an educational medical history**	12
4	**Preparation for the final modular control**	6
	Total	52

Individual tasks

1. Analysis of practical (problem) situations regarding diagnosis, differential diagnosis, treatment and prevention of tuberculosis, writing scientific papers and presenting the results of own research at conferences.
2. 2. Participation in olympiads in the academic discipline.

The list of theoretical questions for students' preparation for the final module control

1. The main epidemiological indicators of the prevalence of tuberculosis and their assessment.
2. The causative agent of tuberculosis, its types, properties. The concept of persistence and reversion of Mycobacterium tuberculosis.
3. Epidemic process in tuberculosis: source of tuberculosis infection, routes of transmission, susceptible organisms. Groups at increased risk of tuberculosis.
4. Pathogenesis of tuberculosis.
5. Algorithm of actions of doctors of establishments of the general medical network concerning detection of tuberculosis at the address of patients for the help.
6. Symptoms that may indicate tuberculosis.
7. The method of sputum smear microscopy: the role in the detection of tuberculosis, advantages and disadvantages.

8. Cultural study of sputum on a liquid and dense medium: advantages and disadvantages.
9. Molecular genetic methods of MBT detection: advantages and disadvantages.
10. Methods of determination and types of drug resistance of the causative agent of tuberculosis.
11. Methods of radiological diagnosis of tuberculosis.
12. Mantoux test with 2 TO PPD-L: purpose, technique, evaluation of results. "Turn" of tuberculin tests. Differential diagnosis of tuberculin sensitivity in vaccinated and infected children and adolescents.
13. Koch's test: the purpose of execution, technique of statement, an estimation of results.
14. Quantiferon test: purpose, evaluation of results, advantages and disadvantages.
15. Instrumental and invasive methods of diagnosing tuberculosis.
16. Functional methods of examination of patients with tuberculosis.
17. Characteristics of the main anti-TB drugs (isoniazid, rifampicin, pyrazinamide, ethambutol). Side effects of anti-TB drugs.
18. Treatment regimens for patients with tuberculosis with preserved sensitivity to the main anti-tuberculosis drugs and chemoresistant tuberculosis.
19. Pathogenetic treatment of tuberculosis.
20. Surgical treatment of tuberculosis.
21. Outbreaks of tuberculosis infection, their classification, criteria for determining the epidemiological danger of outbreaks of tuberculosis infection, anti-epidemic measures in the outbreak of tuberculosis infection.
22. Infection control.
23. BCG vaccination: technique, contraindications, course after the vaccination period, complications.
24. Chemoprophylaxis of tuberculosis: types, indications, modes of appointment.
25. Clinical classification of tuberculosis.
26. Tuberculosis of unknown location: definition, pathogenesis, clinic, diagnosis.
27. Primary tuberculosis complex: definition, pathogenesis, clinic, diagnosis, differential diagnosis.
28. Tuberculosis of intrathoracic lymph nodes: definition, pathogenesis, clinic, diagnosis, differential diagnosis.
29. Disseminated pulmonary tuberculosis: definition, pathogenesis, clinic, diagnosis, differential diagnosis.
30. Miliary tuberculosis: definition, pathogenesis, features of the clinical course, diagnosis, differential diagnosis.
31. Tuberculosis of the nervous system and meninges: definition, pathogenesis, clinic, diagnosis, differential diagnosis.
32. Focal pulmonary tuberculosis: definition, classification, pathogenesis, clinic, diagnosis, differential diagnosis.
33. Infiltrative pulmonary tuberculosis: definition, pathogenesis, clinical and radiological variants of infiltrates, diagnosis, differential diagnosis.
34. Caseous pneumonia: definition, pathogenesis, clinic, diagnosis, differential diagnosis.

35. Tuberculoma: definition, classification, pathogenesis, clinic, diagnosis, differential diagnosis.
36. Fibrous-cavernous pulmonary tuberculosis: definition, pathogenesis, clinic, diagnosis, differential diagnosis.
37. Cirrhotic pulmonary tuberculosis: definition, pathogenesis, clinic, diagnosis, differential diagnosis.
38. Tuberculous pleurisy: definition, pathogenesis, clinic, diagnosis, differential diagnosis.
39. Tuberculosis of other extrapulmonary localization (upper respiratory tract, bronchi, bones and joints, mesenteric lymph nodes, intestines and peritoneum, kidneys, female and male genital organs, eyes, skin, peripheral lymph nodes): classification, pathogenesis, clinic, diagnosis, treatment.
40. Pulmonary hemorrhage: classification, diagnosis. Emergency care for pulmonary hemorrhage.
41. Spontaneous pneumothorax: causes, clinic, diagnosis. Emergency care for spontaneous pneumothorax.
42. Features of the course of tuberculosis in combination with other diseases (HIV infection, occupational dust diseases, diabetes, etc.): clinic, diagnosis, features of the course and treatment.

The list of practical skills required for the final module control

1. Identify and identify the leading clinical symptoms and syndromes of tuberculosis.
2. Assign and analyze the results of laboratory, microbiological, radiological, histological methods of diagnosis of tuberculosis.
3. Evaluate and analyze the results of tuberculin tests and quantiferon test.
4. Carry out differential diagnosis of tuberculosis with other diseases.
5. Establish a preliminary and clinical diagnosis of tuberculosis.
6. Diagnose and provide emergency care in emergencies in patients with tuberculosis.
7. Prescribe treatment to patients with sensitive and chemoresistant tuberculosis and determine the results of treatment.
8. Prescribe preventive treatment of latent tuberculosis infection.
9. Plan and implement anti-epidemic and preventive measures to prevent the spread of tuberculosis in foci of tuberculosis infection.
10. Keep medical records of the patient with tuberculosis.

Teaching methods

- verbal (lecture, explanation, story, conversation, thematic discussion, brainstorming, case method);
- visual (demonstration);
- practical (curation of patients, description of radiographs, interpretation of data of laboratory-instrumental diagnostic methods, solution of situational problems, simulation tasks).

Assessment forms and methods

- oral survey,
- written (test) control,

- software computer testing,
- performance of situational tasks,
- practical verification of the level of mastery of practical skills,
- self-control, self-assessment methods.

The system of continuous and final control

Practical classes in the educational discipline "Physiology" are structured and involve comprehensive assessment of all types of educational activities performed by students of higher education. The criteria for evaluating the current educational activity and the final module control are brought to the attention of the students of higher education at the beginning of the study of the discipline (the first practical session).

At the **initial stage** of practical training, test control is carried out - at least 10 test tasks of the selective type with one correct answer. Its results are evaluated positively if the student of higher education gave at least 60% of the correct answers. In the overall evaluation of the current educational activity, this stage is 20%. In the first lesson, the test control is an input control of the level of knowledge of higher education seekers.

At the **main stage** of the practical session, the student's knowledge of the theoretical material is assessed through an oral interview and practical work (examination of a tuberculosis patient):

- collection of complaints, medical and life anamnesis, epidemiological anamnesis; examination and physical examination of the patient (detection of pathological changes on the part of the examined organs);

- the ability to analyze and interpret the results of the patient's examination, the data of X-ray, laboratory and functional research methods;

- the ability to correctly substantiate the conclusions regarding the patient's diagnosis, prescribe a treatment regimen and determine the prognosis for the patient's life and recovery.

In the overall assessment of the current educational activity, this stage is 50%, provided that the skills of tuberculosis diagnosis are confidently demonstrated.

At the **final stage** of practical training, control of theoretical and practical training is carried out with the help of situational problems, which allows you to assess the degree of achievement of the educational goal. It is evaluated positively provided that the student of higher education correctly solves 60% of the tasks. In the overall assessment of the current educational activity, this stage is 30%.

Curation of a patient with the **writing of a medical history** is a mandatory type of work for students. For writing and defending the medical history, the student receives an assessment at the last practical lesson, which precedes the final modular control.

Criteria for evaluating medical history:

"Excellent" - the medical history is written methodically correctly, without comments;

"Good" - the medical history is written methodically correctly, but individual sections are not detailed enough;

"Satisfactory" - there are comments regarding the completeness and sequence of the description of the sections;

"Unsatisfactory" - the scheme and rules of writing medical history are violated, there are significant errors in the description of the results of physical, laboratory,

microbiological, radiological and other methods of examination of the patient. In this case, the student of higher education is given the opportunity to rewrite the medical history taking into account the comments (the medical history must be written and secured for a positive evaluation).

The assessment of the student of higher education corresponds to the ratio established during the assessment of the level of formation of professional and general competences to the planned learning outcomes (in percentages). At the same time, standardized generalized criteria for evaluating the knowledge of higher education students are used (Table 1), presented in the "Regulations on the Organization and Methodology of Evaluating Educational Activities of Higher Education Students at the Poltava State Medical University" (https://www.pdmu.edu.ua/n-process/department-npr/normativni-dokumenti).

After the current lesson, preceding the final module control, the total evaluation of the current success rate for the module is converted from a traditional 4-point scale to a multi-point one (maximum 120 points). The conversion is carried out according to the following algorithm:

– the average grade of the student of higher education is calculated according to the traditional 4-point scale, obtained during the current classes (accurate to the hundredth of a point);

– in order to obtain a converted multi-point total assessment of current success for the module, the average assessment obtained on a traditional 4-point scale must be multiplied by a factor of 24. The exception is the case when the average assessment on a traditional 4-point scale is 2 points. In this case, the student of higher education receives 0 points on a multi-point scale;

– the average score of the current performance is calculated on the total number of classes in the module, and not on the ones actually attended by the student of higher education.

The unified table of correspondence of points for current success, points for the final module control and traditional four-point evaluation (table 2) is presented in the "Regulations on the organization and methodology of evaluating the educational activity of students of higher education at the Poltava State Medical University", appendix 1 (https://www.pdmu.edu.ua/n-process/department-npr/normativni-dokumenti).

The final module control is carried out after completing the study of the module in the last lesson. Students of higher education who do not have missed lectures and practical classes, have mastered the topics assigned for independent study, completed all types of educational tasks provided for by the curriculum (wrote and defended the medical history for a positive evaluation), and when studying the module are admitted to the final module control scored at least the minimum number of points (72 points) for the current educational activity.

If a student of higher education attended all practical classes, but did not score the minimum number of points for the current educational activity (average score - less than 3.0), he is not allowed to the final module control. In order to receive admission to the final module control, he needs to rewrite the unsatisfactory grades for the current educational activity.

Applicants of higher education who during the study of the module had an average score of current success from 4.50 to 5.0 are exempted from taking the final module control and automatically (upon consent) receive a final grade accordingly (table 2), while the presence of the applicant of higher education at the final modular control is mandatory. In the case of disagreement with the assessment, the specified category of higher education applicants makes the final module control according to general rules.

The control of the theoretical and practical training of the student of higher education during the final modular control is carried out according to the following regulations:

1. Conducting a test control (within 20 minutes - performance of 20 test tasks of the selective type with one correct answer).

2. Solving one situational problem within 10 minutes.

3. Interpretation of three radiographs in writing within 30 minutes.

Tasks for the final module control are standardized and aimed at monitoring the achievement of learning outcomes by the student of higher education. Tasks are checked by the teacher during the final module control as they are completed.

The result of the final module control is evaluated in points and cannot be converted into a traditional 4-point evaluation. The complex number of points that a higher education student gets based on the results of the final modular control has the following components:

1. According to the results of the test control, the applicant of higher education can receive up to 40 points (1 correct answer – 2 points; 20 correct answers x 2 points = 40 points).

2. For the correct answer to the question of the situational problem, the applicant of higher education receives 10 points.

3. For the correct interpretation of radiographs, a higher education applicant can receive up to 30 points (correct interpretation of 1 radiograph – 10 points, 3 radiographs x 10 points = 30 points).

The maximum number of points that a student of higher education can score based on the results of the final module control is 80 points, the minimum is 50 points. The final module test is considered not passed if the student of higher education scored less than 50 points.

Under the conditions of violation by the student of higher education of the rules of academic integrity (clause 2.2.5. "Rules of internal procedure for students of the Poltava State Medical University" (https://www.pdmu.edu.ua/n-process/department-npr/normativni- documents) assessment results obtained during the completion of the final module control are not credited to it and the grade "unsatisfactory" is given.

A student of higher education has the right to take and two retakes of the final module control. Final modular control is rewritten according to the regulations approved by the "Regulations on the Organization and Methodology of Evaluation of Educational Activities of Higher Education Applicants at the Poltava State Medical University" (https://www.pdmu.edu.ua/n-process/department-npr/normativni-documents).

The final grade for the discipline consists of the sum of the points of current success and the points obtained for the final module control. The maximum number of

points for the module is 200 points (of which the student receives up to 120 points for current performance).

Methodological support

1. Methodical developments of lectures.
2. Methodological guidelines for the independent work of higher education students during preparation for practical classes and in class.
3. Methodological guidelines for the independent work of higher education applicants on the study of topics submitted for independent study.
4. Recommended literature.
5. Multimedia presentations.
6. Materials for monitoring the knowledge, abilities and skills of higher education seekers (tests, tests from the bank of licensed exams "Step-2", situational tasks, radiographs and computer tomography of the chest organs, medical history; results of laboratory, bacteriological, instrumental and histological studies).

Recommended reading

Basic

1. Phthisiology : a teaching manual / B.F. Moskalenko, V.I. Petrenko, G.O. Timoshenko – Kiev: Medicina, 2012. – 216 p.
2. Phthisiology : textbook / V.I. Petrenko, O.K. Asmolov, M.G. Boyko [et al.] ; edited by V.I. Petrenko. – Kiev : AUS Medicine Publishing, 2015. – 416 p.

Supplementary

1. Tuberculosis : manuel for teacher, students and doctors / A.G. Yareshko, M.V. Kulish. – Poltava : Poltava Literator, 2011. – 156 p.

Information resources

1. Child and Adolescent TB Training Course for Healthcare Workers: an Online Course. – Access mode: https://coursesonline.theunion.org/theunion/2021/child-and-adolescent-tb-training-course-for-hcw/333811/faculty.presenter28s29.child.and.adolescent.tb.training.course.for.healthcare.html
2. WHO: tuberculosis. – Access mode: https://www.who.int/health-topics/tuberculosis#tab=tab_1

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